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**THE INTERNATIONAL CONFERENCE
3Ps (People, Planet & Prosperity):
Creating A Sustainable Global
Business Model**

**Institute of Technology and Science
Mohan Nagar, Ghaziabad
&
I.T.S School of Management
Mohan Nagar, Ghaziabad**

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I.T.S- The Education Group is engaged in imparting value based professional education in the field of Management, Information Technology, Dentistry, Biotechnology, Physiotherapy and Engineering. Established in 1995 under the aegis of Durga Charitable Society, the Group started with its first campus in Mohan Nagar, Ghaziabad, The Group is now having five campuses formidable with establishments at Muradnagar and Greater Noida, imparting multidisciplinary curricula.

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I.T.S Mohan Nagar, Ghaziabad is ISO 9001: 2015 certified and NAAC 'A+' grade accredited institute. The Institute conducts MBA and MCA programs affiliated to Dr A P J Abdul Kalam Technical University, Lucknow. I.T.S School of Management offers PGDM program, which is NBA accredited and granted equivalence of AIU. The BBA and BCA programs are affiliated to C.C.S. University, Meerut.

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I.T.S supplements education with its CSR activities offering help, care and guidance to the down trodden and unprivileged segments of the society. I.T.S-The Education Group offers nonprofit medical care to society through its two, 100 bedded fully equipped multi-specialty hospitals.

MESSAGE FROM THE CHAIRMAN

It gives me great pleasure that Institute of Technology and Science and I.T.S School of Management, Mohan Nagar, Ghaziabad are successfully organizing the International Conference on “3Ps (People, Planet & Prosperity): Creating A Sustainable Global Business Model)” on 3rd and 4th May, 2024.

The international conference is a flagship event in the calendar of the Institute of Technology and Science, Mohan Nagar. It provides a valuable opportunity for the confluence of ideas in diverse streams of thought in management and allied areas like Marketing, Human Resource Management, Finance, Operations, Information Technology, Ethics, International Business, etc.

I hope this conference will provide a fertile ground for the productive exchange of ideas and laying the foundation for further research in the relevant fields.

We are happy that Indian Academician and Researchers Association (IARA) has accepted to publish conference proceedings in its premier journal “International Journal of Advance and Innovative Research (IJAIR)”. I believe, publication of proceedings will help and encourage researchers and educationists to delve more into these areas and unearth newer nuggets of thought and wisdom.

Dr. R. P. Chadha
Chairman
I.T.S - The Education Group

MESSAGE FROM THE VICE CHAIRMAN

We feel extreme pleasure that Institute of Technology and Science and I.T.S School of Management, Mohan Nagar, Ghaziabad have organized two days international Conference on “3Ps (People, Planet & Prosperity: Creating A Sustainable Global Business Model”.

A heartening feature of the conference would be substantial participation and presentation of academicians, researchers and business professionals with thought provoking concepts and ideas on global competitiveness and sustainable development.

I hope that future conferences at I.T.S are able to build on this head start and and strengthen the path of knowledge and research in various fields of management and technology.

I express my sincere thanks for the concerted efforts of academic fraternity, researchers, business practioners and technologists for providing thought provoking contributions.

I am thankful to them for choosing to participate in the conference and have significantly contributed in raising the standards of academic excellence.

Shri Arpit Chadha
Vice Chairman
I.T.S-The Education Group

FROM THE DESK OF DIRECTOR

We feel delighted that Institute of Technology and Science, Mohan Nagar organized two days international Conference on “3Ps (People, Planet & Prosperity): Creating A Sustainable Global Business Model”.

The objective of the conference is to provide a platform to bring researchers, academicians, professionals and students from management, information technology, economics, environment and social science areas to interact and disseminate information on the prospects and challenges of global competitiveness and sustainable development.

The publication of the conference proceedings for the International Conference is the sum total transactions of thoughts and concepts delivered and presented by the participants and dignitaries deliberations on a variety of themes across diversified areas of management, information technology, business and society.

We are thankful to all teachers, researchers and business professionals who incurred their valuable time and efforts in writing research papers and contributed for publication and presentation in this conference.

With best wishes

Prof. (Dr.) V. N. Bajpai
Director
Institute of Technology & Science
Ghaziabad

PREFACE

This rapidly changing environment presented a challenge for business community to reassess the need of synchronizing people, planet and prosperity for sustainable growth. United Nations also emphasized and included people, planet and prosperity as an agenda for sustainable global development by 2030. The newer dimension of prosperity cannot be scripted without skilled manpower and protecting planet. Business community is integrating Green Tech, AI, Clean Energy and Net Zero Emissions in the newer business models for green and clean planet and training the human resource accordingly for effective and sustainable business growth for prosperity.

Viewpoints before organizing this conference and publication of this conference special Journal is addressing and documenting company's innovation and business strategies linked with People, Planet and prosperity in society to leverage company's core competencies and creating sustainable business development model.

We would also like to take this opportunity to express our deep sense of gratitude to the management, faculty, staff and students, without their efforts this conference would not have been possible. I am thankful to International Journal of Advanced and Innovative Research (IJAIR) and Indian Academicians and Research Association (IARA) that have shown interest in publishing this conference special journal.

With best wishes

Prof. (Dr.) Manoj Kumar Jha
Conference Convener

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CONTENTS

Research Papers

PEER-TO-PEER LENDING IN INDIA: ASSESSING THE RISE OF PEER-TO-PEER LENDING PLATFORMS AND THEIR ROLE IN PROVIDING ALTERNATIVE FINANCING OPTIONS FOR BUSINESSES AND INDIVIDUALS 1 – 8

Aarzo Saxena

NAVIGATING THE FUTURE: SMART SOLUTIONS FOR COMPETITIVE BUSINESS ADVANTAGE 9 – 20

Abhay Kumar Ray, Dr. Rupak Sharma, Smita Kansal, Dr. Sunil Kumar Pandey and Dr. Manoj Kumar Jha

EMPLOYER SUSTAINABILITY: AN SPECIAL FOCUS ON JOB SATISFACTION AND MOTIVATION FOR ORGANIZATION EFFECTIVENESS 21 – 24

Dr Annu Tomar

FOOD SECURITY CRISES IN INDIA AND ROLE OF LAW IN PREVENTION THESE :- A STUDY 25 – 29

Arun Kumar and Neha Rani

A STUDY ABOUT THE SOCIAL MEDIA USERS 'PREFERENCES TO PURCHASE ONLINE/OFFLINE PRODUCT/SERVICES 30 – 37

Prof. Ashutosh Sharma and Dr. Yagbala Kapil

A COMPARATIVE STUDY OF VALUE OF INR/USD BEFORE & AFTER VOSTRO ACCOUNTS HAVE BEEN INTRODUCED BY RBI IN INDIA 38 – 43

Prof. Ashutosh Sharma and Ashutosh Pandey

EXPLORING THE CULINARY TRAVEL INDUSTRY'S IMPACT IN INDIA 44 – 49

Ms. Astha Shukla, Ms. Sakshi Shukla and Mr. Shivansu Sachan

EDGE COMPUTING AND ITS IMPACT ON IOT (INTERNET OF THINGS) APPLICATIONS 50 – 56

Divya Dhyani, Manoj Kumar Jha and Manoj Kumar

THE NEGATIVE CONSEQUENCES OF FRUSTRATION FOR NEWCOMER ACTORS IN FILM AND TELEVISION 57 – 61

Dr. Amol Bhole

PEOPLE DEVELOPMENT AND HUMAN DEVELOPMENT INDEX 62 – 70

Dr Atul Mathur and Priyanka Jain

LEVERAGING INFORMATION TECHNOLOGY FOR STRATEGIC MANAGEMENT: TRENDS, CHALLENGES, AND OPPORTUNITIES	71 – 73
<i>Dr. Manoj Kumar Jha, Dr. Divya Dhyani and Dr. Vinay Kumar Srivastava</i>	
THE CHANGING LANDSCAPE OF INDIA’S CREDIT INDUSTRY	74 – 79
<i>Dr. Puneet Kumar, Dr. Surendra Tiwari and Dr. Nitin Saxena</i>	
THE ADVERTISEMENT EFFECTIVENESS OF HCL AMONG POTENTIAL EMPLOYEES IN NCR	80 – 91
<i>Dr. Sanjeev Tandon and Dr. Ruchi Tandon</i>	
SOCIAL ENTREPRENEURSHIP & ECONOMIC GROWTH FOR SUSTAINABLE DEVELOPMENT: A STUDY ON LOW- AND MIDDLE-INCOME COUNTRIES	92 – 96
<i>Dr. Gunjan Dwivedi</i>	
TRANSFORMATIVE EXPERIENCES IN SPIRITUAL TOURISM: UNVEILING THE CONTEXTUAL STIMULI	97 – 104
<i>Kamini Singla, Anand Thakur and Kavita Singla</i>	
FROM SCROLL TO SALE: HARNESSING THE FORCES OF DMC TOWARDS SUSTAINABLE PURCHASE INTENTION	105 – 111
<i>Anand Thakur, Kavita Singla, Kamini Singla, Simran Kaur and Parwinder Kaur</i>	
CORPORATE SOCIAL RESPONSIBILITY (CSR): THE SUSTAINABLE BALANCE AND INCLUSIVE GROWTH MODEL	112 – 115
<i>Dr. Mala Shharma and Dr. Pratibha Verma</i>	
EXAMINING GRADUATES' EMPLOYABILITY IN RELATION TO EDUCATION: A THOROUGH SYSTEMATIC REVIEW AND META-ANALYSIS	116 – 130
<i>Ms. Megha Mohan and Dr. Sachin Sabharwal</i>	
TRANSITIONING TO CLEAN ENERGY	131 – 138
<i>Prof. Nikhil Narang, Ms. Joyeeta Chakraborty and Ms. Riya Bharti</i>	
RELATIONSHIP OF WORK RELATED FACTORS WITH BURNOUT IN LIFE INSURANCE COMPANIES	139 – 143
<i>Naveela and Dr. Kanchan Rani</i>	
A STUDY OF SYSTEMATIC RISK OF SELECTED FMCG COMPANIES LISTED ON NSE	144 – 148
<i>Dr. Neeraj Sanghi and Dr. Gaurav Bansal</i>	
FINANCIAL RESPONSIBILITY AND ACCOUNTABILITY: AN ACCOUNTING OUTLOOK	149 – 154
<i>Dr. Neeraj Sanghi and Dr. Gaurav Bansal</i>	

EXPLORING THE IMPACT OF GENDER INEQUALITY, SOCIAL RESPONSIBILITIES ON INDIAN WOMEN AND HOW IT CREATES HARDSHIPS FOR THEM WHILE ADOPTING E-COMMERCE WITHIN THE MSME SECTOR	155 – 159
<i>Neha Sharma and Dr. Trilok Kumar Jain</i>	
EMOJI PREDICTION USING SENTIMENT ANALYSIS	160 – 168
<i>Nikita Malik, Nishkarsh and Shivam Joshi</i>	
DESIGN AND IMPLEMENTATION OF AN ECONOMICAL RADAR SYSTEM USING ARDUINO PLATFORM	169 – 177
<i>Nikita Malik, Vikrant Dubey and Prashant Suneri</i>	
ETHICAL CLIMATE IMPACT ON EMPLOYEES BEHAVIOR: A BIBLIOMETRIC ANALYSIS	178 – 189
<i>Pooja Mittal and Anil Kumar</i>	
INDIA’S DIRECTION TOWARDS SUSTAINABLE ENERGY ALTERNATIVES	190 – 198
<i>Dr Sachin Sabharwal, Pushan Sethi and Raghav Lakhotia</i>	
BUSINESS GROWTH THROUGH DIGITAL TRANSFORMATION	199 – 207
<i>Prof. Rahul Tripathi and Dr. Sachin Sabharwal</i>	
SUSTAINABILITY, DIGITALISATION: A NEW TUNE IN HUMAN RESOURCE MANAGEMENT	208 – 215
<i>Dr. Richa N. Agarwal and Mr. Akash Sharma</i>	
A STUDY ON WOMEN PIONEERING IN MALE DOMINATED IN INDIAN IT INDUSTRY	216 – 221
<i>Ms. Sanjana Kaushik, Kanika and Neha</i>	
INDIA’S RISING DEFENCE EXPORTS: A CRITICAL ANALYSIS	222 – 230
<i>Dr. Shailendra Kumar Dube and Professor Kumar Biswas</i>	
EXPLORING THE DYNAMICS OF COLLABORATION BETWEEN PR PROFESSIONALS AND AI SYSTEMS IN DEVELOPING AND EXECUTING COMMUNICATION STRATEGIES	231 – 244
<i>Prof. Shilpi Rana, Prof. Mansi Singh and Dr. Ashish Jha</i>	
REVIEW OF UTILIZE DATA SCIENCE TOOLS FOR SMALL BUSINESS GROWTH	245 – 248
<i>Ms. Shipra Tripathi</i>	
BUSINESS TO BUSINESS MARKETS AND MARKETING	249 – 253
<i>S. Soundarya and Dr. P.Tamilselvan</i>	

EFFECT OF GEOPOLITICAL REORDERING ON INDIAN DEMOCRACY	254 – 261
<i>Shuchita Gupta and Dr. Uma Gulati</i>	
DEMOGRAPHIC FACTOR AND THEIR IMPACT ON CONSUMER ATTITUDE TOWARDS GREEN DURABLE PRODUCTS IN DELHI/NCR	262 – 274
<i>Ms. Sweety Kumari and Dr. M.D. Ciddikie</i>	
AN ECONOMETRIC ANALYSIS OF THE INFLUENCE OF EXCHANGE RATE VOLATILITY ON TRADE BALANCE. A SPECIAL REFERENCE TO INDIA. (2003-2022)	275 – 280
<i>Umang Bhutani and Shefali Saini</i>	
WOMEN EMPOWERMENT THROUGH DIGITAL TRANSFORMATION @ 75 IN INDIA	281 – 286
<i>Dr. UrmilaYadav</i>	
CYBER SECURITY IN THE MODERN WORLD: INVESTIGATING THREATS, VULNERABILITIES, AND INNOVATIVE TECHNOLOGIES FOR ENHANCED DIGITAL SECURITY	287 – 292
<i>Vinita Tomar, Tarunim Sharma and Bhawesh Pande</i>	
A COMPARATIVE STUDY TO UNDERSTAND AUDIENCE’S PREFERENCE TO WATCH MOVIES ON OTT PLATFORMS AND CINEMA HALLS	293 – 299
<i>Prof. Yachna Malhotra, Ashutosh Sharma and Mr. Satyam Nice</i>	
PREDICTORS AND OUTCOMES OF ESG INVESTING: A POST-COVIDREVIEW	300 – 312
<i>Ms. Richa Dixit, Ms. Annu Aggarwal Dr Anjana Singh and Mr HimanshuTanwar</i>	
EFFECTIVENESS OF GAMIFICATION IN MANAGEMENT LEARNING AMONG STUDENTS OF DELHI NCR	313 – 321
<i>Prof. Yachna Malhotra, Prof. Ashutosh Sharma, Ananya Varshney and Roshan Kumar Agarwal</i>	
FOOD SECURITY AND LIVELIHOOD: A CASE OF UTTARAKHAND STATE	322 – 326
<i>Dr. Nirmesh Sharma and Dr. Vinay K Srivastava</i>	
DE-DOLLARIZATION AND RUPEE-NIZATION: CHANGING GLOBAL BUSINESS MODELS	327 – 341
<i>Professor Kumar Biswas and Dr. Shailendra Kumar Dube</i>	
HOW THE GROWING DEMAND FOR LUXURY COUNTERFEIT GOODS IS IMPACTING CONSUMER BEHAVIOUR ON A GLOBAL SCALE AND WHAT IT MEANS FOR THE GLOBAL ECONOMY	342 – 354
<i>Dr. Sonali Banerjee and Shagun Pandey</i>	

PEER-TO-PEER LENDING IN INDIA: ASSESSING THE RISE OF PEER-TO-PEER LENDING PLATFORMS AND THEIR ROLE IN PROVIDING ALTERNATIVE FINANCING OPTIONS FOR BUSINESSES AND INDIVIDUALS

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ABSTRACT

P2P lending, also known as peer-to-peer lending, has emerged as an alternative financing option for both businesses and individuals in India. This paper examines the benefits, risks, and regulations associated with P2P lending in India. The introduction of P2P lending in India has provided individuals and businesses with a new way to access financing. One of the key attractions of P2P lending is its accessibility. Some opponents of P2P lending argue that it lacks regulation and oversight, leading to potential risks for both lenders and borrowers. Without strict regulations in place, there is a concern that P2P lending platforms may not adequately screen borrowers, potentially leading to higher default rates. Additionally, the lack of regulatory oversight raises questions about investor protection and the potential for fraudulent activities within the P2P lending space. Critics also point out that the accessibility of P2P lending may attract individuals who are unable to secure traditional loans due to poor creditworthiness, leading to a higher likelihood of default and financial losses for lenders. Furthermore, this paper explores the regulatory landscape for P2P lending in India. It examines the existing regulations and the efforts made by regulatory bodies to address the potential risks associated with P2P lending. The paper also considers the benefits of P2P lending, such as providing access to finance for individuals and businesses who may have been overlooked by traditional lenders, promoting financial inclusion, and offering investors opportunities for competitive returns.

Keywords: peer-to-peer lending, alternative financing, investor protection, fraudulent activities, traditional loans, creditworthiness

INTRODUCTION

Peer-to-peer (P2P) lending in India has gained significant traction in recent years, providing an alternative source of financing for both individual borrowers and small businesses. This innovative form of lending allows individuals to borrow and lend money without the involvement of traditional financial institutions like banks. The P2P lending platforms in India act as intermediaries, connecting borrowers and lenders online, while also managing the credit assessment, disbursement, and collection processes.

P2P lending offers several advantages for both borrowers and lenders. Borrowers can often access funds more quickly than through traditional channels, and may find it easier to qualify for a loan, especially if they have limited credit history or are considered high-risk by banks. On the other hand, individual lenders have the opportunity to earn attractive returns on their investments, often higher than those offered by savings accounts or traditional fixed deposits.

However, along with the benefits, P2P lending also comes with risks. The absence of a regulatory framework specific to P2P lending in India has raised concerns about the potential for fraudulent activities, inadequate risk assessment, and the overall stability of the sector. Additionally, the default rates on P2P loans have been a point of concern, especially during economic downturns.

In terms of regulations, the Reserve Bank of India has taken initial steps to bring the P2P lending sector under its purview by issuing guidelines for non-banking financial companies engaged in P2P lending. These guidelines aim to safeguard the interests of participants, ensure fair practices, and promote the growth of P2P lending in a sustainable manner.

The P2P lending landscape in India continues to evolve, presenting both opportunities and challenges for stakeholders. As the sector matures and regulatory frameworks become more robust, it is important to closely monitor its developments and assess its impact on the broader financial ecosystem.

LITERATURE REVIEW

"Online Peer-to-Peer Lending: A Review of the Literature" by Shabeen Basha provides an overview of the current state of online peer-to-peer lending and the purpose of the paper. The paper aims to explore the benefits and challenges of online peer-to-peer lending and provide a comprehensive review of the existing literature on this topic. The literature review of online peer-to-peer lending focuses on the main business areas of commercial banks and examines the implementation cases of AI in these banks.

A.Gopakumar. "A Study on Non-Conventional Financing and the Growth of 'P2P Lending' during Covid-19 Pandemic in India" Peer-to-peer (P2P) lending has emerged as a non-conventional form of financing that connects borrowers directly with individual lenders through online platforms. During the COVID-19 pandemic in India, P2P lending experienced significant growth and played a crucial role in providing access to credit for individuals and small businesses. This study examines the growth of P2P lending during the COVID-19 pandemic in India and explores its impact on non-conventional financing. The study analyzes the factors contributing to the growth of P2P lending during the pandemic, such as increased demand for credit, limited access to traditional financing A.E. Harjanti, H. Mudiarti and B. Hedy. "The Influence of Peer-to-Peer Lending (P2P Lending) in Rural Credit Growth Bank" The research paper aims to investigate the impact of financial technology, specifically peer-to-peer lending (P2P lending), on the growth of rural credit banks in a specific context. The study utilizes data from rural credit banks to examine the effects of P2P lending on their growth. The authors utilized provincial data from 2013 to 2018 to construct a static panel model and a non-linear panel threshold model. The empirical research findings indicate that digital inclusive finance, particularly P2P lending, has a positive impact on the growth of rural credit banks.

S. Prudhvi and M. Bhattacharya. "STUDY OF SHADOW BANKING IN INDIA WITH A SPECIFIC REFERENCE TO P2P-NBFCS" This paper examines the process of P2P lending and operating strategies in India. The paper identifies regulatory hurdles and future evolutionary aspects of P2P lending.

V. Singh and B. Pushkar. "A Study on Financial Inclusion: Need and Challenges in India": The paper discusses the need for financial inclusion in India and the challenges associated with achieving it. It also mentions the role of digital technologies in driving financial inclusion. Understanding the Appeal of P2P Lending.

Examining the Risks of Peer-to-Peer Lending in India

While peer-to-peer (P2P) lending in India presents an enticing opportunity for both borrowers and lenders, it is imperative to delve deeper into the inherent risks associated with this alternative form of financing. One of the most significant risks facing P2P lending platforms is the lack of a robust regulatory framework tailored to the unique dynamics of the industry. The absence of comprehensive regulations can potentially leave the sector vulnerable to fraudulent activities, inadequate risk assessment practices, and operational instability.

Fraudulent activities pose a significant threat to the P2P lending landscape, undermining the confidence of both borrowers and lenders in the platform. Without stringent regulatory oversight, there is a heightened risk of fraudulent loan applications, misrepresentation of borrower information, and malpractices that can compromise the integrity of the lending process.

Moreover, the absence of a well-defined regulatory framework may lead to challenges in effectively managing risk within the P2P lending ecosystem. Inadequate risk assessment practices and insufficient borrower due diligence could accentuate the vulnerability of lenders to defaults, ultimately impacting the overall trust and sustainability of the industry.

Another critical risk factor is the susceptibility of P2P lending to economic downturns and fluctuations. In times of economic instability, the default rates on P2P loans tend to rise, amplifying the financial strain on individual lenders and potentially eroding the confidence of prospective investors in the sector.

Furthermore, the evolving nature of technology and cybersecurity threats introduces additional complexities and risks to P2P lending platforms. Without stringent cybersecurity measures and robust data protection protocols, these platforms are vulnerable to potential breaches, exposing sensitive financial and personal information of participants to security threats.

As the P2P lending landscape in India continues to advance, it is essential for industry participants and regulators to acknowledge and address these risks proactively. A cohesive regulatory framework that encompasses transparent governance, stringent risk management protocols, and cybersecurity measures is imperative to fortify the resilience of the P2P lending sector and sustain its long-term viability as a significant contributor to India's financial landscape.

The Evolving Regulatory Environment for P2P Lending in India

The regulatory environment for peer-to-peer (P2P) lending in India has witnessed significant developments aimed at enhancing transparency, ensuring fair practices, and safeguarding the interests of participants. The Reserve Bank of India has taken proactive measures to bring the P2P lending sector under its purview by issuing comprehensive guidelines for non-banking financial companies engaged in P2P lending. These guidelines signify a crucial step towards establishing a robust regulatory framework tailored to the unique dynamics of the P2P lending industry.

In addition to the initial guidelines, the regulatory landscape continues to evolve as the RBI and other regulatory authorities seek to address the complexities and risks associated with P2P lending. The emergence of a structured regulatory framework underscores the commitment to mitigating inherent risks, promoting industry stability, and fostering sustainable growth within the P2P lending sector.

Key areas of focus within the evolving regulatory environment include:

1. **Transparency and Disclosure Requirements:** Regulatory authorities in India are emphasizing the importance of transparency and disclosure within the P2P lending landscape to enhance investor confidence and empower informed decision-making. By implementing stringent disclosure requirements, P2P lending platforms are expected to provide comprehensive information about the risks, loan terms, and creditworthiness of borrowers to ensure transparency and mitigate asymmetries of information.
2. **Risk Mitigation and Governance Frameworks:** The evolving regulatory environment places significant emphasis on risk mitigation and robust governance frameworks to address the vulnerability of P2P lending platforms to fraudulent activities, defaults, and operational instabilities. Regulatory guidelines are anticipated to mandate stringent risk assessment practices, borrower due diligence, and governance protocols to fortify the resilience of the P2P lending ecosystem.
3. **Cybersecurity and Data Protection Measures :** Recognizing the increasing complexity and risks associated with technology, cybersecurity, and data protection, the regulatory framework is expected to encompass measures aimed at safeguarding the digital infrastructure of P2P lending platforms. Stringent cybersecurity protocols and data protection measures are pivotal in mitigating potential breaches and ensuring the confidentiality and integrity of participants' sensitive financial and personal information.

The Importance of Regulation and Investor Protection in P2P Lending

The discourse surrounding the regulation and investor protection in the peer-to-peer (P2P) lending sector has been a focal point of debates and discussions within the financial landscape of India. The fundamental question revolves around the balance between fostering innovation and protecting the interests of investors in this evolving financial ecosystem.

1. **Balancing Innovation and Investor Protection:** As the P2P lending industry continues to mature, there is an inherent tension between nurturing innovation and safeguarding the financial interests of both lenders and borrowers. Regulatory frameworks must strike a delicate balance that encourages the growth of P2P lending as an alternative source of credit while providing adequate safeguards to protect the investments and financial well-being of investors.
2. **Ensuring Fair and Transparent Practices:** The debate on regulation and investor protection emphasizes the need for fair and transparent practices within the P2P lending sphere. Through effective regulatory oversight and enforcement, investors can be assured of equitable treatment and access to comprehensive information about the risks, returns, and creditworthiness of potential borrowers. This transparency is essential in fostering a sense of trust and confidence in the P2P lending ecosystem.
3. **Mitigating Systemic Risks:** Another key point of debate revolves around the mitigation of systemic risks within the P2P lending sector. Regulatory measures play a crucial role in addressing the potential contagion effects of widespread platform failures or default clusters. By implementing prudential norms and risk management guidelines, regulators aim to minimize the systemic impact of adverse events on the broader financial system.
4. **Empowering Investor Education:** The discourse also emphasizes the importance of investor education and awareness in navigating the nuances of P2P lending. Regulatory initiatives can focus on enhancing financial literacy and empowering investors with the knowledge and tools to make informed investment decisions. This proactive approach aligns with the broader goal of promoting a culture of responsible and informed investing within the P2P lending landscape.
5. **Path to Regulatory Clarity:** Ultimately, the debate on regulation and investor protection in P2P lending underscores the need for regulatory clarity and coherence. A well-defined regulatory framework can provide a stable and predictable environment for industry participants, investors, and borrowers. Clarity in regulations fosters market confidence and encourages responsible innovation while ensuring adequate safeguards for investor protection.

In conclusion, the ongoing debate on regulation and investor protection in P2P lending reflects the evolving dynamics of the financial industry in India.

By addressing the nuances of regulatory frameworks and investor safeguards, stakeholders can work towards establishing a resilient and inclusive P2P lending ecosystem that balances innovation with investor protection.

Methodology of the P2P Lending Study

To comprehensively analyze the landscape of P2P lending in India, a mixed-methods approach was employed, integrating both qualitative and quantitative research techniques. The study began with an extensive review of existing literature, encompassing academic journals, industry reports, and regulatory frameworks. This approach facilitated a comprehensive understanding of the historical evolution, benefits, and challenges of P2P lending, thereby laying a robust foundation for the subsequent research endeavours.

An essential component of the methodology lay in the incorporation of case studies, wherein specific P2P lending platforms were examined in depth to elucidate their operational frameworks, risk assessment methodologies, and the efficacy of financial inclusion measures. These case studies offered nuanced insights into the practical implementation of risk mitigation strategies and their implications for borrower accessibility and inclusion.

1. Findings on the Impact of P2P Lending in India

As the discourse on P2P lending unfolds, it is crucial to delve into the socioeconomic implications of its operation. The literature review has touched upon the notion of financial inclusion, shedding light on its potential to empower individuals and bolster economic participation. However, a more in-depth examination is imperative to understand the holistic impact on underserved or marginalized demographics and their journey towards financial stability.

2. Uncovering the Ripple Effect of Financial Inclusion

Beyond the immediate benefits of access to credit, an in-depth exploration of the literature reveals the ripple effect of financial inclusion facilitated by P2P lending. By providing opportunities for individuals and small businesses to secure financing, P2P lending has the potential to stimulate entrepreneurship, foster job creation, and drive economic growth within communities that have historically faced barriers to traditional financial services.

Moreover, the socioeconomic impact extends to promoting consumer spending, enhancing education and skill development, and enabling individuals to overcome financial hardships, thereby contributing to overall societal well-being. Through this lens, P2P lending emerges as not just a financial facilitator but as a catalyst for broader socioeconomic transformation.

3. Ethical Imperatives and Technological Advancements

While the literature has touched upon the ethical considerations and algorithmic biases in borrower screening, a more thorough analysis is essential to unravel the ethical imperatives associated with technological advancements in P2P lending. Delving deeper into the ethical dimensions of data privacy, algorithmic transparency, and the ethical use of borrower information can illuminate the path towards a more equitable and responsible technological integration within P2P lending platforms.

By embracing a nuanced approach, industry stakeholders can navigate the intersection of technology, ethics, and financial inclusion to cultivate an environment where innovation is harmonized with responsible and transparent practices.

4. The Imperative for Inclusive Risk Mitigation

Building upon the discussion of redefining risk mitigation strategies, an enriched examination can shed light on the imperative for inclusive risk mitigation frameworks. Inclusive risk mitigation extends beyond creditworthiness assessment to encompass tailored financial counseling, support mechanisms, and proactive measures to empower borrowers in managing their financial obligations effectively.

Furthermore, exploring the collaborative efforts between P2P lending platforms, policymakers, and community organizations to develop inclusive risk mitigation strategies can offer a comprehensive understanding of how the industry can proactively address the financial needs of diverse borrower segments.

In conclusion, a comprehensive analysis of the socioeconomic impact, ethical imperatives, and inclusive risk mitigation within P2P lending sets the stage for a more holistic and informed approach towards advancing the resilience and inclusivity of P2P lending in the evolving landscape of India's financial ecosystem.

Discussion on Balancing Accessibility and Risk in P2P Lending

1. Exploring the Impact of P2P Lending on Financial Inclusion and Risk Mitigation

The evolution of the P2P lending landscape in India necessitates a holistic approach to understanding its impact on financial inclusion and risk mitigation. As the literature review has indicated, while the benefits of P2P lending in providing access to credit for underserved borrowers and diversification opportunities for investors are noteworthy, there are underlying complexities and ethical considerations that warrant a more nuanced examination.

2. Uncovering the Impact on Financial Inclusion

Delving deeper into the impact of P2P lending on financial inclusion reveals its potential to bridge the gap for individuals with limited credit history or those marginalized by traditional banking institutions. The utilization of alternative risk evaluation models and non-traditional data points can play a pivotal role in enabling these individuals to access financing, thereby fostering economic participation and empowerment.

Moreover, the literature suggests that tailored financial counseling and support mechanisms can further enhance the responsible borrowing and repayment behavior of individuals engaged in P2P lending, thereby contributing to a more inclusive financial ecosystem.

3. Balancing Risk and Accessibility

In the quest for inclusivity, it becomes imperative to strike a balance between risk mitigation and accessibility in P2P lending. While robust borrower screening and credit assessment are fundamental for investor protection, regulators and industry participants need to navigate the ethical considerations surrounding data privacy, algorithmic biases, and the responsible use of borrower information.

Redefining risk mitigation strategies to incorporate a broader range of non-traditional data points while upholding ethical principles is crucial for ensuring that creditworthy individuals are not unduly marginalized from accessing P2P lending as a source of financing.

4. Methodological Approach for Comprehensive Understanding

The methodology of the P2P lending study should embrace a multi-faceted approach that encompasses quantitative analysis of borrower and investor behaviors, qualitative assessments of the impact on financial inclusion, and in-depth examinations of the evolving regulatory landscape.

Furthermore, conducting a comparative analysis of P2P lending practices in other jurisdictions can offer valuable insights into best practices and potential pitfalls, thereby enriching the understanding of the industry's dynamics and informing future regulatory frameworks.

In conclusion, the literature review has illuminated the potential and challenges of P2P lending, emphasizing the need for a thorough exploration of its impact on financial inclusion and risk mitigation. By incorporating a more comprehensive methodological approach, the study can contribute to a nuanced understanding of P2P lending's role in shaping the financial landscape of India and pave the way for informed policy decisions and industry practices.

Creditworthiness and Borrower Screening in P2P Lending

One of the fundamental pillars of a robust and sustainable P2P lending ecosystem is the emphasis on creditworthiness and borrower screening. In essence, the meticulous assessment of the creditworthiness of borrowers and the implementation of rigorous screening processes are indispensable in fostering trust, ensuring loan repayment, and mitigating the associated risks within the P2P lending landscape.

1. Importance of Creditworthiness Assessment: The evaluation of creditworthiness serves as a linchpin in the lending process, determining the ability and willingness of borrowers to honor their financial obligations. P2P lending platforms can leverage comprehensive credit assessment tools and credit scoring models to gauge the risk profile of potential borrowers accurately. By delving into the borrowers' financial history, income stability, debt-to-income ratio, and credit behavior, platforms can make informed decisions regarding loan approvals, interest rates, and loan terms, thereby mitigating the inherent credit risks.
2. Enhancing Risk Mitigation through Borrower Screening: Furthermore, the implementation of robust borrower screening mechanisms contributes significantly to risk mitigation within the P2P lending sphere. Effective screening processes encompass thorough identity verification, income verification, employment validation, and assessments of debt servicing capabilities. These measures not only bolster the reliability of borrower information but also assist in identifying and averting potential fraudulent activities, enhancing the overall risk management framework of P2P lending platforms.

3. **Leveraging Technology for Enhanced Screening:** In the era of digital innovation, P2P lending platforms can harness advanced technological solutions such as artificial intelligence, machine learning algorithms, and big data analytics to fortify their borrower screening processes. These cutting-edge tools facilitate the analysis of a myriad of data points, enabling platforms to make accurate risk assessments and identify red flags that traditional screening methods might overlook. The integration of technology augments the efficacy of borrower screening while upholding the imperative of data privacy and security.
4. **Fostering Transparency and Due Diligence:** Transparency and due diligence are integral facets of borrower screening, epitomizing the commitment of P2P lending platforms to maintaining ethical and responsible lending practices. Platforms must uphold transparency by disclosing the evaluation parameters, risk assessment methodologies, and the criteria for loan approval to both borrowers and investors. This transparency fosters confidence and trust in the lending process, positioning P2P lending as a credible and trustworthy avenue for financial transactions.
5. **Embracing Ethical Lending Practices:** In conclusion, the emphasis on creditworthiness assessment and borrower screening underscores the pivotal role of ethical lending practices in fortifying the resilience of P2P lending in India. By integrating comprehensive credit evaluation, stringent borrower screening, technological advancements, and transparent due diligence, the industry can reinforce its risk management framework, thereby contributing to the overall sustainability and growth of the P2P lending sector.

While it is crucial to acknowledge the significance of creditworthiness assessment and borrower screening in P2P lending, there are opposing views that challenge the efficacy and impact of these practices.

Potential Limitations of Creditworthiness Assessment

Critics argue that the overreliance on credit scoring models and historical financial data may overlook the potential for behavioral or situational changes that could affect a borrower's ability to repay a loan. In dynamic economic environments, unforeseen circumstances such as job loss, medical emergencies, or changes in market conditions could significantly alter the creditworthiness of a borrower, rendering traditional credit assessments insufficient in capturing real-time risk factors.

1. **Accessibility and Inclusivity Concerns:** Moreover, stringent credit evaluation criteria and rigorous borrower screening processes may inadvertently exclude a significant portion of potential borrowers, particularly those from underserved or marginalized demographics. This exclusionary effect could perpetuate financial inequality and limit access to credit for individuals who may not fit conventional credit scoring parameters but have the capacity to fulfill their financial obligations.
2. **Balancing Risk Mitigation and Financial Inclusion:** The emphasis on robust borrower screening and credit assessment should be carefully balanced with the objective of fostering financial inclusion. While risk mitigation is imperative for investor protection and sustainability, regulators and industry participants must also consider mechanisms to ensure that creditworthy individuals, including those with limited credit history, are not unduly marginalized from accessing P2P lending as a source of financing.
3. **Ethical Considerations and Data Privacy:** Another aspect of concern pertains to the ethical use of technology in borrower screening. As P2P lending platforms leverage advanced technological tools for risk assessment, questions arise about the ethical implications of data privacy, potential biases in algorithmic decision-making, and the responsible use of borrower information. Striking a balance between leveraging technology for enhanced screening and upholding ethical principles of data privacy and fairness poses a significant challenge for industry stakeholders.
4. **Redefining Risk Mitigation Strategies:** In the pursuit of a more inclusive and responsible P2P lending landscape, there is a call for reevaluating risk mitigation strategies beyond traditional creditworthiness assessment. This includes exploring alternative risk evaluation models that incorporate a broader range of non-traditional data points to assess a borrower's financial capabilities, alongside tailored financial counseling and support mechanisms to promote responsible borrowing and repayment behavior.

In conclusion, while creditworthiness assessment and borrower screening are undeniably crucial components of P2P lending, it is imperative to engage in a balanced discourse that addresses the potential limitations, accessibility concerns, ethical considerations, and the need for inclusive risk mitigation strategies within the evolving landscape of P2P lending in India.

CONCLUSION

Beyond the surface-level advantages and critiques, it is imperative to delve deeper into the intricacies of P2P lending to truly grasp its complexities and challenges. While the existing literature emphasizes the potential

benefits for borrowers and investors, it also highlights the underlying complexities that necessitate in-depth understanding and strategic attention.

1. Credit Risk Management and Regulatory Landscape

Scholarly works notably spotlight the pressing importance of effective credit risk management and regulatory oversight within the P2P lending domain. The discourse encompasses concerns about default rates, credit evaluation methodologies, and the need for robust risk management frameworks to safeguard the interests of investors and borrowers alike. Moreover, the evolving regulatory landscape surrounding P2P lending demands continuous scrutiny and adaptation to ensure the stability and integrity of the industry.

2. Ethical Utilization of Technology and Data Privacy

On the ethical front, the literature accentuates the ethical utilization of technology and the challenges associated with maintaining data privacy in the context of borrower screening and risk assessment. It calls for a nuanced examination of data privacy norms, algorithmic biases, and the responsible handling of borrower information to mitigate potential ethical quandaries and uphold the principles of fairness and transparency.

3. Socio-Economic Impact and Empowerment

In addition to financial considerations, the literature calls for a contemplation of the broader socio-economic impact and empowerment brought forth by P2P lending. It underscores the potential of P2P lending to fuel economic participation, drive socio-economic progress, and foster a more equitable financial landscape for underserved individuals and small businesses.

Future Prospects and Inclusive Strategies

The discussions put forth in the academic literature emphasize the need for inclusive risk mitigation strategies, redefined credit assessment models, and tailored financial support systems to address the challenges and complexities ingrained within the P2P lending ecosystem. By prospectively addressing these complexities and embracing a holistic approach to risk, inclusion, and ethical considerations, industry participants and regulators can pave the way for a more robust, inclusive, and ethically sound P2P lending landscape.

In conclusion, the complexities and challenges surrounding P2P lending identified in the literature necessitate a multidimensional approach that encompasses prudent risk management, adherence to ethical norms, and the promotion of socio-economic empowerment. This nuanced understanding will be pivotal in shaping the future trajectory of P2P lending in India and beyond.

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**NAVIGATING THE FUTURE: SMART SOLUTIONS FOR COMPETITIVE BUSINESS
ADVANTAGE**

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ABSTRACT

In today's rapidly evolving business landscape, gaining a competitive edge is essential for sustained success. This research paper delves into the strategic implementation of smart solutions to navigate the future and secure a sustainable competitive advantage, elucidates the significance of predictive analytics in forecasting demand, optimizing resource allocation, and minimizing risks within organizational contexts and explores the impact of data-driven decision-making on organizational performance and competitive positioning, focusing on the role of AI and ML in improving accuracy, speed, and insight generation and predictive analysis. Additionally, the paper addresses applications of smart solution in business operation and investment on the adoption of smart solutions, some case studies along with the impact on associated company business operation this paper also highlights the crucial aspect of ensuring security and compliance in the adoption of smart technologies, offering strategies for risk management and regulatory adherence. their transformative potential in various industries.

Keywords: Smart Solutions, Artificial Intelligence, Machine Learning, Competitive business advantages, Internet of things, Application security, Information Security

1.0 INTRODUCTION

In today's dynamic business environment, gaining a competitive advantage is crucial for long-term success. With the rapid advancement of technology, businesses are presented with unprecedented opportunities to innovate and differentiate themselves from the competition. This article explores how smart solutions can be strategically implemented to navigate the future and achieve a sustainable competitive advantage.

Smart solutions refer to innovative approaches, systems, or technologies that integrate advanced digital capabilities such as artificial intelligence, Internet of Things (IoT), data analytics, and automation to address complex problems or challenges in various domains such as business, urban development, healthcare, and environment. These solutions are characterized by their ability to collect, analyze, and act upon large volumes of data in real-time, enabling better decision-making, optimization of processes, and the provision of intelligent services or products. Smart solutions are designed to enhance efficiency, sustainability, safety, and quality of life, offering transformative benefits to individuals, organizations, and societies.

Smart solutions embedded with AI/ML, IoT technology and data analytics hold significant importance in modern business for several reasons[1]:

- **Enhanced Efficiency:** Smart solutions automate repetitive tasks, optimize processes, and minimize manual intervention, leading to increased efficiency and productivity.
- **Improved Decision-Making:** By leveraging data analytics and artificial intelligence, smart solutions provide valuable insights and predictive capabilities, enabling informed and data-driven decision-making.
- **Competitive Advantage:** Businesses that adopt smart solutions gain a competitive edge by offering innovative products and services, optimizing operations, and delivering superior customer experiences.
- **Cost Reduction:** Smart solutions help in reducing operational costs through resource optimization, waste reduction, energy efficiency, and streamlined processes.
- **Agility and Adaptability:** Smart solutions enable businesses to respond quickly to changing market conditions, customer demands, and emerging trends, enhancing their agility and adaptability in dynamic environments.
- **Customer Satisfaction:** Smart solutions enable personalized experiences, proactive customer service, and efficient problem resolution, leading to higher levels of customer satisfaction and loyalty.

- **Sustainability:** Smart solutions contribute to sustainability efforts by optimizing resource usage, reducing environmental impact, and promoting eco-friendly practices, aligning businesses with environmental and social responsibility goals.

Smart solutions play a vital role in driving innovation, competitiveness, efficiency, and sustainability in modern businesses, enabling them to thrive in an increasingly digital and interconnected world.

1.1 Key technologies behind the smart solutions

The most prominent technologies driving smart solutions across various domains are[2]:

- **Internet of Things (IoT):** IoT enables the interconnection of physical devices and objects, allowing them to collect, exchange, and analyze data. This technology forms the foundation of many smart solutions by providing real-time monitoring, control, and automation capabilities.
- **Artificial Intelligence (AI) and Machine Learning (ML)[3]:** AI and ML algorithms analyze large datasets to derive insights, make predictions, and automate decision-making processes. These technologies power smart solutions in areas such as predictive maintenance, personalized recommendations, and autonomous systems.
- **Data Analytics:** Data analytics involves the use of statistical techniques and algorithms to analyze and interpret large volumes of data. By extracting valuable insights from diverse data sources, businesses can optimize processes, improve efficiency, and make informed decisions.
- **Cloud Computing:** Cloud computing offers convenient access to computing resources, storage, and services via the internet on demand. This technology enables flexible and scalable deployment of intelligent solutions, facilitating the storage, processing, and accessibility of data from any location and at any time.
- **Edge Computing:** Edge computing brings processing and data storage closer to the source of data generation, reducing latency and enabling real-time decision-making. This technology is crucial for applications requiring fast response times, such as autonomous vehicles and industrial automation.
- **Blockchain:** Blockchain technology offers secure and transparent decentralized ledgers for recording transactions and maintaining data integrity. It is used in smart solutions for enhancing trust, traceability, and security in various domains, including supply chain management and financial transactions.
- **5G Connectivity:** 5G networks provide high-speed, low-latency connectivity, enabling seamless communication between devices and supporting bandwidth-intensive applications. This technology is instrumental in enabling the widespread adoption of IoT, autonomous vehicles, and immersive experiences.

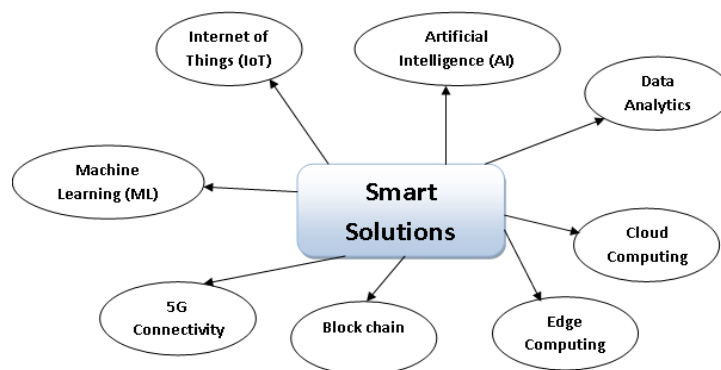


Figure -1 Key technology behind the smart solutions

These key technologies collectively drive the development and deployment of smart solutions across industries, revolutionizing business processes, enhancing efficiency, and enabling innovative services and experiences.

Adoption of Smart Solutions in Different Sectors:

The adoption of smart solutions has brought transformative benefits to various industries and businesses. Some examples include[3]:

- **Manufacturing:** Smart solutions such as IoT-enabled sensors, predictive maintenance algorithms, and digital twins optimize production processes, reduce downtime, and improve product quality in manufacturing plants. Companies like Siemens and General Electric have implemented smart manufacturing systems to enhance efficiency and competitiveness.

- **Healthcare:** Healthcare providers leverage smart solutions such as telemedicine platforms, wearable health monitors, and AI-based diagnostics to improve patient care, increase accessibility, and reduce costs. Companies like Philips and IBM Watson Health offer innovative solutions for remote patient monitoring, disease management, and personalized treatment.
- **Transportation and Logistics:** Smart solutions like GPS tracking systems, route optimization algorithms, and autonomous vehicles streamline transportation and logistics operations, reducing fuel consumption, minimizing delays, and enhancing safety. Companies like UPS and DHL utilize smart technologies to optimize delivery routes, manage fleets, and track shipments in real-time.
- **Retail:** Retailers utilize smart solutions such as RFID tags, customer analytics platforms, and personalized marketing algorithms to enhance the shopping experience, optimize inventory management, and increase sales. Companies like Amazon and Walmart leverage AI-driven recommendation engines and smart logistics systems to offer personalized recommendations and efficient delivery services.
- **Energy and Utilities:** Smart solutions such as smart meters, energy management systems, and grid optimization algorithms improve energy efficiency, reduce waste, and promote renewable energy integration in the energy and utilities sector. Companies like Siemens and Schneider Electric provide smart grid solutions for optimizing energy distribution and consumption.
- **Agriculture:** Smart solutions like precision farming technologies, IoT-enabled sensors, and AI-driven crop monitoring systems optimize agricultural practices, increase crop yields, and minimize resource usage in the agriculture industry. Companies like John Deere and Trimble offer precision agriculture solutions for farmers to improve crop management and decision-making.
- **Smart Cities:** Municipalities implement smart solutions such as IoT-based infrastructure monitoring, intelligent traffic management systems, and smart energy grids to enhance urban sustainability, improve public services, and enhance quality of life for residents. Cities like Singapore and Barcelona are leading examples of smart city initiatives that leverage technology to address urban challenges and improve citizen well-being.
- **Smart Homes /Connected Homes :** Transform your home into a seamless, efficient, and secure living space by integrating a comprehensive array of smart solutions. From smart security systems featuring cameras, motion sensors, and locks to energy-saving smart thermostats and lighting, each aspect of your home is optimized for convenience and sustainability. Voice-controlled assistants like Amazon Alexa or Google Assistant enable effortless device management, while smart appliances and energy monitoring systems empower you to make informed decisions about energy consumption. Water leak detectors, automated window treatments, and a central smart home hub ensure comprehensive control and protection, while stringent cybersecurity measures safeguard your data and privacy. With this holistic approach, your smart home becomes a harmonious ecosystem that enhances your lifestyle while minimizing costs and environmental impact.

These sectors are widely using smart solutions for the purpose of increased efficiency, improved decision-making, enhanced customer experiences, and sustainable development.

1.2 The Role of Smart Solutions in Predictive Analytics for Better Business Decision:

Predictive analytics plays a crucial role in enhancing operational efficiency by providing organizations with the ability to forecast demand, optimize resource allocation, and minimize risks. Here's how predictive analytics contributes to each of these areas [3]:

- **Forecasting Demand:** Predictive analytics utilizes historical data, statistical models, and machine learning algorithms to forecast future demand for products or services. By analyzing factors such as sales trends, seasonality, customer behavior, and external market conditions, organizations can predict future demand with a high degree of accuracy. This enables organizations to anticipate fluctuations in demand, plan production schedules, and optimize inventory levels to meet customer needs effectively. By accurately forecasting demand, organizations can minimize stock outs, reduce excess inventory, and improve customer satisfaction.
- **Optimizing Resource Allocation:** Predictive analytics enables organizations to optimize resource allocation by identifying areas of inefficiency and allocating resources more effectively. By analyzing operational data, such as production output, equipment utilization, and workforce productivity, organizations can identify bottlenecks, streamline processes, and allocate resources where they are needed most. Predictive analytics

also helps organizations optimize staffing levels, maintenance schedules, and supply chain logistics to minimize costs and maximize efficiency. By optimizing resource allocation, organizations can improve productivity, reduce waste, and enhance overall operational performance.

- **Minimizing Risks:** Predictive analytics helps organizations minimize risks by identifying potential threats and mitigating them before they occur. By analyzing historical data, market trends, and external factors, organizations can predict potential risks such as supply chain disruptions, market fluctuations, and financial losses. Predictive analytics also enables organizations to identify patterns and anomalies that may indicate fraudulent activity, cybersecurity threats, or compliance issues. By proactively identifying and addressing risks, organizations can minimize losses, protect their reputation, and ensure business continuity.

The predictive analytics plays a critical role in enhancing operational efficiency by enabling organizations to forecast demand, optimize resource allocation, and minimize risks. By leveraging predictive analytics, organizations can make more informed decisions, improve productivity, reduce costs, and maintain a competitive advantage in today's dynamic business environment.

2. Smart solutions empowering decision making using AI & ML :

Artificial Intelligence (AI) and Machine Learning (ML) are transformative technologies that enable computers to perform tasks that typically require human intelligence. AI focuses on creating systems capable of simulating human-like thinking, reasoning, and decision-making processes, while ML is a subset of AI that teaches computers to learn from data and improve their performance over time without explicit programming. ML algorithms analyze large datasets to identify patterns, trends, and insights, enabling them to make predictions, classifications, and recommendations. These technologies have diverse applications across various industries, including healthcare, finance, transportation, and more, revolutionizing processes, improving efficiency, and driving innovation.

In today's data-driven world, organizations are increasingly turning to artificial intelligence (AI) and machine learning (ML) algorithms to extract valuable insights from massive datasets. By harnessing the power of AI and ML, businesses can uncover patterns, trends, and correlations that were previously hidden, enabling them to make more informed and strategic decisions across various domains. From healthcare to finance to retail, here are a few examples illustrating how AI and ML are empowering decision-making by deriving actionable insights from vast amounts of data.

- **Healthcare Diagnostics:** In the field of healthcare, AI and ML algorithms are revolutionizing diagnostics by analyzing medical images, patient records, and genetic data to assist healthcare professionals in making accurate and timely diagnoses. For instance, companies like Enlitic and DeepMind are developing AI-powered diagnostic tools that can detect diseases such as cancer, diabetes, and cardiovascular conditions from medical imaging scans with high accuracy. By leveraging AI and ML for healthcare diagnostics, clinicians can expedite diagnosis, improve treatment planning, and enhance patient outcomes.
- **Financial Forecasting:** In the finance industry, AI and ML algorithms are being used to analyze market data, economic indicators, and historical trends to forecast stock prices, identify investment opportunities, and manage risk. Hedge funds and investment banks employ sophisticated ML models to predict market movements and optimize trading strategies in real-time. For example, companies like Two Sigma and Renaissance Technologies leverage AI-driven algorithms to analyze vast amounts of financial data and generate alpha for their investment portfolios. By leveraging AI and ML for financial forecasting, investors can make more informed decisions, mitigate risk, and achieve superior returns.
- **Retail Personalization:** In the retail sector, AI and ML algorithms are transforming customer experiences by analyzing transaction data, browsing behavior, and demographic information to personalize product recommendations, promotions, and marketing campaigns. E-commerce giants like Amazon and Alibaba use advanced recommendation engines powered by ML to suggest relevant products to customers based on their past purchases and preferences. By leveraging AI and ML for retail personalization, businesses can enhance customer engagement, increase sales conversion rates, and foster brand loyalty.

AI and ML technologies are empowering decision-making by enabling organizations to derive actionable insights from vast amounts of data across various industries. By harnessing the predictive and analytical capabilities of AI and ML algorithms, businesses can gain a competitive edge, drive innovation, and achieve strategic objectives in today's data-driven economy.

2.1 Organizations using Data Driven Smart Solution using AI and ML:

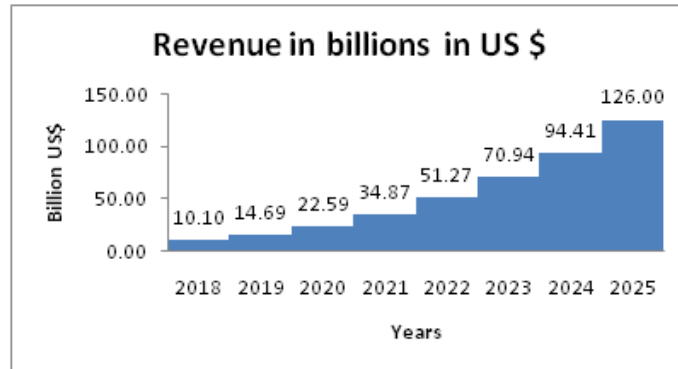
Organizations use smart analytics platforms for market analysis, competitor intelligence, and strategic decision-making to gain insights, drive innovation, and maintain a competitive advantage in today's dynamic business environment.

Some dominating organizations who uses smart analytics platforms for market analysis, competitor intelligence, and strategic decision-making:

- **Netflix:** Netflix employs sophisticated analytics platforms to analyze viewer data, content preferences, and engagement metrics to inform its content acquisition and production strategy. By leveraging advanced algorithms, Netflix can identify trends, predict viewer behavior, and recommend personalized content to subscribers. Additionally, Netflix utilizes competitor intelligence tools to monitor the performance of rival streaming services and adjust its offerings accordingly. This data-driven approach enables Netflix to make strategic decisions about content licensing, original programming investments, and pricing strategies, ultimately driving subscriber growth and revenue. Netflix has achieved significant cost savings of \$1 billion through the implementation of machine learning algorithms [4].
- **Procter & Gamble (P&G):** P&G, a multinational consumer goods company, utilizes smart analytics platforms to analyze consumer trends, market dynamics, and competitor activities to inform its product development and marketing strategies. P&G's analytics platforms incorporate data from various sources, including sales data, consumer surveys, and social media analytics, to identify emerging trends, anticipate consumer demand, and optimize product portfolios. By leveraging predictive analytics and machine learning algorithms, P&G can forecast market demand, optimize pricing and promotion strategies, and allocate resources effectively. This data-driven approach enables P&G to maintain its competitive edge in the fast-paced consumer goods industry and drive revenue growth. P&G is harnessing various cutting-edge technologies such as AI, big data, blockchain, cloud computing, IoT, and robotic process automation to modernize its operations and drive digital transformation. With an estimated annual investment of \$2.0 billion in ICT for 2022 [5], P&G is strategically leveraging these disruptive technologies to enhance efficiency, innovation, and competitiveness across its business processes and offerings.
- **Amazon:** Amazon utilizes smart analytics platforms to analyze customer data, purchase history, and browsing behavior to personalize product recommendations, optimize pricing strategies, and enhance the overall shopping experience. Amazon's analytics platforms leverage machine learning algorithms to segment customers into different cohorts based on their preferences and behavior, enabling targeted marketing campaigns and promotions. Additionally, Amazon uses competitor intelligence tools to monitor pricing trends, product assortments, and customer reviews across various e-commerce platforms. By leveraging data-driven insights, Amazon can make strategic decisions about inventory management, product launches, and customer engagement initiatives, driving sales and market share growth.
- **Uber:** Uber employs smart analytics platforms to analyze rider data, driver behavior, and traffic patterns to optimize its ride-sharing services. By leveraging real-time analytics, Uber can dynamically adjust pricing, allocate drivers more efficiently, and identify areas for service expansion, ultimately enhancing the overall customer experience and competitiveness in the market.
- **Coca-Cola:** Coca-Cola leverages smart analytics platforms to analyze sales data, consumer demographics, and market trends to optimize its beverage portfolio and marketing initiatives. By utilizing data-driven insights, Coca-Cola can identify growth opportunities, target specific consumer segments, and allocate resources effectively, ultimately driving revenue growth and market share expansion.
- **American Airlines:** American Airlines employs smart analytics platforms to analyze customer booking patterns, flight schedules, and competitor pricing to optimize its route network and pricing strategies. By leveraging predictive analytics, American Airlines can anticipate demand fluctuations, adjust capacity accordingly, and maximize revenue across its global network of routes.
- **LinkedIn:** LinkedIn utilizes smart analytics platforms to analyze user engagement, job market trends, and competitor activities to optimize its talent acquisition solutions and professional networking platform. By leveraging data-driven insights, LinkedIn can provide recruiters with actionable intelligence, help job seekers identify relevant opportunities, and enhance the overall user experience on its platform.
- **Google:** Google utilizes smart analytics platforms to analyze search trends, user behavior, and advertising performance data to inform its product development, marketing strategies, and revenue optimization efforts.

- **McDonald's:** McDonald's leverages smart analytics platforms to analyze sales data, customer preferences, and competitor activities to inform its menu offerings, pricing strategies, and store locations.

These illustrate how organizations across various industries utilize smart analytics platforms for market analysis, competitor intelligence, and strategic decision-making to gain insights, optimize operations, and drive growth. The smart software solution integration with AI& ML market's world wide annual revenue (2018 to 2025) shown as below, which shows significant growth in upcoming years and recent data indicates that the global revenue generated from AI chip sales is projected to reach \$15.7 trillion by the year 2030. [6].



Graph of AI & ML enabled smart solution's worldwide revenue (2018 to 2025) [6]

2.3 The impact of Data driven smart solution using AI and ML on organizational performance and competitive positioning:

In today's data-driven business environment, organizations are increasingly leveraging data analytics and insights to make informed decisions that drive performance and enhance competitive positioning. Data-driven decision-making impacts organizational performance and competitive positioning to improve following factors as given below.

Data driven smart solution using AI and ML applications in business process improvement[7]:

- **Improved Accuracy and Precision:** Data-driven decision-making relies on accurate and precise insights derived from data analysis. By using data analytics tools and techniques, organizations can minimize guesswork and make decisions based on real-time, relevant data. This leads to more accurate predictions, better resource allocation, and ultimately, improved organizational performance.
- **Faster Decision-Making:** Data-driven decision-making enables organizations to make decisions quickly and efficiently. With access to real-time data and analytics platforms, decision-makers can analyze information rapidly and respond to market changes or competitive threats in a timely manner. This agility gives organizations a competitive edge by allowing them to adapt to changing circumstances faster than their competitors.
- **Identification of Opportunities and Risks:** Data analytics enables organizations to identify opportunities for growth and innovation, as well as potential risks and challenges. By analyzing market trends, customer behavior, and competitive intelligence, organizations can uncover new business opportunities, develop targeted strategies, and mitigate risks effectively. This proactive approach to decision-making helps organizations stay ahead of the competition and seize opportunities as they arise.
- **Enhanced Customer Insights and Personalization:** Data-driven decision-making allows organizations to gain deeper insights into customer preferences, behaviors, and needs. By analyzing customer data and feedback, organizations can tailor products, services, and marketing campaigns to meet individual customer needs and preferences. This personalized approach to decision-making not only improves customer satisfaction but also strengthens customer loyalty and competitive positioning in the market.
- **Optimized Operations and Resource Allocation:** Data analytics enables organizations to optimize their operations and allocate resources more effectively. By analyzing operational data, organizations can identify inefficiencies, streamline processes, and improve resource utilization. This leads to cost savings, increased efficiency, and improved overall performance, allowing organizations to maintain a competitive advantage in their industry.
- **Continuous Improvement and Innovation:** Data-driven decision-making fosters a culture of continuous improvement and innovation within organizations. By regularly analyzing performance metrics and

feedback, organizations can identify areas for improvement, experiment with new ideas, and drive innovation. This constant focus on innovation helps organizations stay ahead of the competition and maintain their competitive positioning in the market.

The data-driven decision-making has a significant impact on organizational performance and competitive positioning. By leveraging data analytics and insights, organizations can make more accurate, faster, and informed decisions that drive performance, identify opportunities, mitigate risks, and ultimately, maintain a competitive advantage in today's dynamic business environment.

2.4 Impact of Data driven smart solution using AI and ML Personalizing Customer Experiences :

Utilizing smart Customer Relationship Management (CRM) systems to deliver personalized interactions and enhance customer satisfaction. In today's competitive business landscape, delivering personalized experiences to customers is essential for building strong relationships, fostering loyalty, and driving business growth. Smart Customer Relationship Management (CRM) systems play a crucial role in enabling organizations to achieve this goal by leveraging data-driven insights and automation capabilities to tailor interactions to individual customer preferences and needs. Here's how organizations utilize smart CRM systems to deliver personalized experiences and enhance customer satisfaction:

- **360-Degree View of the Customer:** Smart CRM systems aggregate data from various sources, including customer interactions, purchase history, demographic information, and social media activity, to create a comprehensive profile of each customer. By centralizing customer data in a single platform, organizations gain a 360-degree view of the customer, allowing them to understand their preferences, behaviors, and needs more effectively.
- **Segmentation and Targeting:** Smart CRM systems use advanced segmentation techniques to categorize customers into different groups based on common characteristics or behaviors. By segmenting customers, organizations can target specific groups with personalized messages, offers, and recommendations that are tailored to their interests and preferences. This targeted approach increases the relevance of interactions and enhances the likelihood of engagement and conversion.
- **Personalized Communication:** Smart CRM systems enable organizations to deliver personalized communication to customers across various channels, including email, social media, and SMS. By leveraging data-driven insights, organizations can send personalized messages, product recommendations, and promotional offers that resonate with individual customers, driving engagement and loyalty. Personalized communication also fosters a deeper emotional connection with customers, enhancing their overall satisfaction and loyalty.
- **Predictive Analytics and Recommendations:** Smart CRM systems leverage predictive analytics and machine learning algorithms to anticipate customer needs and preferences based on historical data and behavior patterns. By analyzing past interactions and purchase history, organizations can generate personalized product recommendations, content suggestions, and cross-selling opportunities that align with each customer's interests and preferences. This proactive approach to recommendation ensures that customers receive relevant and timely offers, enhancing their satisfaction and loyalty.
- **Efficient Customer Service:** Smart CRM systems streamline the customer service process by providing agents with access to relevant customer data and insights in real-time. By equipping agents with comprehensive customer profiles and historical interaction data, organizations can deliver more personalized and efficient service, resolving issues quickly and effectively. This personalized approach to customer service enhances the overall customer experience and contributes to higher levels of satisfaction and loyalty.

The utilization of smart CRM systems enables organizations to deliver personalized interactions and enhance customer satisfaction by leveraging data-driven insights, segmentation, targeted communication, predictive analytics, and efficient customer service. By tailoring interactions to individual preferences and needs, organizations can build stronger relationships with customers, foster loyalty, and drive long-term business success.

3. Implementation of smart solutions using AI and ML for effective data analysis in different fields

The effectiveness of data analytics in understanding customer preferences and behavior for targeted marketing and product/service customization. Some case studies based on applications of smart solution in industry for taking compative advantages as discussed below.

Case Study-1: Netflix: Leveraging Data Analytics for Content Personalization

Overview: Netflix, a leading streaming service provider, utilizes data analytics extensively to understand customer preferences and behavior for targeted content recommendations and customization. With millions of subscribers worldwide, Netflix collects vast amounts of data on viewer interactions, including watch history, ratings, searches, and viewing habits.

Implementation: Netflix employs sophisticated data analytics algorithms and machine learning techniques to analyze this data and extract actionable insights into individual preferences and viewing patterns. By leveraging predictive analytics, Netflix can anticipate what content each subscriber is likely to enjoy and tailor its recommendations accordingly. The platform continuously learns from user interactions and feedback, refining its recommendations over time to provide increasingly accurate and personalized suggestions.

Results: The implementation of data analytics at Netflix has yielded significant benefits:

- **Enhanced User Experience:** By providing personalized content recommendations, Netflix improves user engagement and satisfaction, leading to longer viewing sessions and increased retention rates.
- **Improved Content Discovery:** Data analytics enables Netflix to surface niche content and hidden gems that align with individual tastes, expanding viewers' horizons and driving discovery of new content.
- **Increased Viewer Retention:** By delivering relevant content recommendations, Netflix reduces churn and increases subscriber loyalty, leading to higher lifetime value and revenue generation.
- **Optimized Content Investment:** By analyzing viewer preferences and viewing patterns, Netflix can make data-driven decisions about content acquisition, production, and licensing, maximizing the return on investment and ensuring a diverse and compelling content library.

Case Study-2: Tesla: Revolutionizing the Automotive Industry with Electric Vehicles and Autopilot Technology using AI and IoT

Overview: Tesla, an electric vehicle (EV) and clean energy company founded by Elon Musk, has revolutionized the automotive industry through innovative smart solutions. Tesla's products combine advanced electric propulsion technology with cutting-edge autonomous driving capabilities to create sustainable transportation solutions for the future.

Innovation Highlights:

- **Electric Vehicles (EVs):** Tesla's EVs, including the Model S, Model 3, Model X, and Model Y, are powered by high-capacity lithium-ion batteries and electric motors, offering zero-emission driving and superior performance compared to traditional gasoline-powered vehicles.
- **Autopilot Technology:** Tesla's Autopilot system leverages a network of sensors, cameras, and advanced AI algorithms to enable semi-autonomous driving capabilities. Autopilot can assist with tasks such as lane-keeping, adaptive cruise control, automatic lane changes, and parking, enhancing safety and convenience for drivers.
- **Over-the-Air Updates:** Tesla's vehicles receive regular software updates over-the-air (OTA), allowing for continuous improvements and new features to be rolled out remotely. This innovative approach enables Tesla to enhance vehicle performance, add new functionalities, and address safety concerns without requiring customers to visit service centers.

Impact:

- **Market Disruption:** Tesla's innovative smart solutions have disrupted the automotive industry, challenging traditional automakers and accelerating the adoption of electric vehicles worldwide.
- **Customer Satisfaction:** Tesla's focus on smart technology and continuous improvement has earned it a loyal customer base, with high levels of customer satisfaction and brand loyalty.
- **Environmental Benefits:** By promoting sustainable transportation solutions, Tesla's smart solutions contribute to reducing greenhouse gas emissions and mitigating climate change.

Case Study-3: Amazon Go: Reinventing Retail with Automated Checkout and AI-Powered Shopping Experience

Overview: Amazon Go is a chain of convenience stores operated by Amazon that leverage smart solutions to offer a seamless and frictionless shopping experience. The stores feature advanced technologies such as

computer vision, sensor fusion, and machine learning to enable automated checkout and cashierless shopping[8].

Innovation Highlights:

- **Just Walk Out Technology:** Amazon Go stores are equipped with cameras, sensors, and deep learning algorithms that track customers as they shop and automatically detect when they take items off the shelves. Customers can simply pick up the items they want and leave the store without the need to scan or pay at a traditional checkout counter.
- **Amazon Go App:** Customers use the Amazon Go mobile app to enter the store by scanning a QR code. The app also provides a digital receipt of their purchases and automatically charges their Amazon account, eliminating the need for cash or credit cards.
- **Personalized Recommendations:** Amazon Go leverages customer data and purchase history to provide personalized recommendations and offers tailored to individual preferences, enhancing the shopping experience and driving customer engagement.

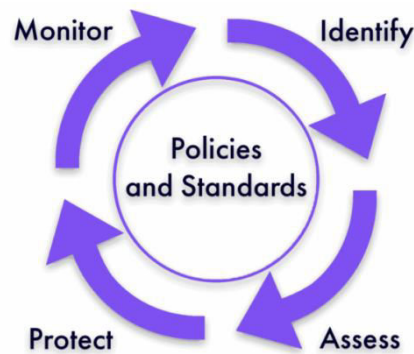
Impact:

- **Convenience and Efficiency:** Amazon Go's automated checkout and cashierless shopping experience offer unparalleled convenience and efficiency for customers, saving them time and eliminating the hassle of waiting in line.
- **Innovation in Retail:** Amazon Go's innovative smart solutions have reshaped the retail landscape, inspiring other retailers to explore similar technologies and reimagine the future of brick-and-mortar shopping.
- **Data-driven Insights:** Amazon Go collects valuable data on customer behavior and preferences, enabling the company to gain insights into shopping patterns, optimize store layouts, and personalize marketing strategies for enhanced customer engagement and satisfaction.

These case studies demonstrate how successful product and service innovations driven by smart solutions have transformed industries, disrupted traditional business models, and reshaped customer experiences. Through continuous innovation and the integration of smart technologies, organizations can unlock new opportunities, drive growth, and stay ahead in today's dynamic marketplace.

4. Ensuring Security and Compliance in Smart Solutions:

Information security is imperative in safeguarding data, systems, and networks from unauthorized access, disclosure, alteration, or destruction. In today's interconnected digital landscape, where vast amounts of sensitive information are exchanged daily, ensuring robust information security measures is essential to protect individuals, organizations, and nations against various threats such as cyberattacks, data breaches, espionage, and fraud. Effective information security not only preserves confidentiality, integrity, and availability of data but also fosters trust, reliability, and compliance with regulatory requirements, ultimately supporting the continuity and success of businesses, governments, and societies in the digital age. At every security team should maintain the information security lifecycle, incorporating policy and standards, encompasses key phases: Identify, Access, Protect, and Monitor (ISAPM)[9]. The Policy & Standard phase establishes overarching guidelines and regulations governing information security practices within an organization. In the Identify phase, risks are assessed, and assets are classified to determine their value and sensitivity. Access involves implementing policies and standards for authentication and authorization, ensuring only authorized users have access to critical systems and data. Protect focuses on deploying security controls, guided by policies and standards, such as encryption, firewalls, and secure coding practices, to mitigate identified risks and protect against threats. The Monitor phase involves continuous monitoring and auditing of security controls to ensure compliance with established policies and standards, detecting and responding to security incidents promptly. By integrating policy and standards throughout the ISAPM lifecycle, organizations establish a comprehensive framework for managing information security effectively and consistently.



Basic diagram of information security life cycle [9]

While addressing cybersecurity challenges associated with the adoption of smart technologies requires a versatile approach and architecture [10] that encompasses proactive measures, robust policies, and continuous monitoring. Here are some key strategies to mitigate cybersecurity challenges and compliance as discussed below [11]:

- **Risk Assessment and Management:** Conduct thorough risk assessments to identify potential vulnerabilities and threats associated with the adoption of smart technologies. Prioritize risks by assessing both their probability of occurrence and potential impact, then formulate mitigation strategies accordingly.
- **Secure Design and Development:** Implement security measures at every stage of the smart technology lifecycle, from design and development to deployment and maintenance. This includes adhering to secure coding practices, conducting security testing and reviews, and integrating security into the development process.
- **Data Protection and Privacy:** Ensure that sensitive data collected and processed by smart technologies is adequately protected against unauthorized access, theft, and misuse. Implement encryption, access controls, and data anonymization techniques to safeguard privacy and comply with relevant regulations such as GDPR or CCPA.
- **Network Security:** Strengthen the security of network infrastructure supporting smart technologies through measures such as firewalls, intrusion detection/prevention systems, and network segmentation. Regularly monitor network traffic for signs of suspicious activity and promptly respond to any security incidents
- **Authentication and Access Control:** Implement strong authentication mechanisms, such as multi-factor authentication (MFA), to verify the identities of users and devices accessing smart technologies. Enforce least privilege access policies to limit access to sensitive resources based on the principle of need-to-know.
- **Continuous Monitoring and Incident Response:** Deploy monitoring tools and establish processes for detecting and responding to security incidents in real-time. Develop incident response plans outlining roles, responsibilities, and procedures for investigating and mitigating security breaches promptly.
- **Compliance with Standards and Regulations:** Stay informed about relevant security standards and regulations applicable to smart technologies in information technology industry or jurisdiction. Ensure compliance with standards such as ISO 27001, NIST Cybersecurity Framework, or industry-specific regulations to demonstrate due diligence and mitigate legal and regulatory risks.
- **Employee Training and Awareness:** Educate employees about cybersecurity best practices and the risks associated with smart technologies. Provide regular training sessions on topics such as phishing awareness, secure password management, and recognizing social engineering tactics to promote a security-conscious culture within the organization.
- **Vendor Risk Management:** Assess the security posture of third-party vendors providing smart technologies or related services. Establish vendor risk management processes to evaluate the security practices of vendors, monitor their performance, and enforce contractual obligations regarding security and compliance.
- **Regular Security Audits and Reviews:** Conduct regular security audits and reviews of smart technology systems and infrastructure to identify weaknesses, assess compliance with security policies, and validate the effectiveness of security controls. Use findings from audits to drive continuous improvement and strengthen overall security posture.

By adopting these strategies and incorporating security into every aspect of the smart technology lifecycle, organizations can effectively mitigate cybersecurity challenges and ensure compliance with regulatory requirements. In nutshell, implementing robust data protection measures and ensuring compliance with regulations requires a comprehensive strategy that encompasses technical, organizational, and procedural aspects. Firstly, organizations should conduct thorough data inventory and classification to identify sensitive information and establish appropriate controls for its protection. Implementing encryption, access controls, and data loss prevention technologies can help safeguard data both in transit and at rest. Additionally, establishing clear policies and procedures for data handling, including data retention and disposal, is crucial. Regular employee training and awareness programs should be conducted to ensure adherence to data protection policies and to mitigate the risk of insider threats. Furthermore, organizations must stay abreast of relevant regulations such as GDPR, CCPA, or HIPAA, and ensure compliance through ongoing monitoring, audits, and risk assessments. Collaborating with legal experts and leveraging technology solutions for compliance management can also streamline the process and minimize regulatory risks. By adopting these strategies, organizations can strengthen their data protection posture and demonstrate a commitment to compliance with regulatory requirements.

5. CONCLUSION:

The smart solutions represent a pivotal driver of innovation, efficiency, and competitiveness across diverse industries in today's digital era. By harnessing advanced technologies such as IoT, AI, and data analytics, businesses can optimize operations, improve decision-making, and elevate customer experiences. The widespread adoption of smart solutions has resulted in tangible benefits including enhanced efficiency, reduced costs, increased agility, and sustainable development. Moving forward, continued investment and integration of smart solutions will be critical for businesses seeking to thrive in an increasingly interconnected and competitive global landscape. Embracing smart technologies not only positions organizations for success but also contributes to societal well-being by fostering sustainability and improved quality of life. Predictive analytics stands as a cornerstone in the quest for operational excellence, providing organizations with invaluable insights to drive efficiency and competitiveness. By accurately forecasting demand, optimizing resource allocation, and proactively managing risks, organizations can navigate the complexities of the modern business environment with confidence. As discussed in case study companies are utilizing of historical and operational data and advanced analytical techniques, predictive analytics empowers organizations to make informed decisions, streamline operations, and enhance overall performance. As businesses continue to embrace data-driven approaches, the role of predictive analytics will only become more pronounced, serving as a catalyst for innovation and strategic growth. Embracing predictive analytics is not merely a choice but a necessity for organizations seeking to thrive amidst uncertainty and change. However, alongside the opportunities presented by smart solutions, organizations must prioritize security and compliance to mitigate risks associated with data breaches and regulatory non-compliance. Implementing robust data protection measures, conducting regular risk assessments, and ensuring employee awareness are essential steps in safeguarding sensitive information and maintaining regulatory adherence. Ultimately, by embracing data-driven strategies and integrating smart technologies responsibly, organizations can unlock new opportunities, drive growth, and stay ahead of the curve in an increasingly digital world.

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EMPLOYER SUSTAINABILITY: AN SPECIAL FOCUS ON JOB SATISFACTION AND MOTIVATION FOR ORGANIZATION EFFECTIVENESS

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Assistant Professor (ITS, Mohan Nagar) Deputy Editor, IJRRMF, EZ Publication, Canada Reviewer, Redfame Publishing House, USA

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Motivation is the heart of teaching and learning process. Though the term motivation is not the very new term but its presence in the organization is always remains crucial to encourage people to maintain organization effectiveness. Teacher's job satisfaction and organization effectiveness is a relative term. This research paper aims to find out the positive relationship between job satisfaction and motivation for achieving organizational effectiveness. Significantly, Teachers job satisfaction and motivation are very crucial to the consistent growth of educational systems around the world. Several studies have revealed varying degrees of relationship between job satisfaction and motivation. This research paper focused on the positive relationship between the level of teachers' job satisfaction, motivation and their teaching performance in various fields of educational sector. The secondary method was used to collect data for this study. The paper studies the theory presented by the researchers on motivation in various academic fields. Finding has suggested that there is a positive relationship occurs between Teacher's motivation and job satisfaction.

Keywords: Motivation techniques, Higher education, Teachers, Motivated employees

INTRODUCTION

Every organization whether profit oriented or not has three types of resources that are Men, Money and Machinery. But the most important and the most significant is unquestionably the human resource of an organization. These are the human who convert the deficiency into efficiency and stimulate the process of organizational development. Teaching is one of the most important and noticeable profession in the world. All other professions of the society have their roots in the profession of teaching. Teachers are the pillars of educational system of any nation. They play an imperative role in building the personality of their students. Teachers are critical for the successful functioning of educational system and for improving the quality of educational institutions.

Motivation is derived from the Latin word "Movere" which means to move. Motivation is an inner drive to behave or act in a certain manner. "It's the difference between waking up before dawn to pound the pavement and lazing around the house all day." These inner conditions such as wishes, desires and goals, activate to move in a particular direction in behavior.

The relevance of job satisfaction and motivation are very crucial to the long-term growth of any educational system around the world. They probably rank alongside professional knowledge and skills, center competencies, educational resources and strategies as the veritable determinants of educational success and performance. Professional knowledge, skills and center competencies occur when one feels effective in one's behavior. In other words, professional knowledge, skills and competencies can be seen when one is taking on and mastering challenging tasks directed at educational success and performance (**Filak & Sheldon, 2003**).

LITERATURE REVIEW

This research paper focused on the positive aspects of job satisfaction and teachers motivation towards organizational effectiveness. It is very true to say that higher the job satisfaction always leads to high motivation among Teacher's and if Teacher's are fully motivated than it always leads to organizational effectiveness. Now, in this study we are focusing on the academicians' contribution towards the effectiveness of educational Institutes. Many researchers have done the study on this topic and proved the positive relationship between job satisfaction and ¹motivation and its impact on organizational effectiveness. Job satisfaction and motivation is

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directly related to each other for the purpose of organizational effectiveness. The term “job satisfaction” is commonly used by the academicians and the executives. Job satisfaction is an individual emotional reaction to the job itself. The relevance of job satisfaction and motivation are very crucial to the long-term growth of any educational system around the world. They probably rank alongside professional knowledge and skills, center competencies, educational resources and strategies as the variables determinants of educational success and performance. Professional knowledge, skills and center competencies occur when one feels effective in one’s behavior. Job satisfaction is the complex concept and difficult to measure objectively. In addition, needs satisfaction and motivation to work are very essential in the lives of teachers because they form the fundamental reason for working in life. While almost every teacher works in order to satisfy his or her needs in life, he or she constantly agitates for need satisfaction. Job satisfaction in this context is the ability of the teaching job to meet teachers’ needs and improve their job/teaching performance. However, it is assumed that teachers’ agitations and demands are beyond the resources of the Ministry of Education or the government.

The overall purpose of the study was to explore the relation between Teacher’s Job satisfaction and motivation for effectiveness of any educational Institute. To a large extent, this work is built on the theoretical frameworks of scholars like Herzberg and Maslow (1943, 1970). The research hypotheses and objectives of this research were made to order for the study of institutes teachers’ job satisfaction, with the view of ascertaining the degree to which intrinsic and extrinsic factors of motivation impact them in their work situation.

Employee job satisfaction and motivation can be studied through several broad approaches *vis-à-vis* content or need based theories, process theories and reinforcement theories. However, the term employee motivation is a complex and difficult term to define; therefore a precise definition of this concept is elusive as the notion comprises the characteristics of individual and situation as well as the perception of that situation by the individual (Ifinedo 2003; Rosenfeld & Wilson 1999).

An organization’s liveliness, whether public or private, comes from the motivation of its employees, although their abilities play just as crucial a role in determining their work performance their motivation (Lewis, Goodman & Fandt 1995).

From the above definitions some issues are brought to mind that deal with what starts and energizes human behavior, how those forces are directed and sustained as well as the outcomes they bring about (performance). It follows therefore that there is a relationship between motivation and job satisfaction, which is paramount in any organization’s existence. However, the concepts of motivation and job satisfaction among Teacher’s are often confused with one another.

Peretomode (1991) citing Gibson, *et al.* pointed out that the two terms are related but are not synonymous. They acknowledged that job satisfaction is one part of the motivational process. While motivation is primarily concerned with goal-directed behavior, job satisfaction refers to the fulfillment acquired by experiencing various job activities and rewards. It is possible that an employee may display low motivation from the organization’s perspective yet enjoy every aspect of the job.

Implication of Maslow’s & Herzberg theory of motivation on employees

These two theories play a very important role in the practical life of every employee to motivate him to a great extent which always leads to the organization effectiveness.

Maslow’s Need Hierarchy Theory

Abraham Maslow’s (1943, 1970) need-based theory of motivation is the most widely recognized theory of motivation and perhaps the most referenced of the content theories. According to this theory, a person has five fundamental needs: physiological, security, affiliation, esteem, and self-actualization.

According to Maslow, once a need dissatisfied it is no longer a need. It ceases to motivate employees’ behavior and they are motivated by the need at the next level up the hierarchy. These different needs of different levels of employees we can observe through close supervision and direct communication from immediate superior of concerned departments. However, in spite of Maslow’s effort and insights into the theories of motivation, replicate studies failed to offer strong support of the need-based theories. Also, studies aimed at validating Maslow’s theory failed to find substantiation in support of the needs hierarchy (Ifinedo 2003; Lawler & Suttle 1972), although many continue to find the hierarchy model very attractive (Naylor, 1999).

Herzberg et al.’s Motivation-Hygiene Theory

Herzberg started his theory with a distinction between motivation and maintenance factors in job situation. A research study conducted by the Herzberg was based on the interview of 200 engineers and accountants who

worked in eleven different firms in Pittsburgh area. Herzberg concluded that there were two sets of conditions. First type of conditions, described as maintenance/hygiene factors, does not motivate employees but their absence demotivates them. The other conditions, called motivational factors, operate to build strong motivation and high job satisfaction, but their absence hardly proves dissatisfying.

There is a direct link between these two above mentioned theories to prove this study regarding positive relationship between Teachers job satisfaction and motivation for leading towards a path of organizational effectiveness. Both the theories play a very vital role to prove this concerned study.

OBJECTIVES

The objectives of this paper are:

- To identify the positive relationship between Teacher's job satisfaction and motivation.
- To examine the impact of teachers job satisfaction towards organizational effectiveness.

DISCUSSION OF RESULTS AND CONCLUDING REMARKS

Few current studies related to motivation, pay and many rewards are mentioned here. Various researchers did their study on this particular topic and proved that there is a direct link between Teachers Job satisfaction and work motivation in the organization. This study has been proved with above given concepts and theories that if the employees are fully satisfied with the job than definitely it leads to high motivation but on the other side if the employees are not satisfied with the job than they do not feel comfortable in the organization for long time. So, this study focused on the positive relationship between job satisfaction and work motivation among the employees working in the educational institutes in India. This study explored the conflicting approaches to the theories of motivation. The research strategy and design were much in line with the need-based or content theories of motivation. The study supports the theory that the needs satisfaction or work-related needs of employees, regardless of national background, can be grouped according to need theories of motivation (**Ifinedo 2003, 2004**) The results of the analysis indicate that physiological needs, security needs, social needs, self-esteem needs and self actualization needs are significant predictors of the job performance of various academicians. Therefore, this study also supports **Danga (1996)** study of human engineering for higher productivity. It is also in accordance with **Roe's (1970)** need theory that explains that an occupation is a primary source of need satisfaction.

To prove this topic of research paper, also I took the secondary data of employees working in Nigerian Institute:

As per the Nigerian Institute Data, Nigerian teachers need adequate educational policies and administration in terms of reasonable payment and fringe benefits commensurate with the job they do for them to be able to satisfy their basic needs in life such as food, clothing, health-care, etc. When teachers' needs are satisfied, it promotes their psychological well-being and enables optimal functioning and performance (**Reis et al., 2000; Ryan, 1995**). On the contrary, when teacher's environment or personality style does not afford these kinds of experiences, they fail to thrive. Also, an individual is best off when his or her needs are satisfied, and worst off when they are not satisfied (**Filak & Sheldon, 2003**). Nigerian teachers' dissatisfaction with pay and fringe benefits, material rewards and advancement, as well as better working conditions was associated with the intention to leave the teaching profession (**cf., Ladebo, 2005**). Teachers feel that they are cheated, underpaid and made to work in insecure conditions where the Nigerian government pays less attention to teachers' dignity and self-esteem. Teachers are human beings with various needs to be satisfied, and failure to have such needs satisfied leads to frustration, nonchalant attitude towards work and rebellion (**Adams, 1963; Ulom & Joshua, 2004**).so there are different views of Teachers in various educational institutes some of them are satisfied and motivated on work place and some of them are not. But on the basis of my study it's very much clear that there are direct correlation between the Teachers job satisfaction and motivation which always leads to Educational Institutes Effectiveness.

Finally, through this study we have proved that there is a positive relationship between Academician's Job satisfaction & motivation for Institute Effectiveness.

RECOMMENDATIONS

Following recommendations were made for the improvement of the teaching-learning situation in the higher education institutions.

- Heads should show honest, fair, polite, kind hearted and punctual.

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- Heads should avoid practicing the factors like apprehend for teachers transfer, stiff in their dealings and forcefully expression of his opinions for better performance of the teachers.
 - The heads may be empowered to utilize sufficient funds for motivating teachers and students. A special training course may be arranged for educational managers, administrators and supervisors for achieving competency in motivation techniques.. A

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FOOD SECURITY CRISES IN INDIA AND ROLE OF LAW IN PREVENTION THESE: - A STUDY**Arun Kumar¹ and Neha Rani²**¹Assistant Professor, Law Department, Punjabi University Regional Centre, Bathinda²L.L.M., Research Scholar**ABSTRACT:**

India is home to an estimated 200 million malnourished people, suggesting widespread food insecurity. However, variations in the methods used for determining food insecurity status mean there is uncertainty in the data and severity of food insecurity across the country. This systematic review investigated the peer-reviewed literature examining food insecurity in India to identify both the breadth of research being conducted as well as the instruments used and the populations under study. Food happens to be on the basic need that a human body requires for its survival. Food Security is a multidimensional concept impacting various social-economic, developmental, human rights, global, and environmental experiences. Food security extends beyond production and availability of grains. India's one-third population was under absolute poverty and malnourishment was a major challenge of post-independence. India has witnessed a paradigm shift in its understanding of food security from large scale availability of grains through the green revolution to continuous availability of food in the households through the public distribution schemes (PDS) and Targeted PDS and also measuring the energy intake of the individuals and assessing their malnutrition. India has also advocated the 'right to food' campaign and a National Food Security Act, 2013 which was a right based approach to provide subsidized food. The Rome Declaration defined food security which included three interrelated ideas of availability, accessibility, and absorption. The availability of food is an essential element of human development, whose deprivation would turn the concept of development meaningless. Food happens to be the primary element for human security and economic development. This chapter critically explores measures taken by India to provide food security to its people.

Keywords: Right to Food, Food Security, Food Security Act, Food Crisis, Food Production

Structure: Food Security Crises in India and Role of Law in Prevention

INTRODUCTION

- Concept and evolution of food security
- Food Security Definition
- The Scope of the Food Crisis in India
- Food Security, the Right to Food, and Indian Issues
- Role of Law
- Interventions to protect food security and to relieve food crises
- Conclusion

INTRODUCTION

Food crises tend to occur when a range of factors, influenced both by nature and human action, interact over a period of time to push a region or society past the point at which it is able to cope with the impending situation. Whilst 'natural' factors can trigger a set of processes which may result in food crisis, it is only when considered alongside the social, political and economic situation in the affected region that we are able to understand why such a crisis took place at a particular time and with a particular set of effects. The effects of such a crisis are not fixed, but vary between regions and states, and in the impact which they have on different sections of the population. Such variations can in part be attributed to differences in the effectiveness of mechanisms and survival strategies which these actors implement in attempts to cope with their difficulties. Policies implemented by the state may also be crucial in explaining this variation. This article examines different aspects of food security. It outlines factors which may lead to food crises, and which may explain why a particular set of conditions may lead to a collapse of food security in one society, whilst another society may be able to cope with these conditions and is therefore able to avoid such a collapse. In addition it discusses strategies which people adopt to cope with periods of food insecurity and which reduce their vulnerability. Finally it examines interventions by external agencies, and the state in particular, to relieve distress and to preserve food security. It does this with particular attention to such interventions made by the state in India.

The term 'food security' generally implies a situation where members of the population under consideration have access to sufficient food to provide an adequate energy intake, and to meet other nutritional requirements. The quantities and types of food needed to meet this requirement will vary between people depending on their size, age, gender, level of activity, state of health and so forth. It will also vary seasonally and temporally, possibly increasing, for example, at times of year when work requirements are high, such as at harvest times.

The right to food is fundamental to living a dignified life. It is a person's fundamental human right. Food security is defined as a scenario in which all people have physical, social, and economic access to enough, safe, and nutritious food to meet their dietary needs and live an active and healthy life throughout their lives.¹ Food security entails not only physical availability and cost, but also that individuals do not suffer social barriers when it comes to feeding themselves.² Food security entails nutritional security, as well as the recognition that achieving it facilitates the development of individual capabilities. To achieve food security, all three distinct dimensions of availability, access, and use must be sufficient and constant throughout time.³ With the passage of time, the concept of food security has changed, developed, increased, and diversified. The Universal Declaration of Human Rights (UDHR) was the first to identify the right to food as part of the right to an adequate standard of living, which included the rights to food, clothes, and shelter. It was followed by the International Covenant on Economic, Social, and Political Rights, which emphasizes state parties' responsibility to maintain and develop policies for the nation's food security.

The Indian government has implemented a number of methods to ensure food security, including deliberate attempts to expand food grain production, involvement in grain markets, the establishment of a public distribution system, and the maintaining of reserves for major food grains. The National Food Security Act (NFSA) was enacted with the goal of ensuring economic and social access to adequate food and a dignified life for all citizens of the country at all times. Nonetheless, despite a number of measures and strategies, India's food and nutritional security issues persist. Climate change, a mismatch between water demand and availability, the development of new plant varieties of food crops for increased productivity, lower prices for agricultural products, and a lack of crop insurance policies are all issues for food security in India.

Concept and Evolution of Food Security:

The concept of food security has changed over the last few decades to reflect shifts in official policy thinking. However, it wasn't until the Rome World Food Conference in 1974 that this issue was first explicitly acknowledged as affecting all of humanity. It stated, "*In order to maintain and fully develop their physical and mental faculties, everyone has the inalienable right to be free from hunger and malnutrition.*" Therefore, the abolition of hunger is a common vision of all countries in the international community, especially developed countries and other countries in a position of assistance.

In 1983, Food and Agriculture Organisation (FAO) research focused on food accessibility, primarily on a definition based on the demand and supply sides of food security. The highly influential World Bank report on poverty and hunger in 1986 focused on the temporal dynamics of food insecurity. Sen's theory of famine supplemented this by highlighting the impact of personal rights on food access, i.e., production, labour, trade, and transfer-based resources. The widely accepted definition of food security from the World Food Summit (1996) reinforces the idea of its multidimensional nature by including food access, availability, use, and stability.

1.2 Food Security Definition:

"Food security occurs when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for active living and healthy life," According to the United Nations' Food and Agriculture Organization (FAO).

¹ Ana Ayala and Benjamin Mason Meier "A Human Rights Approach to the Health Implications of Food and Nutrition Insecurity" 38 Public Health Reviews (2017), available at : <https://publichealthreviews.biomedcentral.com/articles/10.1186/s40985-017-0056-5>.

² Aviral Pandey "Food Security in India and States: Key Challenges and Policy Option" MPRA Paper No 64237, available at: <https://mpra.ub.uni-muenchen.de/64237/>.

³ Sudha Narayanan "Food Security in India: The Imperative and its Challenges" 2 (1) 198 Asia and the Pacific Policy Studies (January 2015)

"Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices," the World Food Conference (1974) defined food security.

Food security, according to the World Bank, is defined as "access by all people at all times to enough food for an active, healthy life; its basic elements are food availability and ability to purchase it."

"Food security frequently refers to food availability and an individual access to food," According to the European Crop Protection Association. If a person does not suffer from hunger or fear of starving, they are regarded to be food secure. Food security can refer to the availability of sufficient nutrients to provide a healthy diet and avoid the health effects of malnutrition in addition to hunger and starvation."

Food security is defined by the United Nations' Committee on World Food Security (CFS) as a state in which all people have physical, social, and economic access to adequate safe and nutritious food that fits their dietary needs and food preferences for an active and healthy life at all times.

1.3 The Scope of the Food Crisis in India:

Every night, around 320 Indians go to bed hungry, according to latest figures, and the situation is only getting worse. The average per capita energy consumption in rural areas among the lowest 30% of the expenditure/income class is 1811 kcal/day, which is much lower than the Indian Council of Medical Research (ICMR) norm of 2,155 kcal/day. It is 47.5 grams of protein per day, compared to 48 grams per day in the norm, and 28 grams of fat per day, which is the same as the ICMR norm for rural India. In urban regions, per capita calorie consumption is 1,745 kcal/day, compared to the ICMR's norm of 2,090 kcal/day. It is 47 grams of protein per day compared to a standard of 50 grams, and 35 grams of fat per day compared to a norm of 26 grams. Various nutrition indices in India, on the other hand, imply that the country has yet to reach appropriate levels of food security. For example, 36% of children under the age of five are underweight (i.e., they are too small for their age) and 21% are wasted (too light for their height). In India, vitamin deficiencies are frequent, with 75% of the people not obtaining enough from their diet. Anemia is also prevalent, with 51% of women of reproductive age having low iron levels. Even though most countries in Sub-Saharan Africa are today considerably poorer than India, have grown much more slowly, and have significantly higher infant and child death rates, India's under nutrition levels remain higher. With a score of 30.3, India is ranked 102 out of 117 qualifying countries in the Global Hunger Index. It demonstrates that India has a significant problem with hunger.

According to the World Bank, approximately 9.2% of the world's population faced hunger in 2022, compared with 7.9% in 2019. Moderate or severe food insecurity affected 29.6% of the global population (2.4 billion people) in 2022, with 11.3% being severely food insecure. In 2023, the World Food Programme (WFP) estimates that more than 345 million people face high levels of food insecurity. This is more than double the number in 2020.

1.4 Food Security, the Right to Food, and Indian Issues:

Despite the abundance of food grains, the fact remains that a large number of individuals do not have the money to eat twice a day. Eat security and safeguarding the right to food are two separate challenges.

- Grain storage facilities that are insufficient and unsuitable.
- There isn't enough cold storage or a cold chain transportation infrastructure in place.
- Roads that are in poor condition and transportation systems that are inefficient.
- Mandis's reach is limited.
- Between the farmer and the ultimate consumer, there are several levels of middlemen.
- A well-developed agricultural banking sector is lacking. Lack of knowledge and training in modern agricultural practices, technology, and goods.
- Reduced net sown area for cereals, millets, and pulses, as well as reduced cultivated area.
- Due to the usage of fertilizers, herbicides, and insecticides, land productivity has decreased.

1.5 Role of Law:

In response to the severe levels of food insecurity, the Indian government launched three food intervention programmes in the 1970s. The programmes are the Public Distribution System (PDS) for food grains, the Integrated Child Development Services (ICDS), and Food-for-Work (FFW).

Public Distribution System

The public distribution system evolved as a system for managing scarcity and distributing food grains at reasonable prices. The government of India distributes food grains through the TPDS (Targeted Public Distribution System) to states and union territories for APL and BPL families, including Antyodaya Anna Yojana recipients. The central government is responsible for procuring, storing, and transporting food grains from one state to another. The fair price shops are responsible for distributing the grains to the underprivileged groups in society. The number of food grains delivered to fair-price shops in various locations must be regulated by state governments. Families that are below the poverty line must be identified by the state government, which also issues ration cards and oversees and keeps an eye on the operations of the fair price shop.

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Right to Food in India

All citizens of India have been guaranteed economic justice in the preamble of the Indian Constitution. Economic justice cannot be attained if its citizens are not provided with two square meals each day. The Indian Constitution recognises the right to food both explicitly and implicitly, providing strong national protection that is possibly more accessible to Indian citizens than comparable safeguards offered by international bodies.

The right to life is recognised as a fundamental right in Article 21 of the Indian Constitution. According to the judicial interpretation in *Kharak Singh v. State of U.P. (1963)*, "life" in this Article refers to a life with human dignity rather than merely survival or animal existence. A three-judge Supreme Court bench ruled in *Chameli Singh v. State of U.P. (1996)* that: "*In any organised society, the right to live as a human being is not ensured by meeting only the animal needs of man... In any civilised society, the guarantee of the right to life includes the rights to food, water, a decent environment, education, medical care, and shelter. Every civilised society recognises these basic human rights*".

The directive principles of state policy serve to guide the interpretation of fundamental rights, including the right to life guaranteed by **Article 21**. The right to food is inextricably linked to a dignified life. In order to ensure that its citizens don't experience hunger, the state must ensure food security. Among other primary duties, the state must strive to raise the level of nutrition and standard of living of its people and improve public health.

Considering the right to food under Article 21 of the Indian Constitution, the Supreme Court of India stated in *Kapila Hingorani v. State of Bihar (2003)*: "*The right to food in the context of human rights does not mean that the state is a super-entrepreneur determining and carrying economic activities in its own wisdom. Rather, the right to food in the context of human rights means respecting, protecting, and fulfilling access to food-producing resources and work*".

1.6 Interventions to Protect Food Security and to Relieve Food Crises:

The central role of the state Frequently, the state is in the best position to make structural and institutional reforms and to take action to protect capabilities and entitlements. The forms of institutional change which are likely to be most effective will tend to be those which help to safeguard assets, and which increase the control of poor groups over common resources. Probably the most important is to ensure that each household has access to its own plot of land, and therefore to the means to produce its own subsistence needs without complete reliance on the market. Consequently, land reform must be central to poverty and famine alleviation measures. Also important are measures to improve the access of poorer households to agricultural inputs and to credit facilities. These inputs are often more available to rich peasants and capitalist farmers due to their greater social ties and command over resources. Further state action must help to place people in a position to recover from a period of crisis. Consequently it is necessary for the state to ensure that farmers have access to necessary inputs, and that they are prepared and ready to recommence production when the situation improves, for example when the rains come. State-organized programmes to contain food crises must have a number of other objectives. They must include measures which safeguard people's ability to generate long-term income: by improving and protecting

household assets; by generating investment and employment opportunities; and by improving security of income by extending people's access to non-farm activities. Linked to this, they must protect people's purchasing power, so that they are able to withstand the immediate effects of periods of hardship without needing to resort to distress sales, migration and other measures which may endanger their ability to generate future income. Thirdly, such programmes must also protect vulnerable groups such as women and children, tribal communities and scheduled sections of the population.

1.8 CONCLUSION

This article initially examines causation. It argues that to explain a particular food crisis it is necessary to examine the interaction of a range of factors, probably over a considerable period of time, which may be 'natural' or 'social' ('man-made') in character. It then looks at the question of vulnerability, arguing that people and regions vary in the extent to which they are vulnerable to food crises. Whilst food insecurity is not reducible to the problem of poverty, those most at risk are often those who are most deprived in terms of ownership and access to assets, and who have the lowest incomes and purchasing power. Such inequalities are frequently rooted in relations of class, race, caste and gender which lead to the exploitation or subordination of certain groups in the society concerned. Regions will also vary in their vulnerability for other reasons: due to their differing social and physical environments; their differing political, social and economic situations; the different ways they are incorporated into the national and international divisions of labour, and so on. However, it argues that those who have the least are not necessarily the most at risk. Various forms of social and reciprocal arrangements may exist in the society in which they live, which provide a 'safety-net' to preserve the food security and livelihoods of those most vulnerable. People may also implement other strategies for survival and recovery which reduce their vulnerability. Their level of food security may also be increased by interventions by some external agency. Frequently the state is best placed to take such action. In addition to ensuring that people have access to sufficient food at prices that they can afford, it must intervene to provide relief during periods of distress and inputs, services and knowledge which enable people to meet their needs. For this reason the existence of mechanisms and institutions which place pressure on the state to take such action, and which provide people with a say in formulating policies which affect their future, may be indispensable to protecting a satisfactory food position for all members of a population. Finally, the article examines interventions by the state in India to protect and improve food security. There is little doubt that such interventions have achieved considerable success in preventing famine. In certain regions there have also been significant improvements in standards of health, education and other services, and in improving the 'capabilities' of sections of the population. However such measures have made little impact on the widespread chronic malnutrition which affects much of the population much of the time, particularly in rural areas. These improvements in people's food position and welfare have varied widely between states, due to their differing physical environments and resource positions, and to differences in policies implemented by state governments.

**A STUDY ABOUT THE SOCIAL MEDIA USERS 'PREFERENCES TO PURCHASE
ONLINE/OFFLINE PRODUCT/SERVICES****Prof. Ashutosh Sharma¹ and Dr. Yagbala Kapil²**¹Assistant Professor, I.T.S School of Management, Ghaziabad²Associate Professor, G. L. Bajaj Institute of Management & Research, Greater Noida**ABSTRACT**

This Research aims to Study about the Social Media Users' Preferences to Purchase online/offline products/services. People active on different social media platforms like Facebook, Instagram, Linkdin etc. have been taken in to consideration to achieve the objective. Also it aims to know that how marketers can make use of these social media platforms in an effective way to influence the Social Media users to purchase Good/Services offline/online by watching online advertisements. To achieve the objective an online survey was conducted in which a questionnaire was circulated online to 500 people out of whom 326 provided the information by answering the questions asked in questionnaire. Most of the participants were from NCR (62.6%) & U.P.(23.3%), and all of them were using multiple Social Media Platforms like; Facebook, Instagram, Linkdin, Youtube, Telegram, Twitter, Snapchat, Whatsapp etc. To Analyse the data SPSS & Excel software have been used. Study shows very interesting results, those can be very useful for marketers. It concludes that social networking sites (SNS) can be utilized by Sellers/Enterprises to create direct communication and good relationships with their customers active on social media platforms, and hence social media marketing activity (SMMA) can be considered as a good choice to upgrade the customer's relationship quality, which in result can impact customer behavioural outcomes like to buying Intentions of some specific products/services online/offline.

Keywords: Social Media Platforms, Social Media Marketing Activity (SMMA), SPSS (Statistical Package for Social Sciences), Customer Behavioural Outcomes like buying Intention.

1. INTRODUCTION

In last decade there has been a tremendous growth in the use of social media platforms such as Facebook WhatsApp, Instagram, Twitter etc. People are using these platforms to communicate with one another, and popular Products/Services use them to market their products. But question arises that what are the products or services which are to be differentiated as per the preference of customers to purchase them online or offline. Because without knowing the preference of customer, if a marketer tries to sell something online, which customer prefer to buy online, it become waste of money & opportunity to target the potential customer. The use of social media to commercially promote processes or events to attract potential consumers online is referred to as social media marketing (SMM). With the immense rise in community websites, a lot of organizations have realised to utilize these sites in creating strong relationships and communications with users of Social media platforms. Social media marketing efficiently fosters communications between customers and marketers, besides enabling activities that enhance Products/Services awareness (Hafez 2021). For that reason, SMM remains to be considered as a great marketing strategy, but how it impacts intentions is limited. Till the date, a lot of researches on SMM have focused on consumer's behaviour, creative strategies, content analysis and the benefits of user-generated content, and their relevance to creating virtual Products/Services communities (Ibrahim, 2021). Companies now appreciate sharing products/services information and consumer's experience. Due to the widespread use of Smart-phones and the Internet developing online communities have become very efficient. During our research we tried to find out factors like; users' age group, income level, number of family members etc. those can affect the decision of purchasing/referring products/services by seeing on their social media platforms. We floated a questionnaire among our known people and requested them to answer the questions asked with full honesty. We requested to around 500 people out of which 326 provided the information by answering the questions asked in questionnaire. Analysis of some of the questions is shown below;

Q. 8. Do you like to prefer shopping online or offline?

326 responses

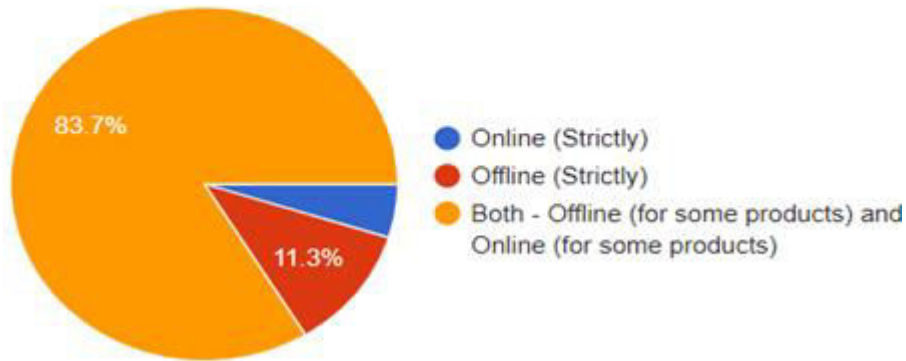


Figure-1

Above chart is showing that 83.7% of the respondents select their mode of purchasing (offline/online) depending on the nature of the product/service. And this creates curiosity to know about, what are the product/services which a customer would like to purchase online/offline.

Question.13. How likely are you to buy a product recommended online?

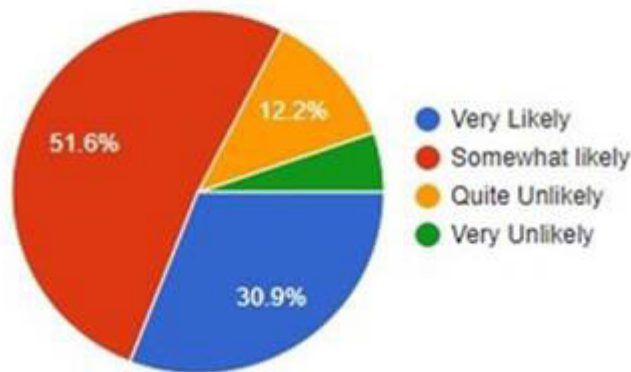


Figure-2

Question.15. How much would you rate products/Services recommendations on your Social Media platforms?

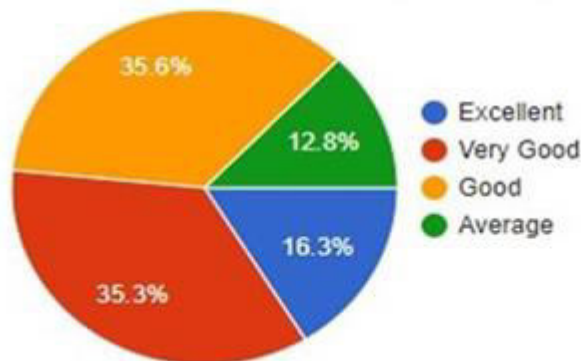


Figure-3

Some of Social groups create a sense of continuity for their members without meeting physically (Yadav and Rahman, 2017). When customers are part of online communities, there is a cohesion that grows among the customers, which impacts the market. The online community's nature is like that of actual communities when it comes to creating shared experiences, enabling social support, and attending to the members' need to identify themselves, regardless of the similarities and variances existing between real-world communities and online communities (Seo and Park, 2018). Since consumers' social relationships create Products/Services communities,

these communities have customs, traditions, rituals, and community awareness. The group members (on any of the social media platforms) learn from each other and share knowledge about a product, hence appreciating each other's actions and ideas.

So, once a consumer joins a particular Products/Services community, automatically, the Products/Services become a network and common language linking the community members together because of sharing Products/Services experiences (Arora and Sanni, 2019). Based on the perspective of Products/Services owners, most research has focused on how social communities can benefit Products/Services. However, the social community should have great value. It should be beneficial to the potential customers by providing them with information relevant to the Products/Services in question.

2. LITERATUREREVIEW

SNS (Social Networking Sites) possibly become a reciprocal communication medium between the enterprise and customers. SNS's ability to reach a wide range of users, its low cost (Ajina, A.S., 2019), and the fact it has become a part of the lives of common citizens is useful for enterprises to ensure the appeal of marketing activities, create customer awareness, and build virtual Products/Services communities (Chen, S.-C., 2019). However, a survey conducted by the Ministry of Communication and Informatics Republic of Indonesia in 2019 found that most people use social media platforms to sell a product or service, but when they want to buy, they prefer to use a marketplace platform. This indicates that despite the marketplace platform having advanced features, social media may still be able to encourage people to buy through social media by providing the right marketing activity content. During our research also we found that people have different preferences (online shopping & offline shopping) for different types of products/services. Therefore, to get the most out of a marketing activity on social media, enterprise have to understand the importance of the content or the message's form that they want to deliver and its impact on consumers' experience, which can lead to achievement of the company's marketing goals.

Most businesses use online marketing strategies such as blogger endorsements, advertising on social media sites, and managing content generated by users to build brand awareness among consumers (Wang and Kim, 2017). Social media is made up of internet-associated applications anchored on technological and ideological Web2.0 principles, which enables the production and sharing of the content generated by users. Due to its interactive characteristics that enable knowledge sharing, collaborative, and participatory activities available to a larger community than in media formats such as radio, TV, and print, social media is considered the most vital communication channel for spreading brand information. Social media comprises blogs, internet forums, consumer's review sites, social networking websites (Twitter, Blogger, LinkedIn, and Facebook), and Wikis (Arrigo, 2018). Social media facilitates content sharing, collaborations, and interactions. These social media platforms and applications exist in various forms such as social bookmarking, rating, video, pictures, podcasts, wikis, micro-blogging, social blogs, and weblogs. Social networkers, governmental organizations and business firms are using social media to communicate, with its use increasing tremendously (Cheung et al., 2021). Governmental organizations and business firms use social media for marketing and advertising. Integrated marketing activities can be performed with less cost and effort due to the seamless interactions and communication among consumer partners, events, media, digital services, and retailers via social media (Tafesse and Wien, 2018). According to Liu et al. (2021), marketing campaigns for luxury brands consist of main factors such as customization, reputation, trendiness, interaction, and entertainment which significantly impact customers' purchase intentions and brand equity. Activities that involve community marketing accrue from interactions between events and the mental states of individuals, whereas products are external factors for users (Parsons and Lepkowska-White, 2018). But even though regardless of people experience similar service activities, there is a likelihood of having different ideas and feelings about an event; hence, outcomes for users and consumers are distinct. In future marketing, competition will focus more on brand marketing activities; hence, the marketing activities ought to offer sensory stimulation and themes that give customers a great experience. Now brands must provide quality features but also focus on enabling an impressive customer's experience (Beig and Khan, 2018). Customer's satisfaction involves comparing expected and after-service satisfaction with the standards emanating from accumulated previous experiences. According to implementation confirmation theory, satisfaction is a consumer's expected satisfaction with how the services have lived up to those expectations. Customers usually determine the level of satisfaction by comparing the satisfaction previously experienced and the current one (Pang, 2021). According to recent studies, community satisfaction impacts consumer's loyalty and community participation. A study community's level of satisfaction is determined by how its members rate it (Jarman et al., 2021). Based on previous interactions, the community may be evaluated. When the members are satisfied with their communities, it is manifested through joyful emotions,

which affect the behavior of community members. In short, satisfaction creates active participation and community loyalty (Shujaat et al., 2021).

Regarding manifestations and technology, online communities are distinct from real-life communities. A certain Products/Services product or service is used to set up a Products/Services community. Products/Services communities refer to certain communities founded based on interactions that are not limited by geographical restrictions between Products/Services consumers (Chen and Lin, 2019).

3. RESEARCH OBJECTIVES

- i). To know the products/services preferred by the Social media users to purchase online.
- ii). To know the products/services preferred by the Social media users to purchase offline.
- iii). To study the association between Family Monthly Income and Brand Presence on social media influence purchasing decision.
- iv). To study the association between Social Media you are most active on and How likely you buy a product/service recommended online.

4. HYPOTHESIS

- i). There is no significant association between Family Monthly Income and Brand Presence on social media influence purchasing decision.
- ii). There is no significant association between Social Media you are most active on and How likely you buy a product/service recommended online.

5. METHODOLOGY

Data Source/Location	Data type–Primary/Secondary	Analytical Tools
Fresh data is collected from 326 respondents living in NCR, UP & Other regions of India through an online questionnaire.	Primary Data has been collected through Questionnaire. For some instances graphs and data is shown as secondary data.	Excel to draw Table & charts, whereas SPSS is used to test the association between nominal variables by Crosstab & Chi-square test.

6. DATA ANALYSIS

(i).



Figure-4

(ii).

Q. 10. What kind of products you prefer to purchase off-line? You can choose as many as you prefer.

326 responses

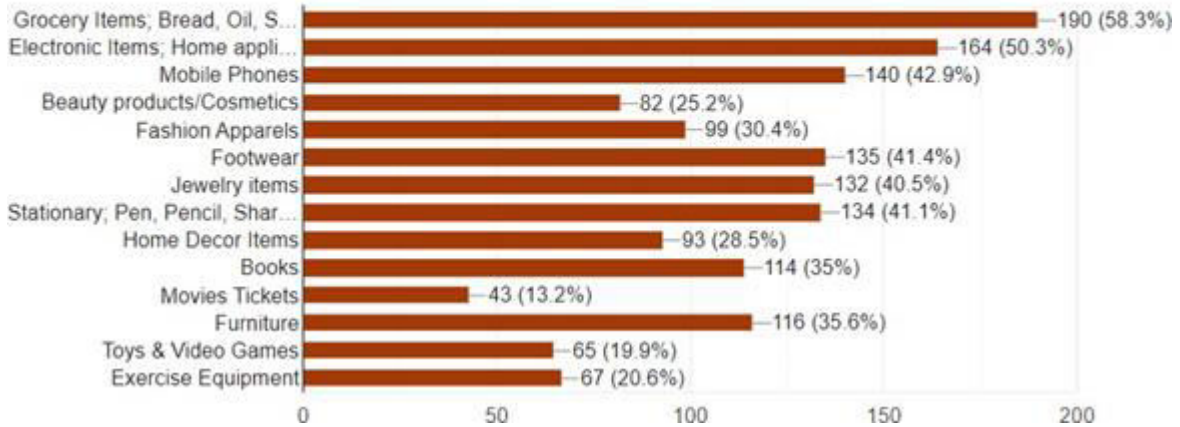


Figure-5

(iii).Family_Monthly_Income*Brand_Presence_on_social_media_influence_purchasing_decision Crosstabulation

		Brand_Presence_on_social_media_influence_purchasing_decision			Total
		Never	Toalargeextent	Tosomeextent	
	Count	10	18	65	93
	% within Family_Monthly_Income	10.8%	19.4%	69.9%	100.0%
	25,000-50,000 % within Brand_Presence_on_social_media_influence_purchasing_decision	29.4%	26.9%	30.2%	29.4%
	%ofTotal	3.2%	5.7%	20.6%	29.4%
	Count	5	8	33	46
	% within Family_Monthly_Income	10.9%	17.4%	71.7%	100.0%
	50,000-75,000 % within Brand_Presence_on_social_media_influence_purchasing_decision	14.7%	11.9%	15.3%	14.6%
	%ofTotal	1.6%	2.5%	10.4%	14.6%
Family_Monthly_Income	Count	4	8	22	34
	% within Family_Monthly_Income	11.8%	23.5%	64.7%	100.0%
	75,000 - 1,00,000 % within Brand_Presence_on_social_media_influence_purchasing_decision	11.8%	11.9%	10.2%	10.8%
	%ofTotal	1.3%	2.5%	7.0%	10.8%
	Count	12	9	63	84
	% within Family_Monthly_Income	14.3%	10.7%	75.0%	100.0%
	Lessthan 25,000 % within Brand_Presence_on_social_media_influence_purchasing_decision	35.3%	13.4%	29.3%	26.6%

	%ofTotal	3.8%	2.8%	19.9%	26.6%
Morethan 1,00,000	Count	3	24	32	59
	% within Family_Monthly Income	5.1%	40.7%	54.2%	100.0%
	% within Brand_Presence on_social_medi a_influence_pur chasing_decision	8.8%	35.8%	14.9%	18.7%
	%ofTotal	.9%	7.6%	10.1%	18.7%
	Count	34	72	220	326
	% within Family_Monthly Income	10.8%	21.2%	68.0%	100.0%
Total	% within Brand_Presence on_social_medi a_influence_pur chasing_decision	100.0%	100.0%	100.0%	100.0%
	%ofTotal	10.8%	21.2%	68.0%	100.0%

Table-1

Chi-Square Tests (To Check the association between Family Monthly Income and Brand Presence on social media influence purchasing decision)

	Value	Df	Asymp.Sig.(2-sided)
Pearson Chi-Square	20.678 ^a	8	.008
Likelihood Ratio	19.862	8	.011
N of Valid Cases	326		

Table-2

2 cells (13.3%) have expected count less than 5. The minimum expected count is 3.66.

Bar Chart

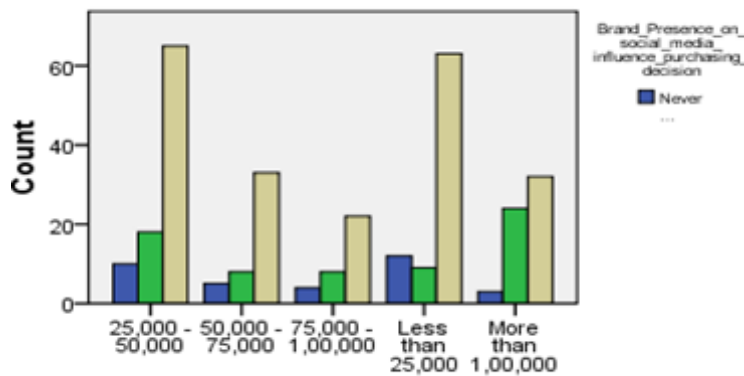


Figure-6

Chi-Square Tests (Social Media you are most active on* How likely you buy a product/service recommended online)

	Value	Df	Asymp.Sig.(2-sided)
Pearson Chi-Square	374.950 ^a	312	.008
N of Valid Cases	326		

Table-3

7. INTERPRETATION

- i). Figure-4 shows that respondents prefer to buy Mobile phones (45%), Fashion Apparels (43.3%) & foot-wears (42.3%) online.
- ii). Figure-5 shows that respondents prefer to buy Grocery items (58.3%), Electronic Items (50.3%) & Furniture (35.6%) offline.

- ii). Table-2 shows the Chi-Square test results to check the association between Family Monthly Income and Brand Presence on social media influence purchasing decision. As Chi-square statistics is significant at 5% level of significance, thus from the analysis, it is being revealed that Brand Presence on social media platforms influence the purchasing decision has association with Family Monthly Income.
- iii). Table-3 shows the Chi-Square Test between Social Media you are most active on and how likely you buy a product/service recommended online. As Chi-square statistics is insignificant at 5% level of significance. From the analysis it is being revealed that Social Media platform has an association with a person buy a product/service recommended online.

8. DISCUSSIONS AND RECOMMENDATIONS

In this study we found that social media users prefer to buy only some selected items online, and it might be because of some serious concerns like, Online fraud, Buying the product after proper quality Assurance, fear of receiving product of different colour & shape as compare to the actual item (shown in the pics) etc. Though online shopping companies like Amazon, Flipkart & Meesho are providing schemes of returning the product with a given period of time but still people have such fears in mind, because of which they avoid to purchase some particular items online. Hence marketers are advised to make more transparent system of delivering such products/services, so that above mentioned fears can be removed from the customers' mind and online shopping can be made more reliable & safe for them to buy all kind of products/services in future.

9. SCOPE FOR FURTHER RESEARCH

- This research opens the door to investigate factors influencing consumer trust in social media content, including credibility, information quality, and presence of sponsored content.
- Exploring ethical issues in social media marketing such as data privacy, transparency, and use of persuasive techniques to align with consumer expectations and regulatory standards.
- Use of AI making regression analysis as bases to identify potential customers available on different online social media platforms.
- Comparing effectiveness of different social media marketing strategies (influencer marketing, content marketing, paid advertising) to understand consumer engagement and purchasing decisions.

10. CONCLUSIONS

The research here concludes that Brand presence on social media platforms is independent of Gender, But choice of social media platform has an association with like to buy products/services recommended online. As 82.6% of the respondents like to buy products/services recommended on their social media platforms, therefore it becomes important to know that on which social media platform marketers should showcase their advertisements? So the answer is Instagram with 67.5% active Social media users is the most suitable to do online marketing. In our study also we found that people active on Instagram are likely to buy products/services recommended online. After Instagram youtube is the most active social media platform with around 49.4% of the active social media users and has a great exposure for new marketers due to a very less amount to be paid for marketing. Apart from these, Linkdin (32.8%), Snapchat(25.6%) & Telegram(23.1%) are also quite popular among the people. We hope that this research will help the promoters to take their marketing strategies in more appropriate way to attract the buyers available on different social media platforms.

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A COMPARATIVE STUDY OF VALUE OF INR/USD BEFORE & AFTER VOSTRO ACCOUNTS HAVE BEEN INTRODUCED BY RBI IN INDIA**Prof. Ashutosh Sharma¹ and Ashutosh Pandey²**¹Assistant Professor, I.T.S School of Management, Ghaziabad²PGDM Student I.T.S School of Management, Ghaziabad**ABSTRACT**

This study aims to explore the relationship between Vostro Accounts and the value of the Rupee against the Dollar, focusing on how these accounts have contributed to enhance the rupee's value against US Dollar. Through a comprehensive analysis of Economic data, banking policies, and case studies, this research seeks to provide insights into the mechanisms through which Vostro accounts impact currency valuation. The methodology involves both qualitative and quantitative approaches. Qualitative analysis includes a review of relevant literature and banking regulations to understand the operational dynamics of Vostro accounts. Quantitative analysis comprises Statistical modelling and econometric techniques to assess the correlation between the utilization of Vostro accounts and fluctuations in the rupee-dollar exchange rate. For Data Analysis SPSS & Excel software were used. Preliminary findings suggest that Vostro accounts play a significant role in stabilizing the value of the Rupee against the Dollar by facilitating efficient cross-border transactions, reducing exchange rate volatility, and enhancing confidence among foreign investors. Furthermore, the study identifies specific factors within the functioning of Vostro accounts, such as liquidity management and risk mitigation strategies, which contribute to their positive impact on currency valuation.

Keywords: Vostro Accounts, Value of the Rupees against US Dollar, SPSS (Statistical Package for Social Sciences), Liquidity Management, Risk Mitigation Strategies.

**1. INTRODUCTION**

The fluctuating value of currencies in the foreign exchange market is a critical concern for economies worldwide. In India, maintaining the rupee's value against major currencies such as the dollar is paramount due to its implications on trade, investment, and overall economic stability. Vostro accounts, a type of foreign currency account used by banks to facilitate international transactions, have emerged as a significant factor influencing the value of the rupee against the dollar.

The implications of this research extend to policymakers, banking institutions, and businesses involved in international trade and finance. By understanding the mechanisms through which Vostro accounts influence currency value, stakeholders can devise strategies to optimize their utilization and mitigate currency risks effectively. Ultimately, this study aims to provide valuable insights into enhancing the resilience of the Indian economy against external currency fluctuations through the strategic management of Vostro accounts. In recent years, the global economy has witnessed fluctuations in currency values, particularly concerning the exchange rate between the Indian Rupee (INR) and the United States Dollar (USD). Amidst such fluctuations, Vostro accounts have emerged as a significant instrument in facilitating international trade and finance, playing a pivotal role in enhancing the value of the Rupee against the Dollar.

Vostro accounts represent a vital component of the international banking system, allowing correspondent banks to hold local currency on behalf of foreign banks. These accounts serve as a conduit for facilitating cross-border transactions, thereby fostering seamless trade and investment activities between countries.

This study aims to delve into the mechanisms through which Vostro accounts contribute to strengthening the value of the Rupee against the Dollar. By examining the various ways in which these accounts operate and their implications on currency dynamics, this research seeks to provide insights into the broader impact of Vostro accounts on the Indian economy.

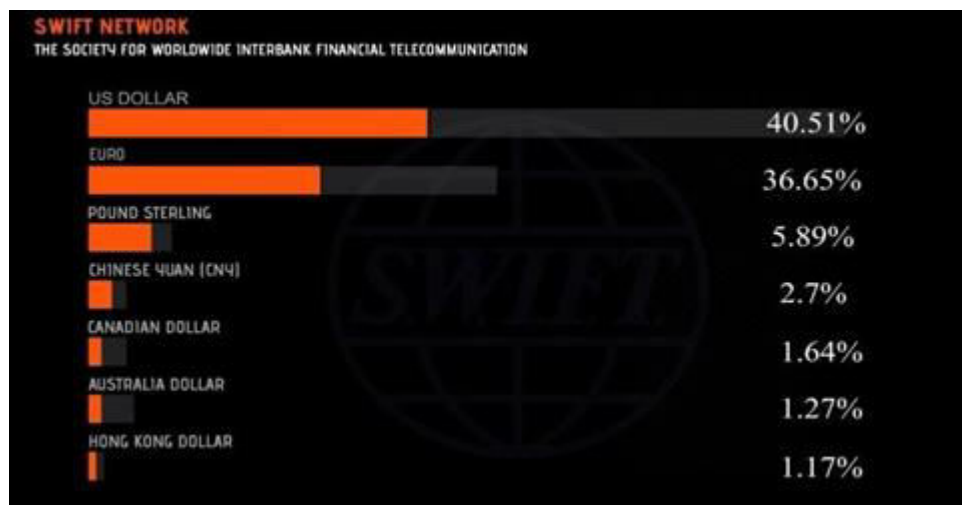


Figure - 1

Through an analysis of relevant literature, statistical data, and case studies, this study endeavors to shed light on the following aspects:

1. The concept and functions of Vostro accounts: This section will provide a comprehensive understanding of Vostro accounts, elucidating their purpose, structure, and operational mechanics. It will explore how these accounts facilitate cross-border transactions and enable efficient fund management for correspondent banks.
2. Impact on currency exchange rates: This segment will investigate the influence of Vostro accounts on currency exchange rates, with a particular focus on the Rupee- Dollar exchange rate. By examining historical trends and empirical evidence, it will elucidate how the existence of Vostro accounts affects the value of the Rupee vis-à-vis the Dollar/
3. Role in promoting trade and investment: Here, the study will assess the role of Vostro accounts in promoting international trade and investment flows. It will analyze how these accounts facilitate smoother transactions between Indian and foreign entities, thereby fostering economic growth and stability.
4. Regulatory framework and challenges: This section will examine the regulatory framework governing Vostro accounts in India and abroad. Additionally, it will highlight the challenges and risks associated with these accounts, including regulatory compliance, currency volatility, and counterparty risks.
5. Case studies and empirical analysis: The study will incorporate case studies and empirical analysis to illustrate the practical implications of Vostro accounts on currency dynamics and economic outcomes. By examining real-world examples, it aims to provide tangible insights into the functioning and impact of these accounts.

By addressing these key areas, this study seeks to contribute to a deeper understanding of how Vostro accounts have been instrumental in enhancing the value of the Rupee against the Dollar. Through empirical analysis and theoretical insights, it aims to provide policymakers, researchers, and stakeholders with valuable perspectives on the role of Vostro accounts in shaping currency dynamics and promoting economic stability.

2. LITERATURE REVIEW

The relationship between currencies is a complex interplay of various economic factors, including trade balances, interest rates, government policies, and financial market dynamics. In recent years, the value of the Indian Rupee (INR) against the US Dollar (USD) has been a topic of significant interest and concern for policymakers, economists, and market participants. One aspect that has gained attention in this context is the role of Vostro accounts in influencing the value of the Rupee against the Dollar. This literature review aims to explore existing studies and research findings on this subject to provide insights into the potential impact of Vostro accounts on the exchange rate dynamics between the Rupee and the Dollar.

Definition and Functioning of Vostro Accounts: Vostro accounts refer to accounts maintained by a domestic bank on behalf of a foreign bank. These accounts are used primarily for facilitating international trade and cross-

border transactions. In the context of the Rupee- Dollar exchange rate, Vostro accounts play a crucial role in managing foreign currency inflows and outflows, as well as in providing liquidity to the foreign exchange market.

Empirical Evidence on the Impact of Vostro Accounts on Exchange Rates: Several studies have examined the relationship between Vostro accounts and exchange rate dynamics, although the specific focus on the Rupee-Dollar exchange rate may be limited. However, insights from these studies can still provide valuable perspectives on the potential impact of Vostro accounts on currency values.

1. **Cross-Border Capital Flows:** Research by Rajan and Reinhart (2004) highlights the significance of cross-border capital flows in influencing exchange rates. Vostro accounts serve as channels for managing these flows, which can impact the supply and demand dynamics of currencies in the foreign exchange market. Increased activity in Vostro accounts may lead to higher demand for the Rupee, thereby contributing to its appreciation against the Dollar.
2. **Liquidity Provision:** Studies by BIS (Bank for International Settlements) have emphasized the role of Vostro accounts in providing liquidity to the foreign exchange market (BIS, 2016). In times of market stress or volatility, Vostro account balances can be utilized to support currency values and stabilize exchange rates. This liquidity support mechanism can help mitigate excessive fluctuations in the Rupee-Dollar exchange rate.
3. **Trade Finance and Economic Growth:** Research by Goldberg and Tille (2009) underscores the importance of trade finance in fostering economic growth and development. Vostro accounts facilitate trade finance activities by enabling efficient payment settlements and cross-border transactions. A robust trade finance infrastructure can enhance confidence in the domestic currency and strengthen its value relative to foreign currencies like the Dollar.

Conclusion: The literature reviewed suggests that Vostro accounts play a multifaceted role in influencing exchange rate dynamics and can potentially contribute to the enhancement of the value of the Rupee against the Dollar. By facilitating cross-border capital flows, providing liquidity to the foreign exchange market, and supporting trade finance activities, Vostro accounts contribute to the overall stability and strength of the Rupee. However, further empirical research specifically focusing on the relationship between Vostro accounts and the Rupee-Dollar exchange rate is needed to provide more conclusive insights into this complex phenomenon.



The Rupee Vostro Account system has been instrumental in facilitating international trade in Rupees. For instance, the RBI has granted approval for opening 60 special rupees Vostro accounts in domestic and foreign banks in 18 countries, including Russia, Germany, Singapore, Israel, Mauritius, Malaysia, Myanmar and Sri Lanka to facilitate overseas trade in the Indian currency. This development signifies a significant step in the establishment of a mechanism to settle international trade in the Rupee.

3. RESEARCH OBJECTIVES

The primary objective of this study is to investigate the role and impact of Vostro accounts in enhancing the value of the Indian Rupee against the US Dollar. To achieve the objective following steps were taken:

- Examine the Monthly percentage change in the value of INR vs US Dollar for 22 months before the starting of Vostro Accounts by RBI on 11.07.2022.
- Examine the Monthly percentage change in the value of INR vs US Dollar for 22 months after the starting of Vostro Accounts by RBI on 11.07.2022.
- Then comparing the Descriptive Statistics of the above data.
- To test that is there any significant difference in the monthly percentage change in the value of INR against UD Dollar during Before & After 22 months of Starting of Vostro Accounts by RBI in India.

4. HYPOTHESIS

There is no significant difference in them only percentage change in the value of INR against UD Dollar during Before & After 22 months of Starting of Vostro Accounts by RBI in India.

5. METHODOLOGY

Data Source/Location	Data type – Primary/Secondary	Analytical Tools
Information about the Vostro Account were collected from various Articles available online by Times of India & Statista.com. Data of Currency comparison was taken from investing.com website.	Graphs and data shown are Secondary data.	Excel was to used draw Table, charts and to apply two sample t-test.

6. DATA ANALYSIS

11 November, 2020 to 10 July, 2022 (22 Months Data of Value of INR vs US DOLLAR)						
Date	Price	Open	High	Low	Volume	Chg%
Jul-22	79.336	78.97	80.235	78.805	0	0.49%
Jun-22	78.95	77.646	79.095	77.38	0	1.78%
May-22	77.569	76.505	77.915	75.99	0	1.37%
Apr-22	76.52	75.925	76.806	75.266	0	0.82%
Mar-22	75.901	75.289	77.187	75.26	0	0.54%
Feb-22	75.493	74.563	75.848	74.343	0	1.29%
Jan-22	74.529	74.463	75.327	73.748	0	0.08%
Dec-21	74.467	75.08	76.419	74.093	0	-0.83%
Nov-21	75.09	74.96	75.201	73.834	0	0.23%
Oct-21	74.915	74.185	75.683	74.081	0	1.01%
Sep-21	74.164	72.992	74.368	72.913	0	1.67%
Aug-21	72.947	74.368	74.514	72.907	0	-1.87%
Jul-21	74.337	74.374	75.031	74.218	0	-0.03%
Jun-21	74.36	72.508	74.471	72.483	0	2.55%
May-21	72.511	74.279	74.332	72.315	0	-2.08%
Apr-21	74.05	73.169	75.57	73.155	0	1.25%
Mar-21	73.137	73.585	73.783	72.268	0	-1.06%
Feb-21	73.92	72.918	74.06	72.263	0	1.43%
Jan-21	72.877	73.1	73.6	72.785	0	-0.22%
Dec-20	73.036	74.025	74.104	72.951	0	-1.29%
Nov-20	73.99	74.567	75.015	73.637	0	-0.76%
Oct-20	74.554	73.595	74.712	72.969	0	1.35%

Table-1

11 July, 2022 to 10 April, 2024 (22 Months Data of Value of INR vs US DOLLAR)						
Date	Price	Open	High	Low	Volume	Chg%
Apr-24	83.229	83.365	83.617	83.169	0	-0.14%
Mar-24	83.35	82.926	83.733	82.645	0	0.54%

Feb-24	82.9	83.083	83.127	82.812	0	-0.23%
Jan-24	83.095	83.24	83.359	82.767	0	-0.11%
Dec-23	83.19	83.356	83.465	82.91	0	-0.20%
Nov-23	83.357	83.278	83.499	82.906	0	0.12%
Oct-23	83.256	83.165	83.348	82.956	0	0.27%
Sep-23	83.03	82.647	83.36	82.576	0	0.40%
Aug-23	82.702	82.24	83.467	82.222	0	0.56%
Jul-23	82.24	82.061	82.821	81.666	0	0.18%
Jun-23	82.091	82.666	82.697	81.841	0	-0.71%
May-23	82.68	81.795	82.953	81.65	0	1.17%
Apr-23	81.72	82.391	82.484	81.547	0	-0.54%
Mar-23	82.16	82.588	82.92	81.61	0	-0.58%
Feb-23	82.64	81.765	83.047	81.676	0	1.10%
Jan-23	81.739	82.67	83.038	80.874	0	-1.18%
Dec-22	82.717	81.151	82.993	80.985	0	1.67%
Nov-22	81.359	82.817	82.996	80.483	0	-1.70%
Oct-22	82.77	81.532	83.268	81.284	0	1.55%
Sep-22	81.509	79.535	82.02	79.01	0	2.54%
Aug-22	79.491	79.185	80.135	78.393	0	0.20%
Jul-22	79.336	78.97	80.235	78.805	0	0.49%

Table-2

Sample Assuming Unequal Variances		
Different Measures	Variable1	Variable2
Mean	0.350909091	0.245454545
Variance	1.56818961	0.933359307
Observations	22	22
Hypothesized Mean Difference	0	
Df	39	
t Stat	0.312731872	
P(T<=t)one-tail	0.378075292	
tCriticalone-tail	1.684875122	
P(T<=t)two-tail	0.756150585	
tCriticaltwo-tail	2.022690901	

Table-3

Descriptive Statistics			
For 22 Months Before 11.07.22		For 22 Months After 11.07.22	
Mean	0.350909091	Mean	0.245454545
Standard Error	0.266985666	Standard Error	0.205974326
Median	0.515	Median	0.19
Mode	#N/A	Mode	#N/A
Standard Deviation	1.252273776	Standard Deviation	0.966105226
Sample Variance	1.56818961	Sample Variance	0.933359307
Kurtosis	-0.651815855	Kurtosis	0.614822196
Skewness	-0.392429093	Skewness	0.360259074
Range	4.63	Range	4.24
Minimum	-2.08	Minimum	-1.7
Maximum	2.55	Maximum	2.54
Sum	7.72	Sum	5.4
Count	22	Count	22

Table-4

7. RESULTS & INTERPRETATIONS

i). Table-1 shows the Monthly percentage change in the value of INR vs US Dollar for 22 months before the starting of Vostro Accounts by RBI on 11.07.2022. Here it important to note that Range (80.23 – 72.26 =

7.97) of value INR vs USD. Which is quite higher.

- ii). Table-2 shows the Monthly percentage change in the value of INR vs US Dollar for 22 months after the starting of Vostro Accounts by RBI on 11.07.2022. Here we noticed the Range ($83.73 - 78.80 = 4.93$) of value INR vs USD. This was less than the range of INR/USD in 22 months before 22.07.24. Therefore it's visible from the data that rate of increase in the value of INR/USD has decreased after the starting of Vostro Accounts by RBI in India.
- iii). Table-3 shows the results of t-Test to test the significance difference between percentage change in the value of INR/USD. As p-value is greater than 0.05 therefore test is insignificant and shows that there is no significant difference in the percentage change in the monthly value of INR/USD before and after 22 months of Starting of Vostro Accounts by RBI in India.
- iv). Table-4 shows the Descriptive Statistics for the percentage change in the value of INR/USD Before & After 22 months of Starting of Vostro Accounts by RBI in India. Though in Table-3 test is insignificant but by looking at the descriptive statistics we observed that because mean value & standard deviation of percentage change in the value of INR/USD during 22 months after 11.07.22 is less than the mean value & standard deviation of percentage change in the value of INR/USD during 22 months before 11.07.22, which means that Vostro accounts have affected the increase in the value of INR/USD.

8. DISCUSSIONS AND RECOMMENDATIONS

In this study we found that (Table-4) monthly values of INR/USD during 22 months before starting of Vostro Accounts have negatively skewed distribution (Skewness = -0.39), it means that high level of monthly percentage changes were occurring in the value of INR/USD during that period. And monthly values of INR/USD during 22 months after starting of Vostro Accounts have positively skewed distribution (Skewness = 0.36), it means that low level of monthly percentage changes were occurring in the value of INR/USD during this period.

9. SCOPE FOR FURTHER RESEARCH

This Research opens the doors for Examining the nature and functionality of Vostro accounts, particularly in the context of facilitating international trade and currency exchange between Indian banks and foreign correspondent banks. Further evaluation of the relationship between the use of Vostro accounts and the stability and liquidity of the Indian Rupee in the foreign exchange market can be done in future. At present research on Vostro Accounts in India is in its initial stage there are lot of things to be assessed like; How Vostro accounts contribute to mitigating currency volatility and enhancing investor confidence in the Indian economy. Research to Identify any regulatory or operational challenges associated with Vostro accounts and propose is still to be done.

10. CONCLUSIONS

Here we conclude that after Vostro accounts started by RBI in India, value of INR/USD has become stable up to some extent but not significantly. But It's just beginning, we need to wait & watch for few more years. Until India makes some more significant efforts to establish the confidence among its trading countries, Vostro account would not be able to show some significant differences to make INR more strong against USD.

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EXPLORING THE CULINARY TRAVEL INDUSTRY'S IMPACT IN INDIA

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The growing recognition of cuisine's role in attracting tourists is increasingly evident as India positions itself as a premier travel destination. The interplay between food and travel is widely acknowledged, with a destination's culinary offerings significantly shaping visitors' overall experience. India, renowned for its diverse gastronomy, has effectively leveraged its culinary traditions as a key marketing and branding tool. This article aims to explore the impact of culinary tourism in India. Tourists, willing to travel long distances, are willing to pay a premium for exceptional dining experiences. Culinary establishments can benefit local businesses, agriculture, and traditional industries, thereby fostering economic growth. Each tourist destination boasts a unique history and culture, with travelers often cherishing memories of distinct flavors encountered during their journeys. Culinary tourists are drawn to authentic culinary experiences that offer insights into local traditions and cultures. Culinary tourism typically encompasses cultural immersion, gastronomic exploration, and appreciation of regional culinary heritage. In summary, the burgeoning culinary tourism sector in India presents multifaceted outcomes across economic, socio-cultural, environmental, and policy realms. While offering vast potential for economic advancement, cultural exchange, and immersive travel experiences, it also poses challenges related to sustainability, cultural preservation, and inclusive development. Through comprehensive tourism management strategies, India can harness the transformative potential of culinary tourism while safeguarding its rich culinary heritage for future generations.

Keywords: Culinary Tourism, Travelers, Ecosystems, Food and Travel, Flavors

INTRODUCTION**Food Tourism**

India is a land of culinary diversity, with each state and region boasting its own unique gastronomic practices and cultural flavors. Visitors to Kerala are treated to a tantalizing array of delicacies that capture the essence of the region's rich heritage. From the traditional idiyappam paired with flavorful curry to the hearty erissery and the iconic combination of pattu and kadala curry, Kerala's culinary offerings promise a culinary journey like no other. Other must-try dishes include the fresh catch of the day prepared in various styles, the comforting appam served with aromatic stew, and the classic dosa ghee roast accompanied by authentic Kerala-style sambar. Indulging in these delicacies not only satisfies the palate but also provides a deeper understanding of Kerala's past and culture.

Similarly, Punjab entices food lovers with its hearty and flavorful cuisine. Iconic dishes such as aloo paratha, tandoori chicken, butter chicken, Makki di roti, and lassi showcase the region's rich culinary traditions and agricultural bounty. Meanwhile, Maharashtra's street food scene is renowned for its vibrant flavors and eclectic offerings. From the iconic vada pav in Mumbai to the savory pudachi wadi, zunka bhakari, pav bhaji, Puran Poli missal, and bhel puri, Maharashtra's street food delights are a testament to the state's culinary creativity and cultural diversity.

TYPES OF CULINARY TOURISM

Culinary tourism offers a diverse range of experiences, each catering to different tastes and interests:

- 1. Cuisine Tourism:** This type of culinary exploration delves into the unique ingredients, techniques, and recipes that define a particular culinary style. It emphasizes the cultural and geographical aspects of cuisine, showcasing locally sourced ingredients and traditional cooking methods. In India, for instance, culinary treasures like idli sambar in Kerala, zunka-bhakari and vada pav in Maharashtra, and the hearty Kashmiri meat and rice dishes exemplify the rich regional diversity of Indian cuisine.
- 2. Gastronomy Tourism:** Gastronomy tourism aims to introduce travelers to new flavors and culinary experiences in a specific location. It often involves curated meals that showcase the local culture and ingredients, supporting the local economy and landscape. Through standardized culinary services, gastronomy tourism promotes regional and local food, offering travelers insight into the customs, beliefs, and

traditions of the destination. This immersive culinary journey can foster repeat visits and deep connections with the local community.

3. **Grape Wine Tourism:** Also known as wine tourism, this category focuses on exploring wineries, vineyards, and wine regions. Grape wine tourism offers visitors the opportunity to learn about the history, production methods, and cultural significance of wine in a particular area. Wine tastings, vineyard tours, and wine festivals provide a comprehensive experience, highlighting the unique flavors and traditions of the region's wines. Similarly, coffee tourism focuses on the cultivation, production, and consumption of coffee, offering travelers insights into the local coffee culture and heritage.
4. **Food Festivals and Events:** Food festivals and events celebrate the culinary heritage of a region, offering attendees the chance to sample a wide variety of dishes and beverages. These events often feature local specialties, cooking demonstrations, culinary contests, and opportunities to engage with chefs and artisans. Food festivals play a crucial role in promoting regional cuisine and attracting visitors keen on exploring the diverse culinary offerings of the destination.

ELEMENTS IMPACTING CULINARY TOURISM

Culinary tourism plays a pivotal role in driving the growth of the tourism industry, offering travelers the opportunity to enrich their culinary experiences while exploring new destinations. A recent study has identified several key factors that influence food and beverage consumption during culinary tourism experiences. These factors include local festivals, cultural influences, food and drink quality, sustainability practices, pricing strategies, and the expertise and involvement of hotel and restaurant staff, chefs, and owners. Effective collaboration between local government, businesses, and visitors is also crucial for the development of culinary services and ensuring client satisfaction.

Companies involved in culinary tourism strive to provide guests with unique dining experiences and exceptional services at reasonable prices. When these requirements are met, guests are satisfied and delighted, contributing positively to the success of food tourism endeavors. Conversely, inadequate attention to these factors can result in guest dissatisfaction and adversely impact culinary tourism experiences. Therefore, the culinary tourism sector invests in market research and surveys to develop effective plans and strategies for enhancing guest satisfaction and overall experience.

LITERATURE REVIEW

The study by examined the reasons behind local food networks' success or failure in working with regional tourism. The primary focus of the piece was on regional food entrepreneurs and their collaboration with the region's tourism industry. The study concentrated on how local food networks and tourism behave and think, and whether or not their divergent theories might account for the relationship between the expansion of local food concepts and local tourism.

RESEARCH METHODOLOGY

For data collection 10 different cities were covered which include Shimla, Manali, Amritsar, Chandigarh, Jaipur, Agra, Varanasi, Rishikesh and Haridwar. Non probability convenience technique of sampling was employed by the researcher where the probability of selection of each sampling element was not known (Alder & Clark, 2006). The researcher was able to approach 432 foreign tourists successfully who filled the questionnaire completely. All the respondents were adult and had tried Indian cuisine during their visit.

RESULT AND ANALYSIS

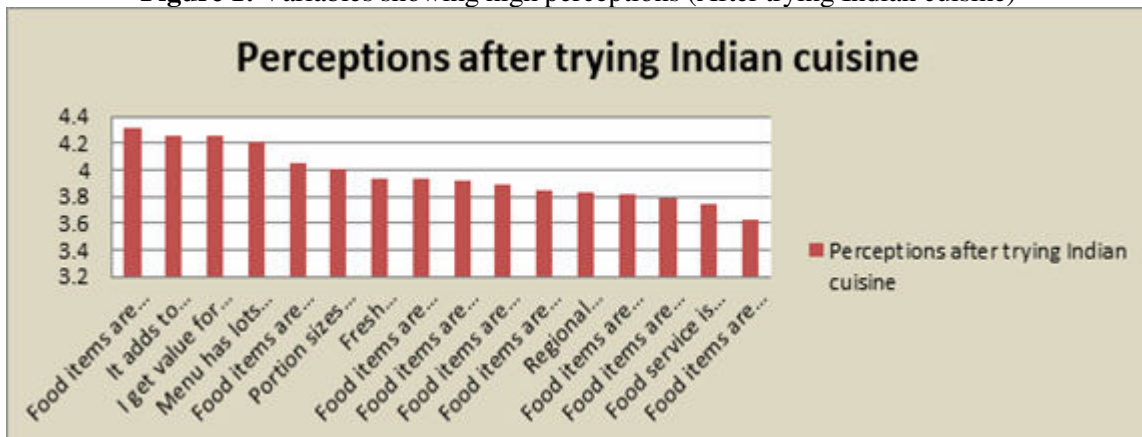
In order to prove our 1st hypothesis a paired a paired t-test was applied to determine the significant difference in perception of foreign tourist regarding Indian cuisine before and after trying it. The mean score of perception of foreign tourist is presented in table 1 displaying the statistical inference in the form of mean, standard deviation, perception gap, t- value, sig. value (2 tailed).

Table 1: Perceptions of foreign tourists before and after trying Indian cuisine

Sr. No	Attributes of Perception	Perception before trying		Perception after trying		Gap	t-Value	Sig.(2 tailed)
		Mean	SD	Mean	SD			
1	Fresh ingredients are used in food preparation	3.89	2.86	3.93	0.809	0.046	0.329	.742**
2	Food items are tasty and richly flavored	3.95	0.823	4.31	0.700	0.365	9.078	.000

3	Food items are healthy and safe to consume	3.39	0.890	3.85	0.837	0.453	9.238	.000
4	Food items are easy to digest	3.33	0.870	3.63	0.880	0.293	5.982	.000
5	Food items are visually attractive / colorful	3.87	0.834	4.05	0.832	0.178	3.811	.000
6	Food items are well garnished / well presented	3.66	0.790	3.89	0.867	0.226	4.871	.000
7	Food items are convenient to consume	3.53	0.827	3.81	0.816	0.280	6.240	.000
8	Portion sizes are sufficient	3.62	0.857	4.00	0.945	0.372	7.142	.000
9	Menu has lots of variety	3.93	0.906	4.21	0.856	0.28	5.755	.000
10	Regional dishes are included in the menu	3.71	0.906	3.82	0.982	0.111	2.066	.039
11	Food items are traditional and ethnic	3.78	0.787	3.91	0.907	0.127	2.856	.004
12	Food items are authentic and exotic	3.72	0.882	3.79	0.969	0.064	1.307	.192**
13	Food items are moderately priced	3.75	0.937	3.93	0.975	0.189	3.563	.000
14	Food service is quick and efficient	3.54	0.835	3.74	0.977	0.199	3.869	.000
15	I get value for money paid	3.85	0.817	4.25	0.721	0.402	9.483	.000
16	It adds to positive food experience	3.93	0.807	4.26	0.713	0.324	8.012	.000
	Overall mean	3.72	0.977	3.96	0.862	0.244		

Figure 1: Variables showing high perceptions (After trying Indian cuisine)



Perceptions of Foreign Tourist after Trying Indian Cuisine

The data displayed in figure 1 shows that the tourists have high perception about the “rich taste and flavor of food items (4.31)”, followed by “positive food experience (4.26)”, “value for money (4.25)”, “variety in menu (4.21)”, “visual attractiveness (4.05)”, “sufficient portion sizes (4.00)”, “use of fresh ingredients (3.93)” and “moderate price of food items (3.93)”. Similarly foreign tourists have moderate perception about whether food is “traditional and ethnic (3.91)”, ‘well

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Table 2: Residual statics for multiple Regression

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0152	4.7316	3.9117	.31424	432
Residual	-1.83884	1.02998	.00000	.40241	432
Std. Predicted Value	-2.853	2.609	.000	1.000	432
Std. Residual	-4.564	2.557	.000	.999	432
a. Dependent Variable: Cuisine Attractiveness					

Analysis of standard residuals (table 2) for outliers show that the minimum value of standard residual is above - 3 and maximum value is below 3 indicating that the data had no outliers. After checking and meeting the assumptions successfully a linear multiple regression was applied.

The regression equation used for analysis:

$$\text{Cuisine Attractiveness} = \alpha + (\beta_1 \times \text{Attributes of Indian cuisine})$$

Table 3: Linear regression between Cuisine Attractiveness and Attributes of Indian cuisine

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.615 ^a	.379	.377	.40287	1.700
Predictors: (Constant), Attributes of Indian cuisine					
Dependent Variable: Cuisine Attractiveness					

Data displayed in table 3 indicated that $R^2 = .379$ which means that 37.9 % of the total variance in the Cuisine

Attractiveness is explained by the attributes of Indian cuisine in the model.

Table 4: ANOVA for linear regression between Cuisine Attractiveness and Attributes of Indian cuisine

MODEL		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.560	1	42.560	262.220	.000 ^b
	Residual	69.792	430	.162		
	Total	112.353	431			

Dependent Variable: Cuisine Attractiveness Predictors: (Constant), Attributes of Indian cuisine

As shown in table 4 the F-statistic is 262.220 with p-value 0.000 which indicates that the model is statistically significant.

Table 5: Predictors of Cuisine Attractiveness in significant regression model

Model	B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	.660	.202		3.274	.001
	Attributes of Indian cuisine	.823	.051	.615	16.193	.000

By looking at the unstandardized coefficients in table 5, it is concluded that every one unit increase in the independent variable results in .823 unit increase in the dependent variable while keeping other variables constant. Looking into the standardized coefficients, attributes of Indian cuisine had .615 unit influences on Cuisine Attractiveness. The p-value (0.001) of the slope coefficients of t statistics (3.274) is less than 5% significance level which means that significant relationship has been observed between the attributes. Further for attributes of Indian cuisine p-value is significant (<0.05), which means there is significant relationship between Indian cuisine attributes and the Cuisine Attractiveness. Hence our alternate hypothesis (H12) is accepted.

DESTINATION MARKETING AND CULINARY TOURISM

Culinary tourism involves deliberately exploring the food traditions of cultures different from one's own, encompassing the consumption, preparation, and presentation of dishes from various culinary systems. It encompasses a wide range of themes, including dining experiences, wine and food festivals, culinary tours, cooking classes, vineyard and distillery tours, and visits to food destinations. These activities are often

integrated into broader tourism experiences, such as culinary walks, food truck gatherings, and other food-focused events, adding a luxurious dimension to the overall travel experience.

One of the remarkable aspects of culinary tourism is its ability to seamlessly integrate social, cultural, and environmental elements into a unified experience. Food trails, excursions, restaurants, and food festivals all contribute to showcasing the unique flavors and cultural norms of a region, enriching the tourist experience and fostering a deeper connection with the destination.

ECOSYSTEMS OF TOURISM

The concept of a tourism destination is evolving, encompassing both tangible (physical) and intangible (virtual) dimensions of interaction between hosts and visitors, influenced by ecological and systems theories. At the core of the tourism ecosystem lies the relationship between hosts and guests, which manifests through various interactions, whether face-to-face or mediated by technology. These interactions align with symbolic interactionist theories, suggesting that individuals' perceptions are shaped by their interactions, including those on social media platforms.

Additionally, cultural ecosystems emphasize the significance of culture and heritage as added value to tourism experiences, such as festivals, gastronomic events, and wine regions in countries like Australia and New Zealand. The construction of meaning in these experiences influences travelers' decisions and behaviors within destinations.

CONCLUSION

The tourism industry should take into account a number of factors, including flavor, food type, nutrition, and scent, when offering culinary services. By providing basic information on food tradition so that people can learn about the regional history and tradition of particular locations, it can highlight traditional and local products to draw in more tourists and ensure customer satisfaction. Tourists are willing to pay a premium for high-quality meals since they will travel long distances. Culinary services should be helpful over traditional companies, local companies, and agricultural products. It contributes to a region's economic development. Every tourist spot has a unique history and culture. Tourists remember the flavor of a cuisine they haven't had in a long time, adding to their delight of the trip. Without specific details or context about the work on culinary travel industry consequences in India, I can provide a general conclusion based on potential outcomes. The culinary travel industry in India holds significant consequences, both positive and negative. On the positive side, it contributes to cultural exchange, economic growth, and tourism promotion. Culinary tourism has the potential to showcase the diverse and rich tapestry of Indian cuisine, attracting food enthusiasts from around the world.

However, there may also be challenges and consequences. Over-commercialization and cultural appropriation could dilute the authenticity of local cuisines. Additionally, there might be environmental impacts, such as increased waste generation and strain on local resources due to the influx of tourists. Effective management and sustainable practices are crucial to mitigate potential negative consequences. Collaboration between the government, local communities, and the tourism industry can help strike a balance between promoting culinary tourism and preserving the cultural and environmental integrity of the regions involved. In conclusion, the consequences of work on the culinary travel industry in India are multifaceted. With thoughtful planning, responsible tourism practices, and community involvement, the culinary travel sector has the potential to bring positive economic and cultural outcomes to India while addressing potential challenges.

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EDGE COMPUTING AND ITS IMPACT ON IOT (INTERNET OF THINGS) APPLICATIONS

Divya Dhyani¹, Manoj Kumar Jha² and Manoj Kumar³¹Associate Professor, ³Assistant Professor, Department of IT &CS, ITM Dehradun, Uttarakhand²Professor, Department of Management, I.T.S, Ghaziabad**ABSTRACT**

With the proliferation of Internet of Things (IoT) devices across various domains, there arises a pressing need for efficient data processing and management solutions. Edge computing has emerged as a promising paradigm to address the challenges posed by traditional cloud-centric architectures in IoT deployments. This paper presents a comprehensive review and analysis of the impact of edge computing on IoT applications.

The paper begins by elucidating the key concepts of IoT and edge computing, highlighting their interplay and significance in modern technological ecosystems. It then delves into the specific advantages that edge computing offers to IoT applications, such as reduced latency, improved scalability, enhanced security, and bandwidth optimization. Moreover, the paper examines the architectural components and deployment models of edge computing systems tailored for IoT environments.

Furthermore, the paper investigates real-world use cases and case studies across diverse domains, including smart cities, healthcare, industrial automation, and transportation, to underscore the tangible benefits and challenges associated with integrating edge computing into IoT ecosystems. It analyzes the performance metrics and outcomes achieved through the adoption of edge computing solutions in these contexts.

Additionally, the paper discusses the emerging trends and future directions in edge computing for IoT, encompassing topics such as edge AI, distributed machine learning, federated learning, and blockchain integration. It also addresses the ongoing research efforts and open challenges in this rapidly evolving field, paving the way for further exploration and innovation.

INTRODUCTION

Edge computing refers to a distributed computing paradigm where data processing is performed closer to the source of data generation, typically at the "edge" of the network. Traditional cloud computing models send data to centralized data centers for processing and analysis. However, with edge computing, data processing occurs locally on devices or nearby edge servers, reducing latency and bandwidth usage. Edge computing enables real-time processing and analysis of data, making it well-suited for applications requiring low latency and high responsiveness. This approach also reduces the need to transmit large volumes of data to centralized servers, making it more efficient and scalable for IoT deployments.

Internet of Things (IoT):

The Internet of Things (IoT) refers to a network of interconnected devices embedded with sensors, software, and other technologies that enable them to collect and exchange data over the Internet. These devices can range from everyday objects such as household appliances and wearable devices to industrial equipment and infrastructure components. IoT systems allow for the seamless integration of the physical and digital worlds, enabling remote monitoring, control, and automation of various processes. IoT applications span across multiple industries, including healthcare, transportation, agriculture, manufacturing, and smart cities, among others. The proliferation of IoT devices has led to vast amounts of data being generated, driving the need for efficient data processing and analysis solutions such as edge computing.

The relationship between edge computing and IoT (Internet of Things) is symbiotic, with each concept enhancing the capabilities and effectiveness of the other.

- 1. Data Processing Proximity:** Edge computing brings computational power closer to the data source, which is crucial for IoT devices. IoT devices generate massive amounts of data, often in real time, through sensors and other embedded technologies. By processing this data at the edge of the network, near where it is generated, edge computing reduces latency and minimizes the need to transmit data back and forth to centralized cloud servers. This proximity improves the responsiveness and efficiency of IoT applications, enabling faster decision-making and real-time responses.
- 2. Bandwidth Efficiency:** IoT devices typically operate within constrained network environments, where bandwidth may be limited or costly. Transmitting large volumes of data from IoT devices to centralized cloud servers for processing can strain network resources and lead to congestion. Edge computing alleviates this burden by processing data locally, thus reducing the volume of data that needs to be transmitted over the

network. This improves bandwidth efficiency and ensures that critical data can be prioritized and transmitted promptly, without overwhelming the network.

3. **Enhanced Reliability and Resilience:** Edge computing enhances the reliability and resilience of IoT applications by decentralizing data processing and decision-making. In traditional cloud-centric IoT architectures, reliance on a centralized cloud infrastructure creates a single point of failure. Edge computing distributes computational tasks across multiple edge devices and servers, reducing the risk of system failures and improving fault tolerance. Even if connectivity to the cloud is lost, edge devices can continue to operate autonomously and make localized decisions based on pre-defined rules or machine learning algorithms.
4. **Real-time Insights and Decision-making:** The combination of edge computing and IoT enables real-time insights and decision-making, which is critical for time-sensitive applications such as industrial automation, autonomous vehicles, and healthcare monitoring. By processing data at the edge, IoT devices can analyze sensor data in real time and generate actionable insights without relying on round-trip communication with centralized servers. This enables faster response times and allows organizations to extract value from IoT data more efficiently, leading to improved operational efficiency, productivity, and customer satisfaction.

Edge computing and IoT are complementary technologies that work together to unlock new capabilities and possibilities for various industries and applications. By leveraging the proximity, efficiency, reliability, and real-time processing capabilities of edge computing, IoT deployments can overcome many of the challenges associated with traditional cloud-centric architectures and realize the full potential of connected devices and data-driven insights.

Growth and importance of IoT applications in various sectors:

The growth and importance of IoT (Internet of Things) applications have been significant across various sectors, revolutionizing industries and enabling transformative changes in how businesses operate and deliver value.

1. Healthcare:

- a. **Remote Patient Monitoring:** IoT devices such as wearable health trackers and remote monitoring systems enable healthcare providers to remotely monitor patients' vital signs, medication adherence, and overall health status in real-time.
- b. **Smart Hospitals:** IoT sensors and devices are used to optimize hospital operations, track medical equipment, manage inventory, and improve patient care through predictive maintenance and personalized treatment plans.
- c. **Telemedicine:** IoT facilitates telemedicine by connecting patients with healthcare professionals remotely, enabling virtual consultations, diagnosis, and treatment, particularly beneficial in rural or underserved areas.

2. Manufacturing:

- a. **Industrial IoT (IIoT):** IoT devices and sensors deployed on manufacturing equipment and production lines collect real-time data on machine performance, product quality, and process efficiency, enabling predictive maintenance, quality control, and optimization of production workflows.
- b. **Supply Chain Management:** IoT-enabled tracking devices and sensors monitor goods throughout the supply chain, providing real-time visibility into inventory levels, shipment status, and logistics operations, thereby improving supply chain efficiency, transparency, and responsiveness.
- c. **Smart Factories:** IoT enables the creation of smart factories where interconnected machines, robotics, and automated systems communicate and collaborate seamlessly, leading to increased productivity, reduced downtime, and enhanced agility in responding to market demands.

3. Transportation and Logistics:

- a. **Connected Vehicles:** IoT sensors embedded in vehicles collect data on vehicle performance, driver behavior, and road conditions, enabling predictive maintenance, fleet management, and optimization of routes for improved fuel efficiency and safety.
- b. **Smart Transportation Systems:** IoT-enabled traffic management systems, smart parking solutions, and public transportation networks enhance mobility, reduce congestion, and improve urban mobility through real-time monitoring and optimization of transportation infrastructure.
- c. **Supply Chain Visibility:** IoT devices and tracking solutions provide real-time visibility into the movement and location of goods throughout the supply chain, improving inventory management, delivery accuracy, and customer satisfaction.

4. Smart Cities:

- a. **Urban Infrastructure Management:** IoT sensors and connected devices monitor and manage critical infrastructure such as water and energy systems, waste management, and public utilities, leading to more efficient resource allocation, reduced operational costs, and improved sustainability.
- b. **Public Safety and Security:** IoT-enabled surveillance cameras, environmental sensors, and emergency response systems enhance public safety by detecting and responding to incidents such as accidents, crimes, and natural disasters in real time, enabling faster emergency response and disaster management.
- c. **Citizen Services:** IoT applications improve citizen services by providing smart solutions for traffic management, parking, public transportation, waste collection, and environmental monitoring, enhancing the quality of life for residents and visitors.

5. Retail and Consumer Goods:

- a. **Inventory Management:** IoT devices and RFID tags track inventory levels, monitor product movements, and prevent stockouts, optimizing inventory management processes and improving product availability and shelf visibility.
- b. **Personalized Shopping Experience:** IoT-enabled beacons, sensors, and smart shelves deliver personalized shopping experiences by providing real-time product recommendations, location-based promotions, and seamless checkout options, enhancing customer engagement and loyalty.
- c. **Supply Chain Optimization:** IoT solutions improve supply chain visibility, demand forecasting, and logistics management, enabling retailers to streamline operations, reduce costs, and respond more effectively to changing consumer preferences and market trends.

IoT applications continue to drive innovation, efficiency, and competitiveness across diverse sectors, offering immense potential for improving processes, enhancing decision-making, and delivering value to businesses, governments, and society. As IoT technologies mature and adoption rates increase, we can expect further advancements and transformative impacts in various domains, shaping the future of interconnected and intelligent systems.

Overview of Edge Computing:

Edge computing is a distributed computing paradigm that brings computational power closer to the data source, enabling real-time data processing and analysis at the "edge" of the network, closer to where data is generated and consumed. Traditional cloud computing models send data to centralized data centers for processing and analysis. However, with edge computing, data processing occurs locally on devices or at nearby edge servers, before being sent to centralized cloud servers, if necessary.

Breakdown of the concept of edge computing:

1. **Proximity to Data Source:** Edge computing acknowledges that not all data needs to be processed in centralized data centers. Instead, it recognizes that processing data closer to the source of generation can lead to faster insights and more immediate actions. This is particularly important for applications requiring low latency, such as autonomous vehicles, industrial automation, and real-time monitoring systems.
2. **Decentralized Architecture:** Unlike traditional cloud computing, which relies on centralized data centers, edge computing adopts a decentralized architecture. Edge devices, such as sensors, actuators, gateways, and edge servers, form a distributed network that processes data locally. This distributed approach reduces the need to transmit large volumes of data over the network to centralized servers, leading to lower latency and reduced bandwidth usage.
3. **Real-Time Processing:** One of the key advantages of edge computing is its ability to perform real-time data processing and analysis. By processing data locally at the edge, organizations can extract actionable insights and make time-sensitive decisions without relying on round-trip communication with centralized servers. This is particularly beneficial for applications requiring immediate responses, such as predictive maintenance, emergency response systems, and IoT devices.
4. **Scalability and Flexibility:** Edge computing offers scalability and flexibility by distributing computational tasks across edge devices and servers. This allows organizations to scale their computing resources dynamically based on workload demands and application requirements. Additionally, edge computing enables organizations to deploy customized edge solutions tailored to specific use cases and operational needs, providing greater flexibility and agility in deploying and managing edge infrastructure.

- 5. Security and Privacy:** Edge computing enhances security and privacy by processing sensitive data locally and minimizing the need to transmit it over the network. By keeping data within the confines of the edge network, organizations can reduce the risk of unauthorized access, data breaches, and privacy violations. Additionally, edge computing enables organizations to implement security measures such as encryption, access controls, and anomaly detection at the edge, further enhancing data protection.

Edge computing represents a paradigm shift in how data is processed, analyzed, and acted upon in distributed computing environments. By bringing computational capabilities closer to the data source, edge computing offers numerous benefits, including reduced latency, improved reliability, enhanced security, and greater flexibility, making it well-suited for a wide range of applications across industries. - Discuss how edge computing differs from traditional cloud computing.

Examples of edge computing architectures and technologies:

- 1. Fog Computing:** Fog computing extends the principles of cloud computing to the edge of the network, enabling data processing and analysis closer to the data source. It involves deploying lightweight computing resources, such as edge servers and gateways, at the network edge to perform tasks like data filtering, aggregation, and pre-processing. **Example:** Cisco's fog computing architecture, which incorporates fog nodes (edge devices), fog computing infrastructure, and fog applications to support various IoT and edge computing use cases in industries such as manufacturing, transportation, and smart cities.
- 2. Edge Gateway:** An edge gateway is a hardware device that acts as an intermediary between IoT devices/sensors and the cloud or data center. It performs data aggregation, protocol translation, and security functions at the network's edge, reducing the volume of data transmitted to centralized servers and improving latency. **Example:** Dell Edge Gateway series, which offers a range of industrial-grade gateways designed to collect, process, and analyze data from IoT devices in remote or harsh environments, enabling edge computing capabilities for industrial automation, energy management, and asset monitoring applications.
- 3. Multi-access Edge Computing (MEC):** Multi-access Edge Computing (MEC), also known as Mobile Edge Computing, brings cloud computing capabilities to the edge of cellular networks, enabling low-latency, high-bandwidth services for mobile users and IoT devices. It leverages edge servers deployed at cellular base stations or aggregation points to process and cache data locally. **Example:** Nokia's Multi-access Edge Computing platform, which enables mobile operators to deploy edge computing services within their networks, delivering ultra-low latency and high-throughput applications for use cases such as augmented reality, video streaming, and connected vehicles.
- 4. Edge Computing Platforms:** Edge computing platforms provide software frameworks and tools for developing, deploying, and managing edge applications and services. These platforms offer capabilities such as edge orchestration, data analytics, security, and device management, facilitating the development of scalable and efficient edge computing solutions. **Example:** Microsoft Azure IoT Edge, a platform that extends Azure cloud services to edge devices, enabling developers to deploy and manage containerized workloads on edge devices, perform real-time analytics, and integrate with Azure IoT services for end-to-end IoT solutions.
- 5. Serverless Edge Computing:** Serverless edge computing architectures enable developers to deploy and run event-driven functions or microservices at the edge of the network without provisioning or managing servers. These functions execute in response to events triggered by IoT devices or data streams, providing on-demand compute resources for processing and responding to data in real time. **Example:** AWS Lambda@Edge, a serverless compute service offered by Amazon Web Services (AWS) that enables developers to deploy custom code to AWS edge locations, allowing them to process and transform data at the edge of the network, closer to end-users and IoT devices.
- 6. Edge AI (Artificial Intelligence):** Edge AI refers to the deployment of AI algorithms and models directly on edge devices or edge servers, enabling real-time inference and decision-making without relying on centralized cloud resources. Edge AI enables efficient processing of large volumes of sensor data, enabling tasks such as object detection, anomaly detection, and predictive maintenance at the edge. **Example:** NVIDIA Jetson series, which provides embedded AI computing platforms for edge devices, enabling developers to deploy AI models for image recognition, natural language processing, and robotics applications in edge computing environments.

These examples represent just a subset of the diverse architectures and technologies available for implementing edge computing solutions. Depending on the specific requirements and constraints of a given use case or

industry, organizations may adopt different combinations of edge computing architectures and technologies to meet their needs for low latency and efficient data processing at the network edge.

Challenges in IoT Applications:

Relying solely on cloud computing for IoT applications can introduce several limitations and challenges, which may impact the effectiveness, efficiency, and scalability of IoT deployments. Here are some of the key limitations and challenges faced by IoT applications when relying solely on cloud computing:

1. **Latency:** Latency refers to the delay between data being generated by IoT devices and the corresponding response or action triggered by cloud-based applications. Transmitting data to centralized cloud servers for processing can introduce significant latency, especially for time-sensitive applications such as industrial automation, autonomous vehicles, and real-time monitoring systems. High latency can impair the responsiveness and effectiveness of IoT applications, leading to delays in decision-making and potential performance issues.
2. **Bandwidth Usage:** Transmitting large volumes of data from IoT devices to centralized cloud servers consumes network bandwidth, which may be limited or costly, particularly in remote or constrained environments. This can lead to network congestion, increased latency, and higher operational costs for organizations managing IoT deployments. Additionally, transmitting unnecessary data to the cloud can strain network resources and reduce the efficiency of IoT applications, especially for use cases where only a subset of data is relevant for analysis or action.
3. **Reliability and Resilience:** Dependence on cloud-based infrastructure for data processing and analysis introduces a single point of failure, where disruptions or outages in cloud services can impact the availability and reliability of IoT applications. Connectivity issues, network downtime, or maintenance activities affecting cloud servers can lead to service disruptions, data loss, and operational downtime for IoT deployments. This lack of resilience can be particularly problematic for mission-critical IoT applications requiring continuous operation and high availability.
4. **Security and Privacy:** Transmitting sensitive data from IoT devices to centralized cloud servers raises concerns about data security and privacy. Data transmitted over the network may be vulnerable to interception, eavesdropping, or unauthorized access, posing risks to the confidentiality, integrity, and authenticity of IoT data. Additionally, storing sensitive data in centralized cloud repositories increases the potential impact of data breaches or cyber-attacks, leading to data loss, regulatory compliance issues, and reputational damage for organizations.
5. **Scalability and Cost:** Cloud computing services typically operate on a pay-as-you-go model, where organizations pay for the computational resources and storage capacity consumed by their IoT applications. As IoT deployments scale up to accommodate growing numbers of connected devices and increasing data volumes, cloud computing costs can escalate rapidly, leading to unpredictable expenses and budgetary constraints. Additionally, provisioning and managing cloud resources for IoT applications may require specialized expertise and resources, further increasing operational overheads and complexity.
6. **Offline Operation:** IoT applications relying solely on cloud computing may struggle to operate offline or in environments with intermittent or unreliable network connectivity. Lack of connectivity to cloud servers can disrupt data transmission, prevent real-time processing, and limit the functionality of IoT devices. This can be problematic for IoT deployments in remote or mobile environments, where network coverage may be limited or unavailable, and where autonomous operation or local decision-making is required.

Addressing these limitations and challenges requires a holistic approach that leverages edge computing capabilities to complement cloud-based IoT architectures. By distributing computational tasks closer to the edge of the network, edge computing can mitigate latency, reduce bandwidth usage, enhance reliability, improve security, and enable offline operation for IoT applications, leading to more efficient, responsive, and scalable deployments.

Role of Edge Computing in Addressing IoT Challenges:

The role of edge computing in addressing challenges faced by IoT applications is significant, offering solutions to several limitations encountered when relying solely on cloud computing. Here's how edge computing helps overcome these challenges:

1. Reduced Latency:

Challenge: Latency, or the delay between data transmission and processing, is a critical issue for real-time IoT applications. Sending data to distant cloud servers for processing can introduce significant latency, which may be unacceptable for time-sensitive applications like industrial automation or autonomous vehicles.

Role of Edge Computing: Edge computing brings computational resources closer to the data source, reducing the distance data needs to travel and thereby minimizing latency. By processing data locally at the edge, near the point of generation, edge computing enables real-time responses and faster decision-making without relying on round-trip communication with centralized cloud servers.

2. Bandwidth Constraints:

Challenge: IoT devices often operate within network environments with limited bandwidth, particularly in remote or resource-constrained locations. Transmitting large volumes of data to centralized cloud servers for processing can strain network resources and lead to congestion.

Role of Edge Computing: Edge computing reduces the volume of data transmitted over the network by processing data locally at the edge. By filtering, aggregating, and pre-processing data at the edge of the network, edge computing minimizes the need for bandwidth-intensive communication with centralized cloud servers, thus alleviating bandwidth constraints and improving network efficiency.

3. Reliability and Resilience:

Challenge: Reliance on centralized cloud infrastructure creates a single point of failure, exposing IoT applications to the risk of service disruptions or downtime in case of network outages or connectivity issues.

Role of Edge Computing: Edge computing enhances reliability and resilience by distributing computational tasks across edge devices and servers. Even if connectivity to the cloud is lost, edge devices can continue to operate autonomously and make localized decisions based on pre-defined rules or machine learning algorithms. This decentralized architecture reduces the risk of system failures and improves fault tolerance, ensuring the continuous operation of IoT applications.

4. Privacy and Security:

Challenge: Transmitting sensitive IoT data to centralized cloud servers for processing raises concerns about data privacy, security, and compliance with regulatory requirements. Centralized storage and processing of data increase the risk of unauthorized access, data breaches, and privacy violations.

Role of Edge Computing: Edge computing enhances privacy and security by processing sensitive data locally at the edge, minimizing the need to transmit it over the network. By keeping data within the confines of the edge network, edge computing reduces the attack surface and mitigates the risk of unauthorized access and data breaches. Additionally, edge computing enables organizations to implement security measures such as encryption, access controls, and anomaly detection at the edge, further enhancing data protection.

Overall, edge computing plays a crucial role in addressing the challenges faced by IoT applications, offering solutions to issues such as latency, bandwidth constraints, reliability, resilience, privacy, and security. By bringing computational capabilities closer to the data source, edge computing enables efficient and responsive IoT deployments, unlocking new possibilities for real-time data processing, analysis, and decision-making at the network edge.

CONCLUSION

This research paper provides valuable insights into the transformative potential of edge computing on IoT applications, offering a comprehensive understanding of its implications for various industries and outlining avenues for future research and development. It has provided a comprehensive overview of the impact of edge computing on IoT applications. Through an exploration of key concepts, advantages, architectures, deployment models, real-world use cases, and emerging trends, it has become evident that edge computing holds immense potential to revolutionize the way IoT systems operate and deliver value across diverse domains.

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THE NEGATIVE CONSEQUENCES OF FRUSTRATION FOR NEWCOMER ACTORS IN FILM AND TELEVISION

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ABSTRACT

Stars in the business have risen from Bollywood, including Ishaan Khatter, Sara Ali Khan, Janhvi Kapoor, Tara Sutaria, Ananya Panday, Siddhant Chaturvedi, Tripti Dimri, and Pranutan Bahl. But barriers like nepotism, typecasting, opportunity scarcity, unstable finances, and exploitation await newcomers. While typecasting might result in responsibilities that are restricted, family relationships sometimes provide greater access to resources and opportunities. A lack of official instruction and direction may also impede development. Feelings of disillusionment, a lack of will to advance, and job stagnation may all result from frustration. Frustration may lead to mental health issues including stress, anxiety, despair, and exhaustion. Actors' inability to grasp chances might also be hampered by a loss of confidence and poor judgement. Actors may address discontent by keeping a positive outlook, setting reasonable goals, asking for help from a network of allies, taking care of themselves, concentrating on the things they can control, learning from failure, persevering, and being adaptable and receptive. Actors may overcome unhappiness by getting help from professionals, cultivating self-compassion, minimising negative self-talk, building a network of support, building resilience, continuing to work in their field, maintaining work-life balance, and acknowledging their accomplishments.

Keywords: Ishaan Khatter, Sara Ali Khan, Janhvi Kapoor, Tara Sutaria, Ananya Panday, Siddhant Chaturvedi, Tripti Dimri, and Pranutan Bahl

OVERVIEW

In January 2022, when I last updated you, a number of up-and-coming performers were becoming big stars in Bollywood. These were a few of the recent arrivals that were becoming well-known [1]:

Ishaan Khatter - Known for his acting prowess and charisma on film, Ishaan made his acting debut in "Beyond the Clouds" and then garnered further attention in "Dhadak." He is regarded as one of Bollywood's most promising young actors.

Sara Ali Khan - Sara is the daughter of actors Saif Ali Khan and Amrita Singh. She made her Bollywood debut in "Kedarnath" and then went on to become successful with "Simmba." Her charm, skill, and grounded nature won her a lot of fans.

Janhvi Kapoor - The daughter of producer Boney Kapoor and late actress Sridevi, Janhvi made her film debut in "Dhadak." She has since gained recognition for her on-screen persona and is drawing interest for her future endeavours.

Tara Sutaria - known for both her acting and singing prowess—made her Bollywood debut in "Student of the Year 2" and went on to further display her brilliance in "Marjaavaan."

Ananya Panday - Known as one of the industry's most promising young talents, Ananya made her debut in "Student of the Year 2" and has since garnered recognition for her roles in films such as "Pati Patni Aur Woh" and "KhaaliPeeli."

Siddhant Chaturvedi - Siddhant became well-known and won several accolades for his portrayal as MC Sher in the film "Gully Boy." Both reviewers and viewers praised his work.

Tripti Dimri - Hailed for her acting prowess and regarded as a rising star in Bollywood—had her screen debut in the Netflix feature "Laila Majnu" and then made an appearance in "Bulbbul."

Pranutan Bahl - the actress Mohnish Bahl's daughter, had her feature debut in "Notebook." Her performance won her praise, and she's anticipated to play bigger parts in the future.

These performers add new energy and variety to the Bollywood business as they embody a new generation of talent. As they continue to leave their impact on Indian film, keep an eye on them.

Issues Newcomer Actor Faces

When trying to make a name for themselves in Bollywood, up-and-coming performers often encounter the following obstacles [1-4]:

Nepotism: The pervasiveness of nepotism in Bollywood is one of the biggest obstacles for newcomers. Entertainers without family links to the business find it difficult to get into the business since actors with family ties often have better access to resources and chances. Bollywood is a very competitive industry, with thousands of aspiring actors fighting for a small number of parts. When it comes to roles in films and TV series, up-and-coming performers have to contend not just with more experienced performers but also with one another.

Typcasting: A lot of newcomers become pigeonholed into certain positions because of their background, looks, or race. Overcoming these preconceptions and demonstrating their range as performers may be rather difficult.

Lack of Opportunities: It may be difficult for beginners to get parts in Bollywood films or TV series, particularly if they have no acting experience or contacts in the business. Casting directors may reject many newbies who struggle to get auditions.

Financial Instability: For newbies in particular, being an actor may be an uncertain and financially unstable career choice. While they wait for their big break, many aspiring actors struggle to make ends meet, which causes stress and volatility in their finances.

Exploitation: Some newbies may be taken advantage of by dishonest casting directors, agents, or production firms. In return for positions, they could be required to work long hours for little or no compensation or face harassment and violence. Actors often encounter rejection, therefore it's important for novices to learn how to take criticism and rejection with stride. Their confidence and self-esteem may suffer when they get unfavourable feedback from industry experts or rejection from auditions.

Absence of Formal Training and Guidance: A lot of newbies join the profession without receiving any official training or direction, which may make it difficult for them to grow as performers and successfully negotiate the complexity of the business. For their professional growth, taking acting lessons or looking for a mentor might be quite important. Despite these difficulties, a lot of aspiring Bollywood performers endure and ultimately achieve success because to their skill, diligence, and fortitude.

The Cause of the New Actor's Annoyance

Actors may get frustrated with their professions for a variety of reasons, regardless of experience level:

Lack of opportunity: The absence of opportunity is one of the main causes of actor discontent. Actors may find it difficult to get assignments that fit their goals and schedules despite their skill and diligence.

Typcasting: When performers are often placed in parts that are predetermined by their look, race, or past performances, it may be quite frustrating for them. This may impede their ability to express themselves creatively and make them feel constrained or underappreciated as artists.

Nepotism and Favouritism: Actors without family or connections to the profession may be irritated by the system's seeming injustice in sectors such as Bollywood, where these practices are common. They could think that criteria other than skill and merit are being used to unjustly distribute chances

.Financial Instability: For beginners who may find it difficult to get steady employment, acting is often an unsteady career choice in terms of money. Financial worries, including having trouble making ends meet or paying your expenses, may exacerbate your stress and aggravation levels.

Rejection: Since actors routinely try out for jobs and may get several rejections before finding a part, rejection is an inevitable part of the business. Actors' confidence and self-esteem might suffer from constant rejection, which can cause annoyance and disappointment.

Creative Differences: When an actor's vision conflicts with a director's, producer's, or writer's, they may get frustrated. Feelings of irritation and discontent with the tasks they are working in might arise from feeling misunderstood or underappreciated creatively.

Lack of gratitude: Some performers may experience frustration due to a lack of acknowledgment or gratitude for their hard work, despite their skill and dedication. This may happen when performers feel unloved or devalued when their performances go unnoticed for accolades or critical praise.

Work-Life Balance: It may be difficult to strike a balance between the demands of an acting profession and one's personal life, particularly when an actor must put in long hours or travel often for work. Actors who believe their personal lives are being ignored or compromised in order to further their professions may get frustrated.

Actors' frustrations are complex and may arise from a range of conditions pertaining to their personal lives, the nature of the business, and the pursuit of their artistic goals.

The Bad Effects of an Actor's Frustration

An actor's dissatisfaction may have serious detrimental effects on both their personal and professional life. These effects can include [5]:

Career Stagnation: Being frustrated may result in feelings of disillusionment and a lack of drive to go after chances or further one's skill. Actors may struggle to develop or progress in their professions as a consequence, leading to a situation known as career stagnation.

Mental Health Problems: An actor's mental health may suffer from stress, anxiety, depression, and other psychological problems as a result of ongoing disappointment and frustration. Burnout may be made worse by the industry's unpredictability and the relentless push to achieve.

Relationships Under Stress: Pursuing an acting profession may lead to a lot of stress and uncertainty, which can negatively impact relationships with friends, family, and love partners. Actors who are frustrated might become reclusive, agitated, or emotionally aloof, which can cause arguments and damaged relationships with family members.

Financial Instability: Actors who struggle to get continuous employment or make a decent income may experience financial stress and instability as a result of frustration and professional losses. This may lead to problems paying your payments, debt accumulation, and a feeling of unpredictability about your finances.

Negative Coping techniques: When faced with stress, anger, or disappointment, some performers may resort to negative coping techniques like drug addiction or harmful behaviours. These actions may make mental health conditions worse and make it more difficult for them to advance in their employment.

Loss of Confidence: An actor's confidence and self-esteem may be damaged by repeated rejection and disappointment, which makes it harder for them to trust in their skills or go after fresh possibilities. This lack of confidence has the potential to spiral out of control, increasing their dissatisfaction and decreasing their odds of success.

Missed Possibilities: An actor's judgement may be impaired by frustration, making it difficult for them to see or seize potential fresh possibilities. As a consequence, they can pass up opportunities to further their professions, form new connections, or show off their skills to a larger audience.

Professional Reputation: An actor's connections within the business and their professional reputation may suffer if they openly express their dissatisfaction or hostility. Actors having a reputation for being tough or unprofessional may find it difficult to deal with casting directors, producers, and other industry experts, which would further reduce their chances of success.

In general, an actor's dissatisfaction may have detrimental repercussions on both their personal and professional well-being. For this reason, it is critical that actors seek help, engage in self-care, and create healthy coping mechanisms in order to deal with the demands of the business.

How to Deal with Getting Angry

It may be difficult to deal with dissatisfaction as a novice actor in films and television, but there are a few techniques that might be useful [6-9]:

Keep an Upbeat Attitude: It's critical to keep an upbeat attitude despite failures and rejection. Remind yourself that success in the entertainment business often requires tenacity and grit as you concentrate on your advantages and acknowledge little accomplishments.

Establish Achievable objectives: Make sure your objectives are realistic and concentrate on moving towards them with little, manageable actions. To get experience and exposure, this might include going to acting workshops, networking gatherings, or doing small-part auditions.

Seek Support: Encircle yourself with a network of mentors, friends, family, and other performers who are sympathetic to your struggles. Count on them for moral support, guidance, and emotional assistance when things become tough.

Practice Self-Care: Give self-care activities like exercise, meditation, hobbies, or quality time with loved ones top priority in order to take care of your physical and emotional health. Remaining strong in the face of adversity requires effective stress management and a good work-life balance.

Concentrate on What You Can Influence: Rather of focusing on circumstances that are out of your control, concentrate on the areas of your career that you can manage, such developing new skills, forming connections, and looking for possibilities.

Learn from Rejection: Take rejection as a chance for personal development and education rather than as a reflection of your value as an actor. Consider criticism positively, consider your areas for improvement, and use rejection as inspiration to keep going.

Remain Persistent: Perseverance and tenacity are typically necessary for success in the entertainment business. In spite of challenges or disappointments, never stop practicing your profession, networking, and going to auditions. Always keep in mind that every opportunity, including auditions, is a chance for you to develop as an actor.

Maintain Flexibility and an Open Mind: Remain receptive to investigating other avenues and prospects within the sector. It's possible that your career won't always go in a straight line. To overcome unforeseen obstacles and take advantage of new chances, you need be adaptive and flexible.

Newcomer performers may more effectively handle the difficulties of breaking into the film and television industries and eventually work towards realising their objectives and aspirations by putting these techniques into practice and maintaining their resilience in the face of setbacks.

CONCLUSION

For actors to overcome the detrimental effects of frustration, self-awareness, resilience, and proactive measures to address underlying problems are necessary. The following techniques may assist performers in overcoming the detrimental effects of frustration:

Seek Professional Assistance: It's critical to get treatment from a licenced mental health professional if dissatisfaction is causing serious mental health problems like anxiety or depression. Therapy may provide a secure setting for addressing underlying feelings, creating coping mechanisms, and enhancing resilience.

Practice Self-Compassion: Rather of punishing yourself or being hard on yourself for being frustrated, learn to be compassionate towards yourself. Be kind, sympathetic, and accepting of yourself; remember that obstacles and disappointments are commonplace on the path to success in the entertainment business.

Concentrate on What You Can Control: Pay attention to the areas of your profession that you can affect rather than obsessing about circumstances that are out of your control. Even if progress is sluggish, set realistic objectives, create a plan of action, and take aggressive measures to achieve them.

Create Healthy Coping Strategies: Determine healthy coping techniques that assist you in constructively handling stress and frustration. This might include engaging in physical activity, practicing mindfulness, finding creative outlets, or spending time with encouraging friends and family.

Reduce Negative Self-Talk: Become aware of your inner monologue and take action against any negative self-talk that erodes your self-worth and confidence. Positive affirmations and reminders of your achievements should take the place of self-defeating ideas.

Create a Supporting Network: Encircle yourself with mentors, friends, family, and other performers who are aware of the difficulties you are experiencing. Talk about your experiences, ask for guidance and inspiration, and give back to others by supporting them.

Develop Resilience: Reframe failures as teaching moments and concentrate on finding solutions rather than wallowing in issues to build resilience. Accept failure as a necessary component of the learning process and turn it into fuel for tenacity and onward motion.

Remain Active and Involved: Continue to be active in your trade by going to workshops, holding auditions, and looking for chances to improve. Take charge of your professional development and actively seek out possibilities that fit your beliefs and aspirations.

Preserve Work-Life Balance: To avoid burnout and overload, place a high priority on self-care and keep a healthy work-life balance. Make time for the pursuits and connections that you find fulfilling and joyful outside of performing.

Celebrate Your Progress: Recognise the strides you've made in your acting career and celebrate your accomplishments, no matter how minor. Honouring achievements and landmarks may improve your mood and strengthen your feeling of self-worth.

Actors may overcome unfavourable outcomes and negotiate the difficulties of the entertainment business with more resilience and well-being by putting these ideas into practice and being proactive in addressing dissatisfaction.

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PEOPLE DEVELOPMENT AND HUMAN DEVELOPMENT INDEX**Dr Atul Mathur and Priyanka Jain**¹Mentor (Director) I Nurture Jagannath Community College Sector-3 Rohini, Delhi²Program Coordinator & Faculty Member Jagannath Community College Sector-3 Rohini, Delhi**ABSTRACT**

People development refers to the ongoing process of enhancing the knowledge, skills, abilities, and overall capabilities of individuals within an organization. It is a strategic approach that aims to empower employees, foster their personal and professional growth, and contribute to their long-term success. People development is crucial for both the individual's career advancement and the overall success of the organization.

The Human Development Index is a composite statistical measure to assess and compare the social and economic development levels of countries. The Human Development Index (HDI) is a composite statistic used to measure and rank countries' overall development levels. It was introduced by the United Nations Development Programme (UNDP) in 1990 as a way to shift the focus of development discussions from purely economic indicators to a more holistic approach that considers social and human factors. The HDI is calculated based on three key dimensions: Health, Education & Standard of living.

In summary, while people development is a broader concept focusing on the holistic growth of individuals, the Human Development Index is a specific metric designed to measure and compare the overall development levels of different countries based on key indicators. Both concepts are crucial for understanding and assessing the well-being and progress of societies. Improving people development contributes positively to the Human Development Index by enhancing the education, health, and economic conditions of a population.

Keywords: Training and Education, Mentorship and Coaching, Career Path Planning, Health, Education & Standard of living.

1: INTRODUCTION**1.1 Background of People Development and Human Development Index**

People development and the Human Development Index (HDI) are both concepts deeply intertwined with the idea of assessing and enhancing human well-being. Here's a brief background on each:

1.2 People Development:

People development refers to the process of enhancing the capabilities, skills, knowledge, and overall well-being of individuals within a society. It encompasses various aspects such as education, healthcare, employment opportunities, social protection, and overall quality of life. People development initiatives aim to empower individuals to reach their full potential and contribute effectively to their communities and societies.

1.3 Key Components of People Development Include:

1.3.1 Education: Access to quality education is fundamental for individual development. This includes both formal education (such as primary, secondary, and higher education) and informal learning opportunities.

1.3.2 Healthcare: Access to healthcare services, including preventive care, treatment for illnesses, and healthcare infrastructure, significantly impacts people's well-being and productivity.

1.3.3 Employment and Economic Opportunities: Access to meaningful employment opportunities, fair wages, and economic resources are essential for individual development and economic growth.

1.3.4 Social Protection: Social safety nets, such as unemployment benefits, pensions, and welfare programs, provide a crucial buffer against economic shocks and help individuals maintain a basic standard of living.

1.3.5 Gender Equality: Ensuring gender equality in access to education, healthcare, employment, and other opportunities is vital for inclusive people development.

1.4: Human Development Index (HDI):

The Human Development Index (HDI) is a composite statistic developed by the United Nations Development Programme (UNDP) to measure and rank countries' levels of human development. It considers three key dimensions of human well-being:

1.4.1 Health: Measured by life expectancy at birth.

1.4.2 Education: Measured by mean years of schooling for adults aged 25 years and expected years of schooling for children of school-entry age.

1.4.3 Standard of Living: Measured by Gross National Income (GNI) per capita, adjusted for purchasing power parity (PPP).

The HDI provides a broader view of development beyond economic indicators like GDP per capita, by considering factors that directly impact people's lives. Countries with higher HDI values are deemed to have higher levels of human development and, theoretically, a better quality of life for their citizens.

1.5 Significance of Understanding Development Beyond Economic Indicators

Understanding development beyond economic indicators is crucial for several reasons:

1.5.1 Comprehensive Well-being: Economic indicators such as GDP per capita only capture a narrow aspect of human well-being. Development encompasses various dimensions such as health, education, social inclusion, environmental sustainability, and political participation. Understanding these broader dimensions provides a more comprehensive picture of people's lives and their overall welfare.

1.5.2 Human Development: Development is fundamentally about improving people's lives, not just increasing wealth. By focusing solely on economic indicators, policymakers may overlook issues related to human development, such as access to education, healthcare, and basic services, which are essential for individuals to lead fulfilling lives.

1.5.3 Inequality: Economic indicators often mask disparities within societies. For instance, a high GDP per capita does not necessarily indicate equitable distribution of wealth or opportunities. Understanding development beyond economic indicators helps identify and address inequalities, fostering more inclusive growth and reducing social tensions.

1.5.4 Environmental Sustainability: Economic growth at the expense of environmental degradation is not sustainable in the long term. Development must be environmentally sustainable to ensure the well-being of current and future generations. By considering environmental indicators alongside economic ones, policymakers can pursue strategies that balance economic growth with environmental preservation.

1.5.5 Social Cohesion: Development is also about fostering social cohesion and stability within societies. Factors such as social trust, inclusion, and justice play a significant role in determining the overall health of a society. Ignoring these factors can lead to social unrest and undermine the sustainability of development efforts.

1.5.6 Resilience and Adaptation: Understanding development beyond economic indicators allows for a more nuanced understanding of a society's resilience and capacity to adapt to various challenges, such as economic shocks, natural disasters, or health crises. By focusing on diverse indicators, policymakers can better prepare for and mitigate the impacts of such events.

1.5.7 Policy Effectiveness: Policymaking guided solely by economic indicators may lead to suboptimal outcomes. By considering a broader range of indicators, policymakers can design more effective and targeted interventions that address the specific needs and challenges faced by different communities.

2: RESEARCH OBJECTIVES

Research objectives for a paper on People Development and Human Development Index (HDI), Here are some potential research objectives for such a paper:

2.1 To analyze the relationship between People Development and Human Development Index across different countries or regions.

2.2 To investigate the components and indicators comprising the Human Development Index and their contributions to overall development.

2.3 To assess the effectiveness of policies and programs aimed at enhancing People Development and its impact on the Human Development Index.

2.4 To identify socio-economic factors that influence People Development and subsequently affect a country's Human Development Index.

2.5 To compare and contrast the concepts of People Development and Human Development Index with other development indices (e.g., Gross Domestic Product per capita) to highlight their strengths and limitations.

3: LITERATURE REVIEW

One author who has extensively written about people development is John C. Maxwell. He is a leadership expert and author known for his numerous books on personal growth, leadership, and development. Some of his notable works that touch upon people development include "The 21 Irrefutable Laws of Leadership," "Developing the Leader Within You," and "The 360 Degree Leader." In these books, Maxwell explores various principles and strategies for developing oneself and others to reach their full potential in both personal and professional realms. John C. Maxwell is a well-known author and leadership expert who has written extensively on personal and professional development. He has outlined various principles and strategies for developing oneself and others in his books and speeches. Some of these principles and strategies include:

- 3:1 The Law of Intentionality:** Maxwell emphasizes the importance of being intentional about personal growth. This involves setting specific goals, seeking out opportunities for learning and improvement, and consistently acting to develop oneself.
- 3:2 The Law of the Mirror:** This principle suggests that individuals must see value in themselves and believe in their potential for growth. Maxwell encourages people to develop a positive self-image and to focus on their strengths rather than dwelling on weaknesses.
- 3:3 The Law of the Lid:** According to Maxwell, each person has a "lid" that limits their potential for success. By continually working to raise this lid through learning, skill development, and personal growth, individuals can unlock greater levels of achievement.
- 3:4 The Law of Influence:** Maxwell teaches that leadership is not about titles or positions, but rather about influence. To develop oneself and others, it's important to focus on building strong relationships, demonstrating integrity, and positively impacting those around you.
- 3:5 The Law of Process:** Personal and professional development is a lifelong journey that requires time, effort, and patience. Maxwell emphasizes the importance of consistently investing in growth, recognizing that progress often comes through small, incremental steps.
- 3:6 The Law of the Inner Circle:** Surrounding oneself with people who inspire, challenge, and support growth is crucial for development. Maxwell advises individuals to build a strong inner circle of mentors, peers, and advisors who can provide guidance and accountability.
- 3:7 The Law of Priorities:** Effective personal development requires clarity about one's priorities and the ability to focus on what truly matters. Maxwell encourages individuals to identify their most important goals and to allocate time and resources accordingly.
- 3:8 The Law of Contribution:** True fulfillment and success come from serving others and making a positive difference in their lives. Maxwell teaches that by focusing on adding value to others, individuals can simultaneously enhance their own growth and development.

These are just a few of the principles and strategies outlined by John C. Maxwell for developing oneself and others. His body of work encompasses a wide range of insights and practical advice for personal and leadership development.

4: METHODOLOGY

Quantitative analysis comparing the Human Development Index (HDI) with various indicators of Parkinson's Disease (PD) could involve several steps and methodologies. Here's a general outline of how you might approach such an analysis:

4.1 Data Collection

Secondary data has been collected from magazine, books, newspaper & internet. The main focus of this research paper is to find out the to the relationship between People Development and Human Development Index across different countries or regions.

5: TRAINING AND EDUCATION

Training and education are vital components of human development, contributing significantly to the enhancement of skills, knowledge, and capabilities of individuals, which in turn impacts their well-being and overall quality of life. The Human Development Index (HDI) is a metric used to assess and compare the levels

of human development across different countries. While education is one of the key components of the HDI, it primarily focuses on indicators such as literacy rates, enrollment ratios, and educational attainment levels.

Here's how training and education contribute to people development and the Human Development Index:

- 5:1 Economic Growth and Employment Opportunities:** Education and training play a crucial role in driving economic growth by producing a skilled and knowledgeable workforce. Countries with higher levels of education and training tend to have greater economic productivity and more employment opportunities, leading to improved living standards.
- 5:2 Poverty Reduction:** Education equips individuals with the necessary skills to secure better-paying jobs and access economic opportunities, thus reducing poverty levels. Moreover, education also empowers individuals to make informed decisions about their health, finances, and overall well-being, thereby breaking the cycle of poverty.
- 5:3 Health and Well-being:** Education is strongly linked to better health outcomes and overall well-being. Educated individuals are more likely to adopt healthy behaviors, access healthcare services, and make informed decisions about their lifestyles. This contributes to a healthier population, which is a key aspect of human development.
- 5:4 Social Development and Equality:** Education promotes social inclusion and equality by providing equal opportunities for all individuals, regardless of their socio-economic background, gender, or ethnicity. Access to quality education helps bridge the gap between different segments of society, fostering social cohesion and reducing inequalities.
- 5:5 Innovation and Technological Advancement:** A well-educated workforce is essential for driving innovation and technological advancement. Countries that invest in education and training are better positioned to adapt to technological changes and participate in the global economy, thereby enhancing their competitiveness and overall development.
- 5:6 Environmental Sustainability:** Education plays a crucial role in raising awareness about environmental issues and promoting sustainable practices. Educated individuals are more likely to understand the importance of environmental conservation and adopt eco-friendly behaviors, contributing to the sustainable development of societies.

6: MENTORSHIP AND COACHING

Mentorship and coaching play vital roles in the development of individuals and contribute significantly to the Human Development Index (HDI). Here's how they intersect:

- 6:1 Personal Growth and Development:** Mentorship and coaching provide individuals with guidance, support, and feedback to enhance their skills, knowledge, and abilities. This personal development directly impacts their overall well-being and contributes to the Human Development Index.
- 6:2 Skill Enhancement:** Mentors and coaches help individuals identify their strengths and weaknesses and work on improving them. By developing a diverse set of skills, individuals become more employable and adaptable to changing work environments, thus positively affecting their socioeconomic status and the HDI of their communities.
- 6:3 Knowledge Transfer:** Through mentorship and coaching, experienced individuals pass on their knowledge and expertise to younger generations or less-experienced individuals. This knowledge transfer fosters innovation, entrepreneurship, and economic growth, all of which are factors considered in the HDI calculation.
- 6:4 Career Advancement:** Mentorship and coaching often play pivotal roles in career advancement. They help individuals navigate career paths, set goals, and make strategic decisions that can lead to higher income levels and better living standards, contributing to the improvement of the HDI.
- 6:5 Psychological Well-being:** Mentorship and coaching provide emotional support and encouragement, helping individuals build resilience and cope with challenges effectively. This positive impact on mental health indirectly influences the HDI by contributing to a healthier and more productive workforce.
- 6:6 Social Capital:** Mentorship and coaching relationships often extend beyond professional development to encompass personal growth and social connections. Building strong networks and relationships fosters social capital, which is essential for community development and ultimately contributes to a higher HDI.

In summary, mentorship and coaching significantly contribute to people development, which in turn influences various factors considered in the Human Development Index, such as education, income, health, and overall well-being. As individuals grow and thrive with the support of mentors and coaches, they contribute to the advancement of societies and the improvement of the HDI.

7: CAREER PATH PLANNING

Planning a career path in the realm of people development, also known as human resource development (HRD), requires a strategic approach that considers both personal aspirations and the broader context of human development indices. Here's a step-by-step guide to help you navigate this process:

- 7:1 Self-Assessment:** Begin by assessing your interests, skills, values, and long-term career goals. Reflect on what aspects of people development appeal to you the most, whether it's training and development, organizational development, talent management, or another specialization within HRD.
- 7:2 Research:** Explore various career options within people development. Look into job descriptions, required qualifications, and potential career paths. Identify industries or sectors that align with your interests and values.
- 7:3 Education and Training:** Determine the educational and training requirements for your chosen career path. Consider pursuing relevant degrees, certifications, or professional development programs. This might include degrees in human resource management, organizational psychology, adult education, or related fields.
- 7:4 Gain Experience:** Gain practical experience through internships, part-time jobs, or volunteer opportunities. Seek roles that allow you to develop skills in areas such as training facilitation, performance management, employee relations, or organizational change management.
- 7:5 Networking:** Build relationships with professionals in the field through networking events, industry conferences, and online communities. Networking can provide valuable insights, mentorship opportunities, and potential job leads.
- 7:6 Specialization:** Consider specializing in a specific area of people development based on your interests and strengths. This could involve becoming an expert in areas such as leadership development, diversity and inclusion, employee engagement, or learning technologies.
- 7:7 Stay Updated:** Keep abreast of trends, best practices, and emerging technologies in the field of HRD. Subscribe to relevant publications, join professional associations, and participate in continuing education opportunities to stay current in your knowledge and skills.
- 7:8 Contribute to Human Development:** As you progress in your career, seek opportunities to contribute to broader human development goals. This could involve initiatives such as promoting workplace diversity and inclusion, supporting lifelong learning opportunities for employees, or advocating for fair labor practices.
- 7:9 Evaluate Progress:** Regularly assess your career progress and make adjustments as needed. Reflect on your achievements, challenges, and areas for growth. Seek feedback from mentors or peers to help guide your career development journey.
- 7:10 Balance Personal and Professional Growth:** Strive to achieve a balance between personal fulfillment and professional success. Prioritize activities and opportunities that align with your values, interests, and overall well-being.

Incorporating human development indices into your career planning involves considering the broader societal impact of your work. You can align your career goals with initiatives aimed at improving human development outcomes, such as increasing access to education and healthcare, reducing poverty and inequality, and promoting sustainable development.

By combining a strategic approach to career planning with a commitment to contributing to human development, you can build a fulfilling career in people development that makes a positive difference in the world.

8: HEALTH, EDUCATION & STANDARD OF LIVING

Health" is a multifaceted concept that encompasses various aspects of physical, mental, and social well-being. In the context of human development, it is often measured through indicators such as life expectancy, infant mortality rate, access to healthcare services, prevalence of diseases, and overall quality of life.

The Human Development Index (HDI) is a composite statistic developed by the United Nations Development Programme (UNDP) to measure and compare the level of human development across different countries. It considers factors such as life expectancy at birth, education (measured by mean years of schooling and expected years of schooling), and standard of living (measured by Gross National Income per capita).

Health is a crucial component of the HDI because it directly influences life expectancy and overall well-being. Countries with higher life expectancies and better access to healthcare tend to have higher HDI scores. Improving healthcare infrastructure, providing access to essential medical services, promoting healthy lifestyles, and addressing socio-economic disparities are key strategies for enhancing health outcomes and advancing human development.

Furthermore, investments in people's development, including education and skills training, can contribute to better health outcomes by empowering individuals to make informed decisions about their health, fostering healthier behaviors, and improving access to employment opportunities and resources necessary for maintaining good health.

Overall, prioritizing health as a fundamental aspect of people's development is essential for achieving higher levels of human development and ensuring that individuals have the opportunity to lead fulfilling and productive lives.

8:1 EDUCATION

Certainly! Education plays a crucial role in both individual development and the overall development of a society. The People Development Index (PDI) and the Human Development Index (HDI) are two metrics commonly used to assess the level of development, including educational attainment, within a country.

8:1:1 Human Development Index (HDI): The HDI is a composite index developed by the United Nations to measure a country's average achievements in three basic aspects of human development: health (life expectancy at birth), education (mean years of schooling and expected years of schooling), and standard of living (gross national income per capita). The education component of HDI is typically measured by the average number of years of schooling a person aged 25 years or older has attained, as well as the expected years of schooling for children entering school.

8:1;2 People Development Index (PDI): The PDI is a metric that focuses primarily on the educational aspect of human development. It measures the extent to which a country invests in its people through education, training, and skill development. While similar to HDI in that it emphasizes education, PDI may include additional factors related to human capital development, such as workforce training programs, access to vocational education, and adult literacy rates.

Both HDI and PDI provide valuable insights into the level of education and human development within a country, helping policymakers identify areas for improvement and allocate resources effectively to promote lifelong learning and skill development. High scores in these indices are often associated with higher standards of living, increased economic productivity, and overall societal well-being.

8:2 STANDARD OF LIVING.

The standard of living is a measure of the level of wealth, comfort, material goods, and necessities available to a certain socioeconomic class or geographic area. It encompasses various factors such as income, access to education, healthcare, housing, and other basic needs.

Two widely used indices to measure the standard of living and human development are the People Development Index (PDI) and the Human Development Index (HDI).

8:2:1 People Development Index (PDI): The People Development Index is a composite index that evaluates the standard of living and quality of life of a population. It typically includes indicators such as income per capita, education level (measured by literacy rate, enrollment ratios, etc.), healthcare access (measured by indicators like life expectancy and access to healthcare services), and other relevant factors. The PDI aims to provide a comprehensive assessment of the overall well-being and development of a population.

8:2:2 Human Development Index (HDI): The Human Development Index is a composite statistic developed by the United Nations Development Programme (UNDP) to assess and compare the social and economic development levels of countries worldwide. The HDI considers three basic dimensions of human development: health (measured by life expectancy at birth), education (measured by mean years of schooling and expected years of schooling), and standard of living (measured by gross national income per capita). By combining these indicators, the HDI provides a broader understanding of human development beyond just economic factors.

Both the PDI and HDI provide valuable insights into the overall well-being and development of a population or a country. They help policymakers, researchers, and international organizations monitor progress, identify areas for improvement, and formulate strategies to enhance the standard of living and human development.

9: ANALYSIS & INTERPRETATION

To analyze the relationship between People Development and Human Development Index across different countries or regions. People development refers to the process of enhancing the capabilities, skills, knowledge, and overall well-being of individuals within a society. The HDI provides a broader view of development beyond economic indicators like GDP per capita

To investigate the components and indicators comprising the Human Development Index and their contributions to overall development.

To assess the effectiveness of policies and programs aimed at enhancing People Development and its impact on the Human Development Index.

To identify socio-economic factors that influence People Development and subsequently affect a country's Human Development Index.

To compare and contrast the concepts of People Development and Human Development Index with other development indices (e.g., Gross Domestic Product per capita) to highlight their strengths and limitations.

10: LIMITATION

The Human Development Index (HDI) is a composite statistic of life expectancy, education, and per capita income indicators, which are used to rank countries into four tiers of human development. The HDI serves as a measure of the average achievement in key dimensions of human development within a country.

Limitations on people development and the HDI can stem from various factors:

1. **Income Inequality:** While HDI includes per capita income as one of its components, it does not account for income distribution within a country. Therefore, a high HDI score does not necessarily mean equal distribution of wealth or opportunities among the population.
2. **Quality of Education and Healthcare:** HDI considers education and life expectancy, but it doesn't delve into the quality of education or healthcare services. Countries may have high HDI scores due to factors like high enrollment rates, but the quality of education or healthcare services may be lacking.
3. **Environmental Sustainability:** HDI does not incorporate environmental factors directly. Countries may achieve high levels of human development at the expense of environmental degradation, which can lead to long-term consequences for human well-being.
4. **Gender Inequality:** Although HDI includes indicators related to education, it doesn't specifically account for gender disparities. Gender inequality in access to education, healthcare, and employment opportunities can significantly impact overall human development within a country.
5. **Conflict and Political Instability:** Countries facing conflict or political instability may experience setbacks in human development despite having resources or potential for advancement. These issues can disrupt education, healthcare systems, and overall societal well-being.
6. **Data Limitations:** HDI relies on data availability and quality. In some cases, data may be outdated, incomplete, or inaccurate, leading to inaccuracies in HDI rankings and comparisons.

11 SUGGESTION & RECOMMENDATION

People development and the Human Development Index (HDI) are crucial aspects of societal progress and well-being. Here are some suggestions and recommendations for enhancing both:

1. **Invest in Education:** Education is a fundamental pillar of human development. Governments and organizations should invest in accessible, quality education from early childhood through adulthood. This includes providing opportunities for vocational training, higher education, and lifelong learning initiatives.
2. **Promote Healthcare Access:** Access to healthcare services, including preventive care, is essential for human development. Governments should focus on improving healthcare infrastructure, ensuring universal health coverage, and implementing public health initiatives to address prevalent diseases and promote well-being.

3. **Address Economic Disparities:** Economic inequality can hinder human development. Policies should focus on creating opportunities for marginalized groups, ensuring fair wages, promoting entrepreneurship, and providing access to financial services for all segments of society.
4. **Empower Women and Girls:** Gender equality is not only a human rights issue but also crucial for development. Efforts should be made to empower women and girls through education, economic opportunities, and ensuring their participation in decision-making processes.
5. **Strengthen Social Protection Systems:** Robust social protection systems, including social safety nets, unemployment benefits, and pensions, can mitigate the impact of economic shocks and enhance resilience among vulnerable populations.
6. **Foster Innovation and Technology:** Embracing innovation and technology can drive human development by improving access to information, enhancing productivity, and creating new opportunities for growth. Governments and organizations should invest in research and development, digital infrastructure, and technology adoption.
7. **Promote Sustainable Development:** Development should be pursued in a sustainable manner, considering environmental conservation and the needs of future generations. Policies should prioritize sustainable resource management, climate change mitigation, and green infrastructure development.
8. **Measure Progress with HDI:** Regularly monitor human development using the HDI and other relevant indices. This allows for the evaluation of progress over time and helps identify areas that require attention. Additionally, disaggregated data can provide insights into disparities among different groups within society.
9. **Encourage International Cooperation:** Human development is a global endeavor that requires collaboration among countries, international organizations, and civil society. Governments should engage in partnerships, share best practices, and provide assistance to countries facing development challenges.
10. **Promote Civic Engagement and Participation:** Active citizen engagement fosters inclusive development by ensuring that the needs and aspirations of communities are taken into account. Governments should create avenues for civic participation, encourage dialogue between policymakers and citizens, and promote transparency and accountability in governance.

By implementing these suggestions and recommendations, societies can work towards fostering inclusive, sustainable, and equitable human development, as reflected in the Human Development Index.

12: CONCLUSION

In summary, people development focuses on the holistic development of individuals within societies, while the HDI provides a quantitative measure to assess and compare levels of human development across different countries. Both concepts are crucial for understanding and promoting human well-being globally. Understanding development beyond economic indicators is essential for promoting holistic well-being, reducing inequalities, fostering sustainability, and enhancing the effectiveness of development policies and interventions. Training and education are fundamental pillars of human development, contributing to economic growth, poverty reduction, health improvement, social inclusion, innovation, and environmental sustainability. These factors collectively influence the Human Development Index, reflecting the overall well-being and development levels of nations. Therefore, investing in education and training is essential for promoting sustainable and inclusive development globally.

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LEVERAGING INFORMATION TECHNOLOGY FOR STRATEGIC MANAGEMENT: TRENDS, CHALLENGES, AND OPPORTUNITIES

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ABSTRACT

This research paper investigates the dynamic relationship between information technology (IT) and strategic management. Organizations are depending more and more on IT to spur innovation, increase productivity, and gain a competitive edge as a result of the rapid advancement of technology. This study examines the relationship between strategic management and information technology, emphasizing new developments, significant obstacles, and chances to use IT to support strategic decision-making. This article attempts to provide insights into how firms may successfully incorporate IT into their strategic management practices to achieve sustained growth and success in today's digital world through a thorough examination of the literature and analysis of case studies.

INTRODUCTION

The rapid evolution of IT has profoundly impacted the way businesses operate. From data analytics and artificial intelligence (AI) to cloud computing and the Internet of Things (IoT), IT offers a plethora of tools and capabilities that can be leveraged to gain a competitive advantage. Strategic management, the process of formulating and implementing long-term plans to achieve organizational goals, must now consider the immense potential and complexities that IT presents.

Trends in IT for Strategic Management

- **Big Data and Analytics:** The ability to collect, store, and analyze vast amounts of data provides valuable insights into customer behavior, market trends, and operational efficiency. Organizations are utilizing big data analytics to inform strategic decisions regarding product development, marketing campaigns, and resource allocation.
- **Artificial Intelligence and Machine Learning:** AI algorithms can automate repetitive tasks, predict future outcomes, and identify patterns that humans might miss. Strategic management can benefit from AI by optimizing supply chains, automating risk assessment, and providing data-driven recommendations for strategic initiatives.
- **Cybersecurity:** As IT becomes increasingly integrated with core business functions, cybersecurity threats also escalate. Strategic management must prioritize data security, invest in robust protection measures, and develop a comprehensive cyber resilience strategy.

Analysing Business Performance and Strategic Planning

The management's goals for the next year are to identify the main sources of income and develop strategic initiatives. Understanding and optimizing the business's revenue generation is crucial. You will be digging deep into the now-available data to uncover insights that will guide the company's strategic decisions for the upcoming year. The ultimate goal is to identify the driving reasons behind revenue development from an operational and marketing perspective.

Key Objectives:

Revenue Analysis: Understanding the origins of the revenue streams and breaking them down is the goal. Examining a number of factors is required for this, including product categories, consumer segments, sales channels, and geographical areas. Determining which locations generate the most money for the firm would be beneficial.

Marketing Effectiveness: The marketing viewpoint is just as important. Metrics pertaining to client acquisition, retention, and engagement will be examined in this. Metrics like client lifetime value, conversion rates, and engagement on various marketing channels (social media, email campaigns, etc.) may be included in this. Comprehending the efficacy of marketing endeavours facilitates the optimal allocation of resources.

Demographic Insights: A useful component of the investigation will be metrics based on demographics. This entails knowing the consumer base's demographics, including its age, gender, geography, and purchasing habits. Segment-specific product offerings and targeted marketing strategies can be informed by this data.

Insights and Recommendations:

The Findings and Recommendations Might Highlight:

- **Top Performing Categories:** Identify which product categories are driving the most revenue and suggest focusing on expanding these offerings.
- **Geographic Insights:** Showcase regions where revenue is particularly strong. This could lead to strategic expansion efforts in these areas.
- **Customer Segmentation:** Present different customer segments and their contribution to revenue. This could guide marketing efforts to target specific demographics more effectively.
- **Marketing Strategies:** Suggest strategies to further enhance marketing effectiveness based on metrics like customer acquisition cost and engagement rates.
- **Future Growth Opportunities:** Based on the data, offer insights into potential growth areas and new markets to explore.
- **Technology and Data Utilization:** Recommend tools and technologies that can assist in better data tracking, analysis, and reporting for future decision-making.

Long-Term Planning:

It is also required for a company to set a data-driven foundation for long-term planning. This involves establishing key performance indicators (KPIs), implementing systems for continuous data analysis, and fostering a culture of data-driven decision-making within the organization.

Challenges in Integrating IT with Strategic Management

- **Alignment with Business Goals:** IT initiatives must be aligned with the organization's overall strategic objectives to achieve maximum value. A disconnect between IT and business strategy can lead to wasted resources and missed opportunities.
- **Legacy Systems and Skills Gap:** Many organizations struggle with outdated IT infrastructure and a lack of skilled personnel to manage and utilize new technologies effectively. Strategic management needs to address these limitations by investing in system upgrades and developing IT talent within the workforce.
- **Data Governance and Privacy Issues:** The surge in data collection necessitates robust data governance practices to ensure data security, privacy compliance, and ethical data usage. Strategic management needs to establish clear guidelines for data handling and prioritize user privacy.
- **Cost-Benefit Analysis:** Implementing new IT solutions often requires significant investments. Strategic management must critically evaluate the cost-benefit analysis of proposed IT initiatives to ensure a positive return on investment.

Opportunities of a Strategic IT Approach

- **Enhanced Innovation and Agility:** IT can facilitate innovation by fostering collaboration, encouraging experimentation, and streamlining product development processes. Strategic management can leverage IT to become more agile, adapt to changing market dynamics, and seize new business opportunities.
- **Improved Customer Experience:** IT enables personalized marketing, real-time customer support, and data-driven product development for a more satisfying customer experience. Strategic management can utilize IT to build stronger customer relationships and cultivate brand loyalty.
- **Data-Driven Decision Making:** By leveraging data analytics, organizations can gain deeper insights into their operations, making informed decisions. Strategic management can utilize data to optimize resource allocation, identify cost-saving measures, and develop data-driven forecasts for future performance.
- **Competitive Advantage:** Effectively integrating IT into strategic management can create a significant competitive edge. Organizations can leverage IT to differentiate their products and services, optimize operational efficiency, and gain a faster time-to-market advantage.

	Mainframe Era 1950s to 1970s	Microcomputer Era 1980s to early 1990s	Internet Era 1990s to present
Dominant technology	Mainframes, stand-alone applications, centralized databases	Microcomputers, workstations, stand-alone and client-server applications	Networked microcomputers, client-server applications, Internet technology, Web browser, hypertext, and hypermedia
Information systems	Transaction processing systems (TPS), management information systems (MIS), Limited decision support system (DSS)	Comprehensive decision support system (DSS), executive support systems (ESS), enterprise resource planning (ERP) business intelligence (BI), human resource management (HRM), expert systems (ES)	Supply chain management (SCM), customer relationship management (CRM), knowledge management (KM), strategic information systems (SIS), multi-agent systems (MAS), mobile information systems
IS motivation	Efficiency	Effectiveness	Business value
Strategic management relevance	Provide information for monitoring and control of operations	Provide information and decision support for problem solving	Support strategic initiatives to transform organizations and markets

Adopted from Applegate, Austin, and McFarlan (2003)

CONCLUSION

IT plays a pivotal role in shaping the future of strategic management. By understanding the evolving trends, addressing the challenges, and capitalizing on the opportunities presented by IT, organizations can unlock a world of possibilities for achieving sustainable success. Strategic management must foster a culture of innovation and continuous learning to harness the full potential of IT and ensure its effective integration into organizational goals.

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THE CHANGING LANDSCAPE OF INDIA'S CREDIT INDUSTRY**Dr. Puneet Kumar¹, Dr. Surendra Tiwari² and Dr. Nitin Saxena³**^{1,2}Associate Professor, ³Assistant Professor, Institute of Technology and Science**ABSTRACT**

India's credit industry is evolving rapidly, driven by digitalization, regulatory reforms, and financial inclusion efforts. Fintech innovations, like AI and big data, are reshaping lending processes, while regulatory changes, such as the IBC and credit bureau establishment, enhance risk management. Alternative data sources aid in assessing creditworthiness, fostering access to credit. Collaborations between banks and fintech facilitate product innovation and customer reach. Responsible lending practices and financial literacy initiatives are gaining prominence. Challenges include cybersecurity, data privacy, and NPA management. Balancing innovation with regulatory compliance is crucial for sustainable growth, ensuring inclusivity and consumer protection.

INTRODUCTION TO THE CREDIT INDUSTRY IN INDIA

India is one of the fastest-growing economies in the world but there exists a significant gap in accessing formal credit, especially when compared to other developed nations. Banks and financial institutions (FIs) are working on filling this gap by introducing new payments products and instruments that would make it easier to access formal credit. Traditionally, formal credit was restricted to financial products such as home, auto and personal loans. However, banks and FIs have recently shifted their focus towards instruments like credit cards, buy now, pay later (BNPL) and credit EMIs. New FinTech players have disrupted the market by introducing new and innovative products and offerings to consumers.

Credit cards, BNPL and credit EMIs have witnessed large-scale issuance and growth in usage. Traditional banks and new start-ups are focusing on acquiring new customers by allowing access to credit for the unbanked/underserved segment.

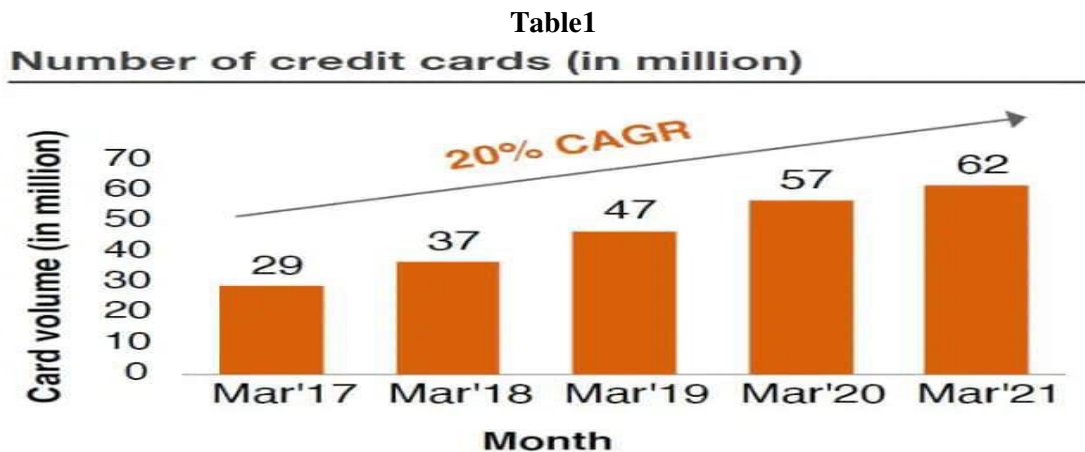
India's Credit Card Industry – Fact Sheet

India has traditionally been a debit card market. However, the growth in credit card issuance in the last decade has changed this narrative and credit cards are being used prominently. This growth is further accelerated by the various products and services being offered by FIs, and such products are being increasingly used by customers, especially the millennial population.

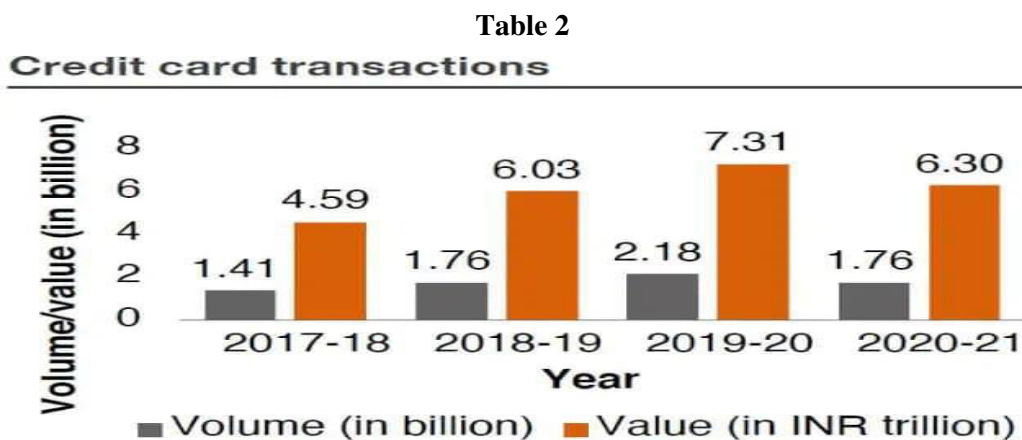
Credit card issuance has grown significantly in India at a compound annual growth rate (CAGR) of 20% in the last four years. The number of credit cardholders increased from 29 million in March 2017 to 62 million in March 2021. It has further grown by 26% and 23% respectively in 2019 and 2020. However, the COVID-19 pandemic affected the growth rate of India's credit card industry and it grew by only 7% in 2020–21. The growth rate is expected to improve marginally in FY21–22 but will remain slow due to the restrictions on card issuance by some large banks and payments networks.

Similarly, credit card transactions were growing at a CAGR of 16% till 2019–20 but went back to the 2018–19 levels in FY20–21, as depicted in the figure above. The growth rate was low during the first half of 2020–21 though it gained momentum during the second half.

Unified Payments Interface (UPI) has become one of the most popular payments systems in India. The volume of UPI transactions was much higher compared to debit or credit cards in 2020–21. However, the value of transactions recorded was similar for all the three modes of payments during the same period.

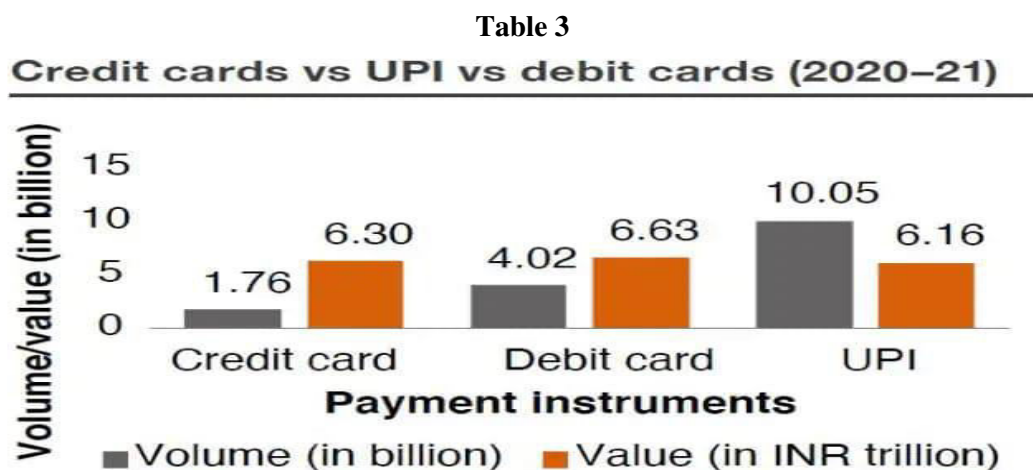


Source: RBI



Source: RBI

A total of 31 card issuers in India have issued approximately 62 million cards till now. Out of the 31 issuers, the top six have a market share of around 81% while the rest account for the remaining 19%, as per RBI data released in March 2021.



Source: RBI

Typical revenue models for card issuers

The typical revenue model for credit card issuers revolves consists of the following:

- Interest income – revolver interest, cash advance interest, etc.
- Fees and charges – joining/annual fee, over-limit fee, late payment fee, etc.
- Interchange fee income Interchange fee income
- EMIs/loans – transaction conversion, EMIs/loans balance conversion, loans above and within limits, etc.

Income from interest accounts for the highest of the total revenue earned by card issuers. Approximately 40–50% of the card revenue comes from interest income which is paid by approximately 15–20% of the revolving customers. The issuer charges interest ranging between 18–42% from customers depending on the product that they are using.³

Interchange income is earned from the fee charged by the issuer to process every credit card transaction. Interchange income is paid by the acquirer to the issuer from the MDR earned by the acquirer by charging the merchant for every transaction. Typically, the issuer charges around 1.2–2% as interchange fee for different card and customer segments. This contributes to around 20–25% of the overall revenue earned by the card issuer.

The remaining revenue is earned by the issuer through various fees and charges like joining/ annual fee, over-limit fee, late payment fee, cash advance fee, cheque/NACH bounce fee, EMI conversion fee and foreclosure. The issuer also earns revenue from interest levied on various transactions, balance conversion, loan above allocated/within limits, etc.

Key trends in the credit card space

Some of the key trends in the credit card space are analysed below:

- **FinTech disruption:** A number of FinTechs, new-age banks and original equipment manufacturers (OEMs) have entered the credit card issuance space. These players are entering into co-branded partnerships with banks and providing customers with the best in-class services.
- **Better mobile apps:** Customers today expect better mobile applications with best-in-class user-experience(UX)/user-interface (UI), features and do-it-yourself (DIY) services. A number of issuers have already started working on this front.
- **New risk models:** Card issuers are exploring various new credit risk models apart from the traditional credit rating model. These models can cater to customers with and without a credit score.
- **Contactless payments:** Customers are preferring mobile-based contactless, QR and token payments.

BNPL

BNPL has become a prominent mode of payment in the last few years. As per a latest report by a FinTech firm, BNPL has already captured 3% of the market share in the online e-commerce payments segment and the number could go up to 9% by 2024.⁴ BNPL is becoming a popular mode of short-term financing amongst millennials.

Key features of BNPL

- The average transaction limit ranges between INR 1,500–25,000 based on the use case.
- Some players are offering credit limit of up to INR 0.1 million with some nominal interest.
- The repayment cycle ranges between 15–45 days.
- BNPL is the only low-cost/free source of short-term credit for new-to-credit customers and does not require a previous credit score unlike traditional credit cards.
- BNPL is fast and convenient compared to card payments. Hence, customers are using it for use cases like paying for train/air fares.
- BNPL can penetrate the untouched segments like customers with no- or low-bureau scores. It is also becoming popular amongst the millennial population as they don't get access to credit cards easily. They mostly use BNPL for purchase of electronics, travelling, etc.

Typical revenue models for BNPL issuers

Although there is no published data on typical BNPL revenue models, the following models have been identified as per industry sources:

- Merchant fee
- Late payment fee.

Merchant fee ranges between 2–5% of the total value of payment. Merchants pay this fee to the BNPL player for every transaction.

Late payment fee is charged in case customers do not repay before the due date. Unlike credit card issuers, BNPL players charge a very nominal late fee between 1–1.5%.

FinTechs are also responsible for bearing the financing cost – ranging between 18–24% – on behalf of the financier. The BNPL model is based on multiple rounds (six–ten) of rotation of funds within a short term till the players start to earn profits.

Apart from the normal convenience-based BNPL, there are other typical models for interest-based BNPL as well where larger amounts of credit are provided to customers who can use it in the form of interest-based EMI. A few BNPL players operating in this space are offering credit limit of more than INR 25,000.

Credit EMIs

Credit EMIs or consumer durable loans is another category of formal credit growing at a good pace due to the rising urban population, increase in consumption income, low-interest credit and disruption by FinTechs.

As per a recent report published by a news portal, the consumer durable loans segment is expected to grow at a CAGR of 21% to become worth INR 205 billion in 2026–27 from INR 84 billion in 2020–21.⁵

Key Features of Credit EMIs

- Most players provide easy approvals along with minimum documentation requirements. KYC processes can be completed using mobile numbers.
- Low processing fees and affordable interest rates.
- No-cost EMIs offered in some cases.
- No security or down payment required by most of the players.
- Provides a tenure ranging from 3–60 months.
- Provides loans in the range of INR 5,000–15 lakh.

Typical revenue models for credit EMI issuers

The typical revenue models for credit EMIs consist of:

- Credit/loan processing fee
- Interest charged on credit.

Credit EMI lenders charge around 12–22% for consumer durable credit which varies from player to player. The typical loan processing fee ranges between 1–3%.

Some issuers also offer no-cost EMIs for repayment of consumer durable loans. For most of the cases in such a setup, the retailer bears the interest though it is shared with the lender in some cases.

Disruption by FinTechs

FinTechs are disrupting the banking space by changing the whole ecosystem of how banks traditionally work and bringing in a digital change across all segments. In the last few years, the credit space has seen some of the most popular offerings globally by neobanks. New players are entering the credit space in India and have started providing credit cards and digital lending via BNPL, EMI and other services. These FinTech start-ups are also partnering with traditional banks to launch new products and services in the untapped market.

India has been culturally conservative towards credit and it is always seen as a debt trap instrument. But new-age start-ups are very focused on changing this mentality by creating awareness about how credit cards and BNPL can be used for daily expenditure.

Many new FinTechs have entered the Indian credit card space by offering credit cards to individuals and corporates. All FinTechs in this space are trying to attract customers through their digital offerings and have seen significant growth in new credit card customers.

FinTechs are also focusing on bringing out co-branded cards with features and rewards dedicated to a segment. Co-branding has enabled banks to acquire customers fast and at a lower cost. There are co-branded credit cards in the market which are specifically designed for market players. Banks are also exploring partnerships with FinTech players to acquire new customers to their platforms. Banks are actively participating to provide open APIs to the FinTechs to leverage their ecosystem and on-board new credit card customers. Over the last few years, FinTechs have scaled up aggressively.

FinTechs in the BNPL segment have emerged as one of the fastest growing start-ups in digital payments. Most of these FinTechs are providing a faster and better checkout experience during online payments on different

platforms. Millennials and Gen Z are the target audience for these FinTechs as they provide real-time credit approval.

Mobile apps provide a variety of features to consumers and take user experience to a different level. The overall mobile app market has grown at a very high pace and FinTech apps dominate this space. New-age credit card apps have placed the digital banking experience in the customer's hands, allowing them to perform all actions ranging from getting a new card to statements to disputes, etc.

Best-in-Class Features Offered by FinTechs

- **Digital and faster onboarding:** Digital acquisition of credit card customers is taking place faster with no physical documentation. KYC is being done with methods like DigiLocker, Central KYC (CKYC) and video KYC.
- **Virtual cards:** These apps provide instant virtual cards to customers post completion of onboarding. Customers can use their cards on e-commerce portals instantly. New virtual cards are also provided in case of lost/stolen cards or reissue scenarios.
- **UI/UX:** FinTechs are providing a simple, best-in-class UX to customers during each phase of the user journey – onboarding, payment, services, etc. – on the website and mobile app.
- **Transactions:** These apps support different types of transactions such as QR payments, tap and pay, and tokenisation.
- **Statements:** Some apps are working towards providing interactive statements which are easy to understand and allow customers to perform actions like bill repayment, EMI booking, spend analysis and raising a dispute.
- **Dispute resolution:** Dispute resolution is a key feature which FinTechs are working on to provide a way to raise and track a dispute. Traditionally, dispute resolution takes place through call centres or physical branches only.
- **In-app support:** This includes the latest support features such as chatbots, video tutorials, FAQs and tracking of any previous support issues to quickly resolve issues.
- **Rewards:** FinTechs are providing a wide range of rewards and loyalty programmes to customers, mainly focusing on new emerging areas like subscriptions, food delivery, e-pharmacy and EdTech.
- **Business support:** FinTechs are providing customised support to businesses with features like spend tracking, adding/removing an employee from a corporate card and assigning or changing limits.

The Road Ahead

Traditionally, the formal credit sector was dominated by banks in India. However, in the last couple of years, the entry of FinTechs has led to disruption and brought in a lot of new initiatives, product offerings and innovation in this sector. These developments are bringing in new untapped customer segments, new and innovative product offerings and various new credit channels/ modes such as online payment, offline payments, etc., to the credit industry. These changes are providing major benefits to the credit card, BNPL and credit EMI sectors.

The credit card market in India is still under-penetrated. It was only 3% of the total population above 15+ years in year 2017–18 as per World Bank. This will currently be around 5–6%, which is still very under-penetrated compared to other countries like the United States (66%), United Kingdom (65%) and Brazil (30%).⁷ Though growth is a bit stagnant at the moment due to the pandemic, it will eventually pick up pace.

However, it is not only credit cards but also BNPL, credit EMIs and other payment modes have also been impacted by the current situation.

1. Co-branding with FinTechs for credit cards:
2. Foray into the BNPL space
3. Taking a cue from global players
4. Omnichannel ecosystem for credit EMIs

Co-branding with Fintechs for Credit Cards:

Banks should focus on bringing these FinTechs on board with co-branded partnerships in the credit card space. The focus should be on introducing more propositions in the high-spend categories. This will help banks to not

only provide better offerings to their existing customer base and acquire new customers but also earn higher interchange.

Foray into the BNPL Space

Traditional banks are already offering BNPL. Given the growth of BNPL in India, especially among the millennial population, other banks will also venture into this space. A lot of banks are already working in this space, and they can partner with FinTechs in order to leverage their experience and brand value along with the technology, product offerings and merchant reach of FinTechs.

Taking a Cue from Global Players

Some global players are providing best-in-class credit solutions with the latest mobile application features such as digital onboarding, enhanced UX/UI, single click payment, QR, token-based payments, dispute resolution, in-app support and spend analysis. Traditional players need to take a cue from these players to enhance their offerings.

Omnichannel Ecosystem for Credit EMIs

The credit EMI market has traditionally been dominated by offline retail. However, due to the current situation, online buying is seeing greater traction among customers. Players in this sector need to focus more on building the omnichannel ecosystem to cater to both the offline and online market.

CONCLUSION

In the past ten years, the credit business has experienced phenomenal expansion, technological upheaval, and structural changes. BNPL and credit EMIs have altered the landscape of this market in recent years, even though the current crisis has affected the adoption of credit cards.

The future of the credit card business may be threatened by BNPL. There is still a long way to go for credit cards given the low penetration of credit cards in India and the entry of FinTechs into this market.

FinTechs have introduced rational and creative innovations that can aid the expansion of the lending sector. They are causing disruption in this market with their best-in-class services by using the data that banks already have and current API stacks to give clients useful offerings.

FinTechs have opened up new avenues for the credit industry to tap into the large customer base without credit history. However, this also poses the risk of increase in defaults, which is currently about 5–10% due to the ongoing crisis. With these evolving models and many structural changes, an interesting time lies ahead for the credit industry.

THE ADVERTISEMENT EFFECTIVENESS OF HCL AMONG POTENTIAL EMPLOYEES IN NCR**Dr. Sanjeev Tandon¹ and Dr. Ruchi Tandon²**¹Associate Professor (Marketing & Retail Mgt.), Institute of Technology & Science (I.T.S), Mohan Nagar, Ghaziabad (U.P.)²Assistant Professor (Grade: III), Amity Institute of Corporate Communication (AICC.), Amity University, Sector-125, Noida**ABSTRACT**

Monitoring the success of marketing endeavours is critical for businesses, particularly smaller ones facing budget constraints. Understanding campaign efficacy not only ensures optimized resource allocation but also guides strategies for maximum impact. Several methods exist for gauging campaign effectiveness: pre/post sales analysis: Comparing sales pre and post-campaign; assessing shifts in awareness, perception, or preference; conducting pre-campaign market assessments, implementing campaigns, and measuring changes thereafter. In an associated research study employing time series design, the evaluation of HCL's global presence advertisement revealed inefficacy in message delivery. The findings suggest that viewer attitudes towards ads favor those capable of capturing attention. To enhance HCL's visibility, ads should prioritize clarity and ease of understanding. This research underscores the pivotal role of capturing audience attention while advocating for clearer communication in advertising strategies for heightened brand awareness. The study examines HCL's global multi-sector presence advertisement revealed its ineffectiveness in conveying the intended message. To enhance HCL's awareness, future advertisements should prioritize clarity for better comprehension.

Keywords: Advertising, Advertising Media, Digital Marketing, Advertising Campaign, TV Advertising, Awareness Level.

1. INTRODUCTION

Advertising, often regarded as an art rather than a science, holds immense interest for advertisers who seek to measure and evaluate its effectiveness. Assessing advertisement effectiveness, whether before or after its release in the media, serves as a pivotal strategy. It aims to prevent costly missteps, forecast the potency of advertising strategies, and enhance overall efficiency. Feedback on effectiveness proves invaluable, despite potentially incurring additional expenses for the advertiser. The ultimate objective of any business remains profitability, a goal achievable when advertisements construct compelling arguments. Publicity, a means of introducing ideas or objects to the public, encompasses broad efforts aimed at mass appeal. It can stimulate demand without cost to the sponsor, achieved through disseminating commercially significant information via published mediums or through word of mouth. In contrast, advertising specifically targets the popularization of a particular product, service, or brand at a measurable expense. It deliberately and openly promotes terms specified by the sponsor, involving a definite cost. This non-personal communication about an organization or its offerings is transmitted to a targeted audience through mass media. Although often used interchangeably, publicity and advertising differ in their intent and method. At its core, advertising is about publicizing and giving prominence to something specified by the advertiser to inform and sway public interest. It encompasses a spectrum, from the vocal pitch of a street vendor selling newspapers to elaborate attention-grabbing campaigns. The overarching aim is to bring attention to products or services, ignite demand, spur purchasing, and facilitate connections between sellers and potential buyers. Numerous experts have defined advertising, with varied perspectives. The American Marketing Association defines it as 'any paid form of non-personal presentation of ideas, goods, or services by an identified sponsor.' Similarly, the Indian Marketing Association sees advertising as 'any paid form of non-personal presentation and promotion of ideas, goods, or services by an identified sponsor.' In essence, advertising encompasses all activities involved in conveying a non-personal, openly sponsored message about a product, service, or idea to a collective audience. This message, known as an advertisement, is disseminated through one or more media channels and is financially supported by an identifiable sponsor."

2. OBJECTIVES AND CONTEXT OF RESEARCH:

The objectives outlined in the research study are clear and focus on evaluating the effectiveness of HCL advertisements among potential employees in the Delhi region. Additionally, it aims to assess the overall awareness levels of HCL among potential employees. The secondary objectives broaden the scope of the study by delving into awareness and recall of IT/ITES brands, various brands across multiple sectors, and exploring attitudes towards advertisements. The research encircles the following objectives:

Primary Objectives:

i. To assess the effectiveness of HCL advertisements among potential employees in the Delhi region.

This objective implies a focus on the specific target audience of potential employees in the Delhi region. The assessment should include aspects such as message retention, impact, and engagement with HCL advertisements.

ii. To gauge the level of awareness of HCL among potential employees.

This objective is centered around measuring the overall awareness levels of HCL among the identified target audience in the Delhi region. It involves understanding how well the brand is known and recognized by potential employees.

Secondary Objectives:

i. To understand the awareness and recall of various IT/ITES brands.

This objective expands the study's scope to include a comparative analysis of awareness and recall not only for HCL but also for other IT/ITES brands. It provides context within the industry and can identify areas where HCL stands out or needs improvement.

ii. To understand the awareness and recall of various brands across multiple sectors.

This objective broadens the study even further by incorporating various sectors beyond IT/ITES. It allows for a comprehensive analysis of how HCL's awareness compares with brands from different industries.

iii. To explore attitudes towards advertisements.

This objective delves into the qualitative aspect of the study, aiming to understand the attitudes and perceptions of the target audience towards advertisements in general. This information can provide insights into the preferences and sentiments that influence the effectiveness of advertising campaigns.

Overall, Scope:

The study's scope encompasses not only the evaluation of the success of HCL's advertising campaign but also a broader understanding of the competitive landscape, awareness across sectors, and the general attitudes towards advertisements. This comprehensive approach ensures a well-rounded analysis that can guide marketers in making informed decisions. As you proceed with the study, consider using a mix of quantitative and qualitative research methods to gather both numerical data and insights into the subjective aspects of attitudes towards advertisements. This dual approach can provide a more holistic view of the effectiveness of advertising efforts.

3. RESEARCH METHODOLOGY:

3.1 Problem Definition: The primary objective is to assess the impact of HCL's advertisements on potential employees in Delhi, while also gauging their awareness of HCL as a company, overall brand awareness in various industries, and their perceptions of advertisements. This study aims to provide insights into HCL's positioning and broader advertising preferences among potential employees in the region.

3.1.1 Research Design:

In addition to Descriptive Research, Exploratory Research elements will be integrated. This may involve focus groups or in-depth interviews to gather initial insights before structuring the main research.

3.1.2 Sample Design:

To manage time effectively, a focused approach using stratified sampling will be adopted. Potential employees in Delhi will be divided into distinct groups (such as aspiring students and existing employees), and samples will be randomly selected from these strata. A total of 12 potential employees (Students: 7 & Existing employees: 5) will be involved in evaluating HCL advertisements in the Delhi region.

3.1.3 Data Collection Methods:

Structured questionnaires will be employed for quantitative data, supplemented by semi-structured interviews to delve deeper into responses. This combination aims to provide a comprehensive understanding of attitudes towards advertisement effectiveness.

3.1.4 Statistical Tools & Techniques Used:

The analysis will incorporate both quantitative and qualitative methods. For quantitative data, statistical tools like regression analysis and correlation will be applied to determine variable relationships. Qualitative insights from interviews will undergo thematic analysis or content analysis to identify recurring patterns and themes in responses.

4. DATA ANALYSIS AND INTERPRETATION:

4.1. Data Representation of Potential Employees:

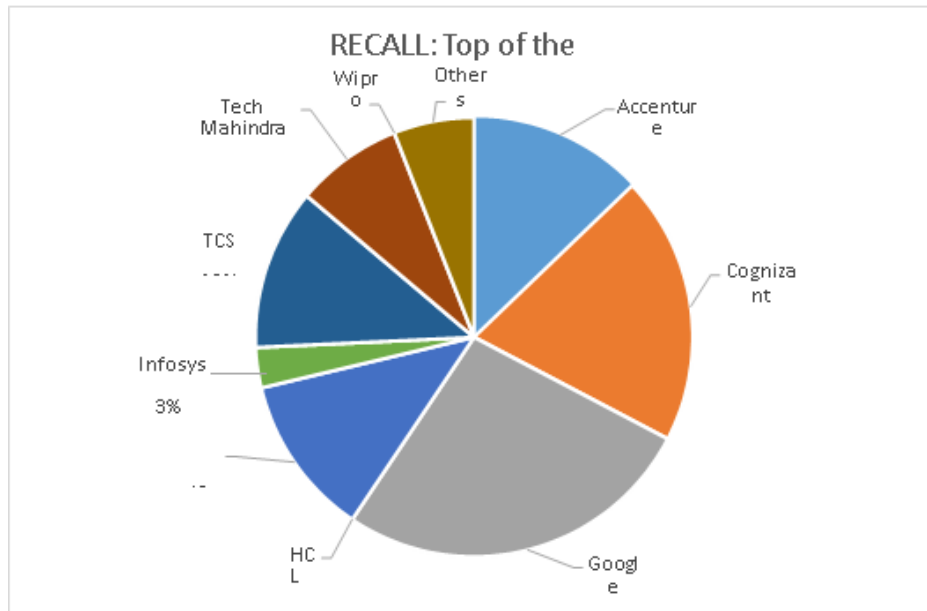


Figure 6: RECALL: Top of the Mind

In the realm of consumer awareness, the term "top of mind recall" signifies the immediate association of a product, brand, or attribute within a specific category. Notably, Google claims the lead with a robust 26%, indicating a significant presence in consumers' mental landscapes. In stark contrast, HCL lags behind with a top of mind recall of 0%, underscoring a lower level of awareness among respondents in comparison to Google. This discrepancy highlights a clear disparity in consumer recognition, suggesting that Google enjoys greater prominence in the minds of individuals surveyed. The prevalence of top-of-mind recall is a crucial factor, as brands with higher TOM are poised to establish a more enduring presence in the market.

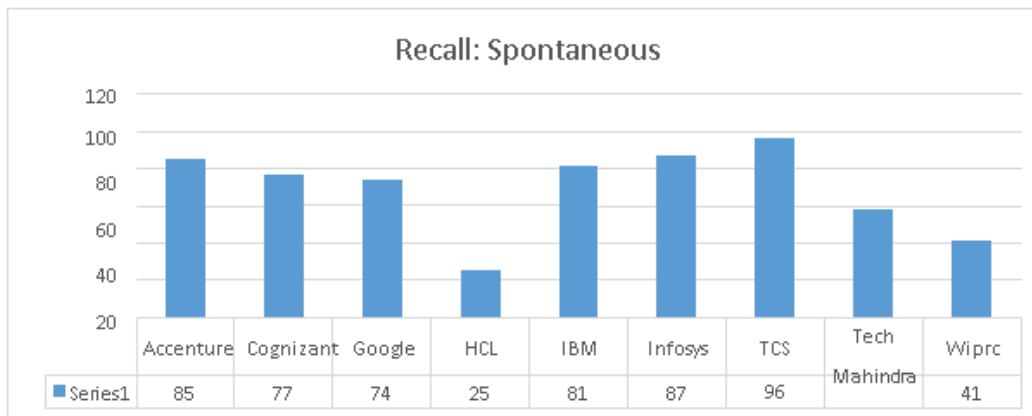


Figure 7: Recall: Spontaneous

In terms of spontaneous recall, respondents demonstrate a notable ability to recall the brand without any prompting. TCS stands out with an impressive unaided recall rate of 95.04%, underscoring its strong brand awareness. Conversely, HCL lags behind with a lower unaided recall rate of 24.75%, indicative of a comparatively lower level of brand awareness.

Awareness of IT Brands:

Table 1: HCL Awareness (Multi Sector)

	Accenture	Cognizant	Google	HCL	IBM	Infosys	TCS	Tech Mahindra	Wipro
I know only the name but not more	7.92%	7.92%	0.00%	36.63%	0.00%	0.00%	0.00%	0.00%	15.84%
I know only a bit about it	68.32%	60.40%	14.85%	59.41%	53.47%	11.88%	46.53%	43.56%	56.44%

I know a fair amount about it	11.88%	19.80%	65.35%	3.96%	38.61%	76.24%	41.58%	48.51%	23.76%
I know a great deal about it	11.88%	11.88%	19.80%	0.00%	7.92%	11.88%	11.88%	7.92%	3.96%

The figure reveals that a significant majority, specifically 59.41% of respondents, indicated having limited knowledge about HCL as a company, including its operations and business lines. This suggests that awareness of HCL is currently at a low level.

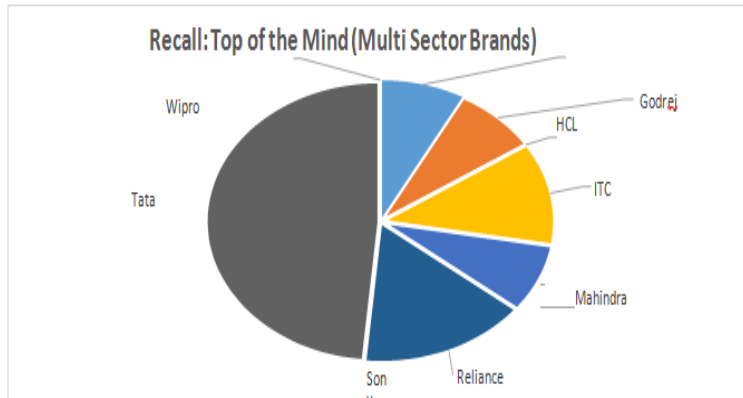


Figure: 8 Recall: Top of the Mind

Q7. Recall of Multi- Sector Brands: Top of the mind recall for TATA is 48%. For HCL it is 0%. Indicating that TATA is the most favoured Multi sector brand.

Q8. Awareness of Multi Sector Brands:

Table 2: HCL Awareness (Multi Sector)

	Aditya Birla Group	Godrej	HCL	ITC	Mahindra	Nestle	Reliance	Sony	Tata	Wipro
I know only the name but not more	3.96%	3.96%	0.00%	0.00%	3.96%	3.96%	0.00%	3.96%	0.00%	6.93%
I know a bit about it	62.38%	80.20%	84.16%	11.88%	15.84%	68.32%	11.88%	68.32%	7.92%	77.23%
I know a fair amount about it	29.70%	15.84%	15.84%	76.24%	80.20%	19.80%	60.40%	15.84%	52.48%	3.96%
I know a great deal about it	3.96%	0.00%	0.00%	11.88%	0.00%	7.92%	27.72%	11.88%	39.60%	11.88%

Q9. HCL Advertisement:

In a survey focused on HCL as a diversified brand operating across multiple sectors, a noteworthy finding reveals that 84.16% of respondents were unaware of HCL's presence in various industries. This underscores a potential gap in the advertisement's reach and effectiveness. Specifically, only 12% of the participants reported having seen the ad, while a substantial 88% were not aware of it. When presented with an ad still, only 11.88% of respondents could recall the advertisement. This indicates a lower-than-desired unaided recall, suggesting that the current advertisement may not be effectively reaching its target audience. In essence, the survey results imply that there is room for improvement in increasing the reach and impact of the HCL advertisement to enhance unaided recall among the audience.

Q10. How many times have you seen this Ad?

Table 3: HCL Awareness (Multi Sector)

Frequency	No of Respondents	Percent
1 to 3	11	91.67%

4 to 6	1	8.33%
6 or more	0	0.00%
Total	12	100.00%

Out of the individuals who viewed the advertisement, 91.67% reported encountering it no more than three times. This indicates that the frequency of the ad's telecast was kept at a low level.

Q11. Visibility of Ad on Different Media:

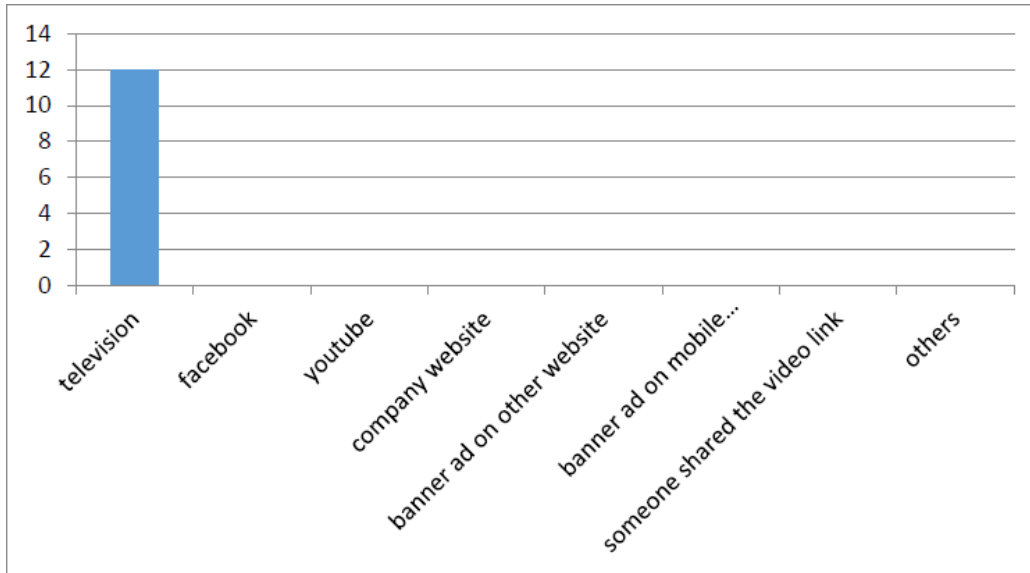


Figure 9: Visibility of Ad on Different Media

All 12 respondents affirmed that they viewed the advertisement on television, indicating that alternative media channels have proven ineffective in disseminating the ad.

Q12. Brand Recall (how many could recognize the brand after watching the Ad):



Figure 9: HCL: Brand Recall

Among the 12 respondents, only 5 individuals, or 41.67%, were able to identify that the advertisement belonged to HCL. This indicates a lack of effectiveness in establishing brand recall through the advertisement.

Q13. Recall of HCL's Tagline: **YES: 33 % NO: 67 %** 66.67% of respondents could not Recall the Tagline of HCL. A tagline is an effective tool to communicate brand promise in a memorable way.

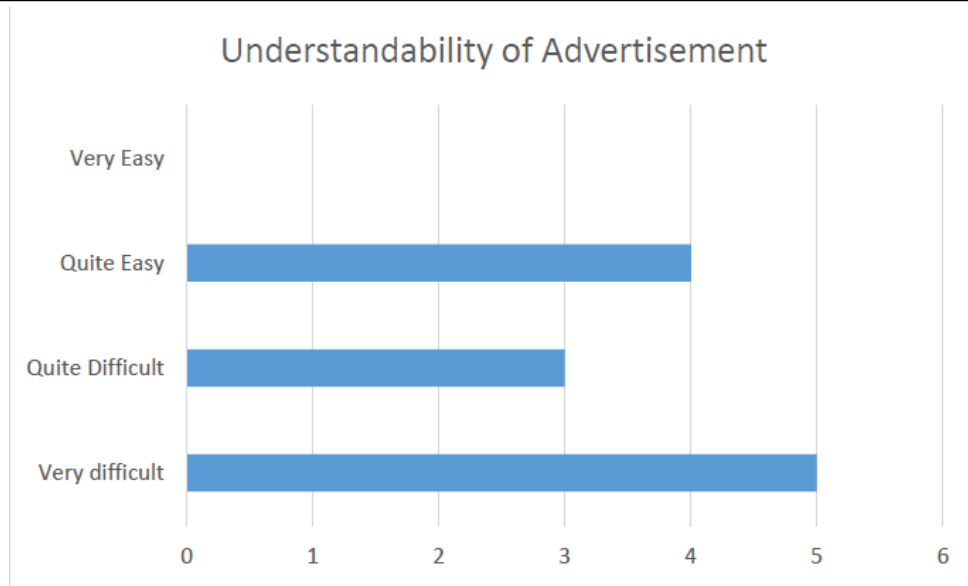


Figure 10: Recall of HCL Tagline

The Advertisement has been ineffective in creating a recall and hence Brand promise.

Q14. Understandability of Advertisement:

Table 4: Understanding of Advertising

Very difficult / Quite Difficult	8
Quite Easy /Very Easy	4

66.67% respondents said that they could not understand the Ad. This is one of the reasons for the Advertisement to be ineffective.

Q15. Emotional Appeal of Advertisement:

Table 5: Understanding of Advertising

	Completely Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Completely Disagree	MEAN	Standard Deviation
Inspires me to take on new challenges	1	3	8	0	0	3.417	3.362
Encourages me to dream big	0	4	4	3	1	2.917	1.817
Motivates me to travel to new places	0	4	6	0	2	3.000	2.608
Helped me look at the big picture of everything that we do	1	3	8	0	0	3.417	3.362
Makes me believe that one can achieve what they really want to	1	0	3	8	0	2.500	3.362
Does not convey anything new to me	0	3	8	1	0	3.167	3.362
I did not understand anything about the ad	0	4	4	4	0	3.000	2.191

The survey results indicate that a significant number of participants expressed indifference towards the advertisement. Furthermore, it is apparent that there is a lack of understanding among the respondents, as reflected by a mean score of 3.00 in this aspect. While the emotional impact of the ad suggests it encourages individuals to pursue their goals (mean=2.5), the overall sentiment is relatively neutral. These findings collectively suggest that the advertisement may not effectively convey its message and is perceived as challenging to comprehend.

4.2 Hypothesis:

Research Hypothesis:

Our objective is to investigate potential variations in the emotional appeal elicited by the advertisement among two distinct groups: students and existing employees of IT firms.

Null Hypothesis (Ho):

The means of emotional appeal for students and existing employees are identical.

Alternative Hypothesis (H1):

The means of emotional appeal for students and existing employees are dissimilar.

Number of participants who viewed the advertisement: Students: 7 & Existing employees: 5.

Group Statistics

	Respondent_Type	N	Mean	Std. Deviation	Std. Error Mean
Inspires me to take on New challenges	"Student"	7	3.2857	.48795	.18443
	"working"	5	3.6000	.89443	.40000
Encourages me to dream big	"Student"	7	3.2857	.75593	.28571
	"working"	5	2.4000	1.14018	.50990
Motivates me to travel To new places	"Student"	7	3.1429	1.06904	.40406
	"working"	5	2.8000	1.09545	.48990
Helped me to look at the big picture of everything we do	"Student"	7	3.4286	.53452	.20203
	"working"	5	3.4000	.89443	.40000
Makes me believe that one can achieve what they really want to	"Student"	7	2.4286	.53452	.20203
	"working"	5	2.6000	1.34164	.60000
Does not convey Anything new to me	"Student"	7	3.4286	.53452	.20203
	"working"	5	2.8000	.44721	.20000
I did not understand anything about the Ad	"Student"	7	3.1429	.89974	.34007
	"working"	5	2.8000	.83666	.37417

Independent Samples Test											
		Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
Inspires me to take on new challenges	Equal variances assumed	3.259	.101	-.789	10	.448	-.31429	.39836	-1.20190	.57332	
	Equal variances not assumed			-.714	5.709	.504	-.31429	.44047	-1.40551	.77694	
Encourages me to dream big	Equal variances assumed	.980	.345	1.628	10	.134	.88571	.54391	-.32619	2.09762	
	Equal variances not assumed			1.515	6.480	.177	.88571	.58449	-.51919	2.29062	
Motivates me to travel to new places	Equal variances assumed	.001	.973	.542	10	.599	.34286	.63220	-1.06577	1.75148	
	Equal variances not assumed			.540	8.631	.603	.34286	.63503	-1.10311	1.78883	
Helped me to look at the big picture of everything we do	Equal variances assumed	.554	.474	.070	10	.946	.02857	.41048	-.88602	.94317	
	Equal variances not assumed			.064	6.039	.951	.02857	.44813	-1.06623	1.12338	
Makes me believe that one can achieve what they really want to	Equal variances assumed	2.455	.148	-.310	10	.763	-.17143	.55284	-1.40323	1.06038	
	Equal variances not assumed			-.271	4.916	.798	-.17143	.63310	-1.80723	1.46438	
Does not convey anything new to me	Equal variances assumed	2.604	.138	2.141	10	.058	.62857	.29361	-.02562	1.28276	
	Equal variances not assumed			2.211	9.638	.052	.62857	.28428	-.00809	1.26523	
I did not understand anything about the Ad	Equal variances assumed	.143	.713	.669	10	.519	.34286	.51238	-.79879	1.48451	
	Equal variances not assumed			.678	9.167	.514	.34286	.50561	-.79775	1.48346	

The calculated p-values for both samples exceed 0.05, leading us to accept the null hypothesis (Ho). Consequently, we can infer that there is no statistically significant distinction in the emotional appeal generated by the advertisement among students and current employees of IT firms.

Q16. Perceived Imagery of HCL:

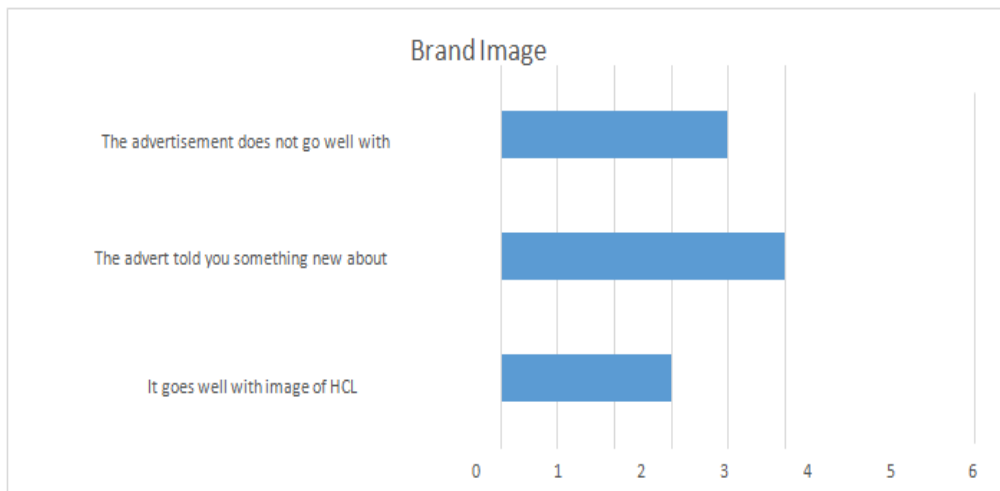


Figure 11: Perceived Imagery Of HCL

Respondents who have seen the Ad said that they have to know something new about HCL. But, since there no significant difference between the number of respondents who have rated for the above sentences, not much can be said about how the respondents feel about the Brand Image of the company.

Q17. Do you think Jingles and slogans are necessary for the advertisements to be memorable?

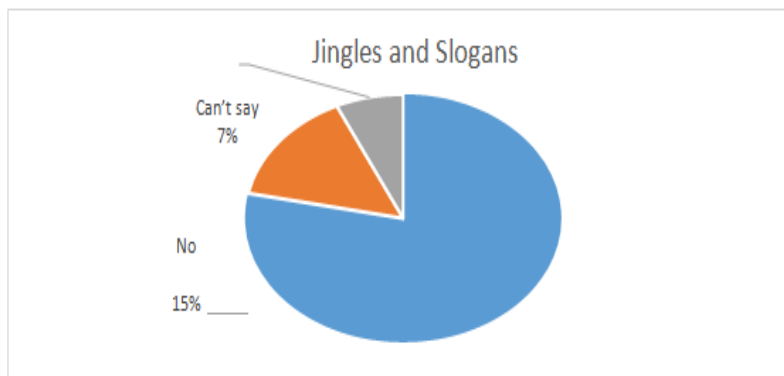


Figure 12: Personalities and Slogans

Particulars	No. of espondents	Percentage
Yes	79	78.21%
No	15	14.85%
Can't say	7	6.90%
Total	101	100.00%

According to the presented chart, out of 101 respondents, 78.21% believe that famous jingles and slogans are essential for advertisements, 14.85% disagree, and 6.9% are undecided or unable to express a viewpoint.

Q18. According to you, which media is more effective?

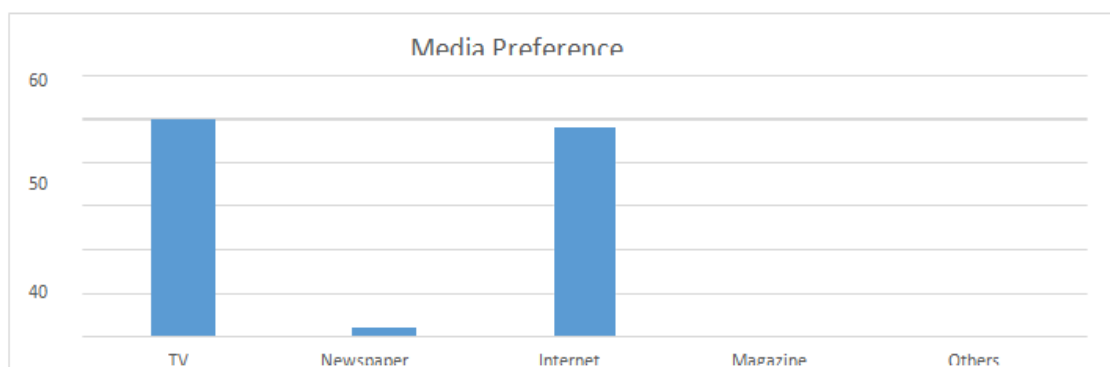


Figure 13: Media Preference

TV	50
Newspaper	2
Internet	48
Magazine	0
Others	0

The table reveals that 50% of the respondents think that TV is the best media for Advertisements followed by Internet 47.52%.

Q19. Of all the Ads you have seen, what is your overall opinion about advertisements?

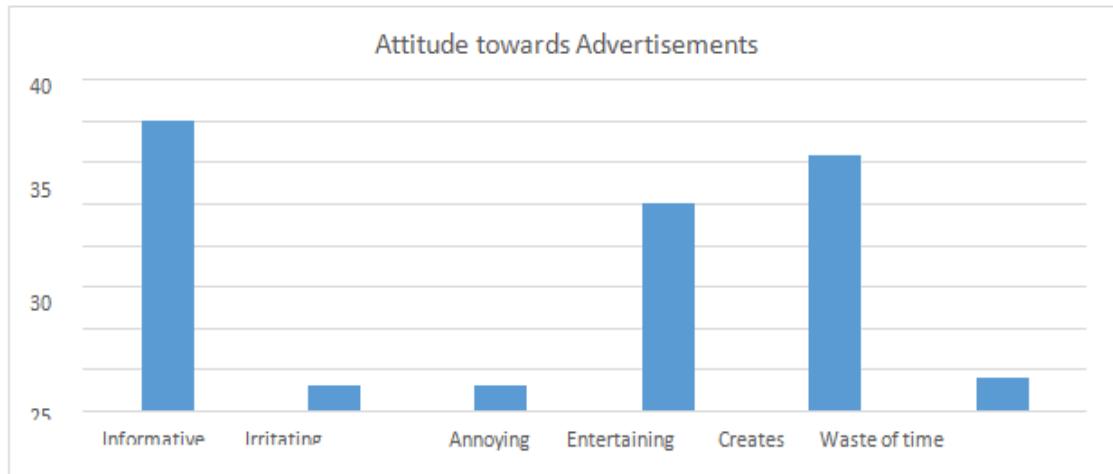


Figure 14: Attitude towards Advertisements

	Frequency	Percent
Informative	35	34.65%
Irritating	3	2.97%
Annoying	3	2.97%
Entertaining	25	24.75%
Creates Awareness	31	30.69%
Waste of Time	4	3.96%
Total	101	100%

The majority of participants (34.65%) expressed the view that advertising serves an informative purpose, closely followed by a comparable percentage highlighting its role in raising awareness. A mere 3% of respondents found advertising to be irritating, annoying, or a waste of time. These results suggest an overall positive attitude toward advertising, as evidenced by the diverse perceptions regarding its utility.

Q20. I Change the Channel During Commercial Breaks:

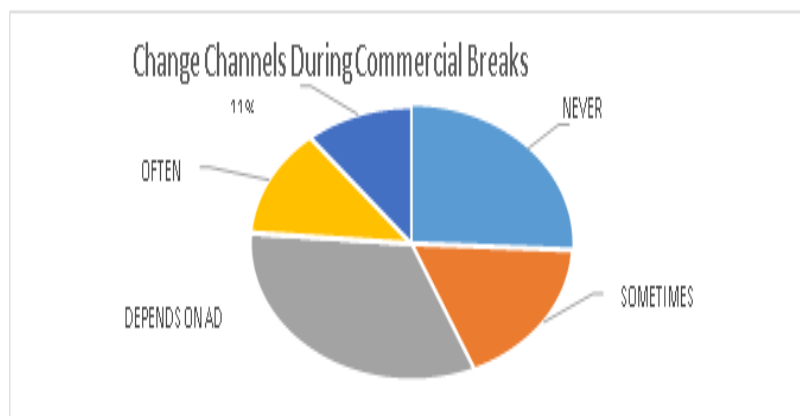


Figure 15: Change Channels during Commercial Breaks

	Frequency	Percent
NEVER	26	25.74%
SOMETIMES	18	17.82%

DEPENDS ON Ad. bvnm	33	32.67%
OFTEN	13	12.87%
EVERY TIME	11	10.89%
Total	101	100.00%

Approximately 32.67% of participants noted that they exclusively engage with an advertisement if it captures their interest. This underscores the significance of the ad's appeal in maintaining the respondents' attention..

5.1 FINDINGS, CONCLUSION & RECOMMENDATIONS:

The study aimed to assess the effectiveness of HCL's advertisement among potential employees. The findings indicate that Google has a high top-of-mind recall at 26%, while HCL has 0%. Additionally, unaided spontaneous recall of HCL stands at 24.75%, with 59.41% of respondents having limited knowledge about the company. TATA leads in unaided recall for multi-sector companies at 48%. Only 11.88% of respondents could recall the HCL advertisement after viewing it, and 84.16% expressed limited awareness of HCL. A majority (91.67%) of respondents who viewed the ad had seen it less than three times. Furthermore, 41.66% recognized the ad as belonging to HCL, but only 66.67% could recall the tagline, and the understanding of the ad was low at 66.67%. Regarding attitudes toward advertisements, 78.21% of respondents believe that jingles and slogans are essential. TV is considered the best advertising medium by 50% of respondents, followed by the internet at 47.52%. Only 35% found advertisements to be informative, and 32.67% watched ads only if they were appealing.

In conclusion, HCL's advertisement proved ineffective in achieving high reach and awareness among potential employees. The study suggests a low reliability of advertising, emphasizing the need for improved strategies. It further indicates that internet advertising could play a significant role in enhancing awareness.

RECOMMENDATIONS:

- i. To enhance the advertisement's impact, consider relaunching it with a primary focus on TV and the Internet to maximize reach across diverse audiences.
- ii. Redesign the advertisement for improved comprehension, ensuring that viewers can easily understand the message conveyed. Elevate the ad's memorability by creating a catchy jingle centered around HCL's tagline. This strategic move will help boost ad salience and leave a lasting impression on the audience.

5.2 Limitations of the study

The study's scope is restricted to potential employees, warranting an extension to include the general household segment for a comprehensive evaluation of the Ad's performance within this demographic. The intended sample size was challenging to attain. The challenges in participant recruitment resulted in respondent reluctance to engage in the survey. It's crucial to acknowledge that the data collected is subject to fluctuations influenced by evolving perspectives and opinions among respondents.

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**SOCIAL ENTREPRENEURSHIP & ECONOMIC GROWTH FOR SUSTAINABLE DEVELOPMENT:
A STUDY ON LOW- AND MIDDLE-INCOME COUNTRIES**

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ABSTRACT

In recent years, social entrepreneurship has grown in significance and scope. Economic growth on the other hand is also an integral part of research for understanding the condition of any nation. The motive of this work was to study the link in social Entrepreneurship and economic growth to identify that are these social entrepreneurship projects also working towards sustainable development. Here secondary data for last 12 years in the time span of 2012-2023 for it. The result of this study would be supposed to spread the existing works by providing some expressive in sight for the stated variables. The findings suggested economic growth is positively prejudiced by social entrepreneurship in low- and middle-income countries and these enterprises are also contributing in sustainable development.

Keywords: Social Entrepreneurship, Economic Growth, GDP, Sustainable Development

INTRODUCTION

Entrepreneurship facilitates a quicker economic retrieval. As it gears the country's economic mechanism, entrepreneurs are essential to rebuilding economies. This accelerates economic development by fostering the evolution of new goods and services that generate employment.

Profit drives the current social entrepreneur, but they also apply an added complete approach and show extra concern for mother earth and people. Entrepreneurial approaches of these change agents are for complete answer to social and ecological matters. They often encourage growth of environmental welcoming products, report the needs of marginalized groups, or involve in humanitarian events. Social entrepreneurs backing wide range of sustainable growth resolutions through not-for-profit, for-profit, and cross dealings. Missions which social enterprises would significantly embrace are arranging clean and drinkable water, increasing reachability for renewable energy, growing financial presence and providing enlightening resources. Job making is the most noticeable and obvious result of social entrepreneurship, mainly for the less lucky, underserved, or ignored sections of society. Social initiatives, as per the Organization for Economic Co-operation and Development (OECD), assist like a bond in joblessness and the open worker market. It rehabilitating bigger group of persons into the employment market can consequence in huge social as well as financial benefits. As per the OECD, social economy organizations (SEOs) are responsible for approx. 6.5% of overall jobs in the European Union (EU). After the terrible effects of COVID-19 epidemic, social industries will require government aid in upcoming time period. While financial schemes to backing businesses, workforces and self-employed have been announced, social enterprises have got slight consideration. But it helps to strengthen a nation's economy and its communal stuff. Social businesses are likely to create new occupations, provide new facilities and goods, encourage sustainability then take confidence for coming years. In social entrepreneurship, right approaches like impact investment, aware spending, and corporate social responsibility plans are extensively cast-off. Social business persons are frequently excited to bear risk and use work essential to effect optimistic change in society via ventures. The current social entrepreneur is motivated by revenue, but they also follow complete tactic to business and seems to be extra worried with fortune of the mother earth and mankind. These people use commercial tactics to carry complete solutions for societal and ecological matters through regularly promoting the expansion of naturally build goods and services.

CONCEPTUAL FRAMEWORK**SOCIAL ENTREPRENEURSHIP**

Social entrepreneurship is all about spotting social matters with the application of entrepreneurial philosophies, procedures, and operations. It all happens when a social problem is identified and then a social enterprise idealized, launched and worked to accomplish the wanted transformation. It might be a lifetime process centered on improving the present situation.

Social entrepreneurship was coined many years ago, but it has only recently entered corporate jargon. Entrepreneurship has always been linked with profit-driven individuals who set lofty goals for themselves in a world of fierce competition. And metrics like return on investment and net income margins were and are used to measure the success of businesses. However, with the empowerment and knowledge of citizens in emerging countries, a new revolution has begun, notably among the world's youth. This revolt is the rise of Social

Entrepreneurship, a type of entrepreneurship in which earnings are only a means to achieving social upliftment and empowerment.

Here for measuring social entrepreneurship, four parameters were taken:

1. Skills

The capacity to put on knowledge proficiently and enthusiastically in implementation or act can be termed as skill. This is a combination of perseverance, passion, and hard work – it is the motivation to push forward, learn new things every day, and grow your business. Finding a solution that works is unlikely to satisfy social entrepreneurs.

Social entrepreneurs believe in a vision for change and are confident that they will achieve their goals, even when many others do not. They have a strong sense of self-efficacy and believe they can change the circumstances.

2. Finance

Finance is the life blood for business. Money is critical to grow a business up and running. Most of the business ideas succumbed due to lack of funds. The value of money cannot be ignored. Once incomes start approaching, some of the value can be again invested to fascinate more clients and running the enterprise. Appropriate arrangement and cash management confirm that business idea can be convert into reality.

3. Motivational Index

This index presents the bond in prospective needs of entrepreneurship and availability of resources as well as high morale for establishing the business, where the higher the score on the index, the greater the motivation. Many other effective individual arrogances and emotions also included in this conduct.

4. Cultural

Cultural norms support or permit behaviour that results in novel commercial practices or endeavours that may raise individual wealth and income. Cultural norms are the shared views, values along with traditions which influence individual's actions and customs. These customs might influence a company's actions in the global market as they differ by place.

ECONOMIC GROWTH

Economic growth is distinct as the upsurge or enhancement in indexed to the inflation marketplaceworthy of a nation's goods and services in a period. Typically, arithmeticians measure such progress as a proportionate rate of upsurge in real gross domestic product. Simply, it refers to a rise in collective creation in an economy. Often, but not necessarily, collective gains in making correlate with increased average marginal productivity that leads to a rise in incomes, exciting consumers to open-up their purse and purchase more, which means an advanced material quality of lifetime or standard of living. GDP is the most frequently used indicator for calculating a country's economic strength.

SUSTAINABLE DEVELOPMENT

As per International Institute for Sustainable Development (IISD), "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It is basically the financial progress deprived of spoiling the environmental quality. Sustainable development is based on the fundamental idea of living within our natural constraints.

REVIEW OF LITERATURE

Social entrepreneurship is the exercise of focusing upon difficult social issues, such as unemployment, poverty, social exclusion, etc. It advocates for sustainable development that upholds human rights and makes responsible use of resources, Johnson (2000) says. According to Alvord, Brown et al. (2004), social entrepreneurship organises the ideas, resources, and social structures required to make social transformations viable and offers fresh perspectives on pressing social issues. Dacin, Dacin, and Tracey (2011), established the relationship between Institutions, Social Movement, Network, Image and Identity issue, with the social entrepreneurship. The study was targeted to review social entrepreneurship as an area. They inspected the discussions for the idea of social enterprise and recommended emphasis on results both optimistic and adverse and framework creates the utmost expressiveway of considerate the time, together tentatively and analytically. They also measured the existing studies, observing a fractional meeting with concepts. They contended that social enterprise have the possibility to enlarge and extend societal cooperation concept and it can be a tool to improve the communal conditions. Hardy Loh Rahim, Bielefeld (2009) discussed the background and present configuration of debates on social enterprise and social entrepreneurship matters linked to social initiatives are argued for nearly period,

nonetheless questions persist around the linkage in earned income and nonprofit making administrations and consistent segments. Reflections of these businesses are fairly supplementary fresh. The grade to which enterprise may vary amid not-for-profits & for-profits similarly the likely of social enterprises to speech important societal difficulties. Santos (2012), aimed at evolving learned study in social entrepreneurship by importance the key trade-off between value making and value capture and explaining when circumstances of immediate market and government disaster may rise. This article offers a theoretical agenda which permits thoughtful budding concept of social enterprises in the working of current civilization. Veronika Bikse, Baiba Rivza, Inga Riemere (2015), explained the ideas of social business person by classify Latvia's social business persons under the situation of entrepreneurship grounded on analysis of technical works. The results show that for endorse social enterprises, extra consideration must be rewarded to social business persons under the agenda of educational structure. Ana Maria Peredo, Murdith McLean (2006), undertook a logical, serious and artificial investigation of social entrepreneurship in joint practice, as both the social and the entrepreneurship fundamentals in the idea. Hardy Loh Rahim, Shahimi Mohtar (2015), studied the sense of social entrepreneurship as of numerous researchers, then propose possibility of social enterprises from partial as well as selected work for a lateral and stretched opinion, that contains mix approach with fiscal along with social targets. Wiley and Berry (2015), investigated the approaches and performance of entrepreneurial instruction in school programs. Concerning entrepreneurial orientation. This paper stated the meeting of ideals, skills and information presented by communal matters are decidedly related to youngsters who attempt to be social business persons or intrapreneurs at any point in public or private companies. Young and Grinsfelder (2011), distinguished between entrepreneurship in the commercial and municipal areas and entrepreneurship in the not-for-profit sector. This accomplish that 3rd segment social business persons are expected to require a diverse mixture of assistances than corporate industrialists. Ana et.al (2020), analyzed the controlling outcome for the level of growth of nations uses on the aspects which describe conduct of societal business persons, differentiating the impact generated in economies driven by innovation from those driven by factors or efficiency. Asif et.al (2018), investigated that what was the vital challenges and hitches met by communal entrepreneurs in bounds of Pakistan in what way social enterprises might augment in structure up with economy of Pakistan.

OBJECTIVE OF THE STUDY

To investigate relationship in social entrepreneurship & economic growth for sustainable development.

HYPOTHESIS

H0: There is no linkage in social entrepreneurship and economic growth aimed at sustainable development.

RESEARCH METHODOLOGY

The research focused to investigate the cause-and-effect link among the stated variables. Sample size was low and middle-income countries including India, Argentina, Brazil, China, Iran, South Africa, Chile and Colombia. Sampling Element was individual country. Non-probability purposive sampling technique was utilized. 12 Year's data was gathered from the official website of Global Entrepreneurship Monitor and World Bank from 2011-2023. Multiple panel regression was applied, other tests like Unit root, Fixed Effect, Random Effect, Hausman test were applied through E-views software.

RESULTS AND DISCUSSION

Panel Unit Root Test

PANEL UNIT ROOT			
Levin, Lin & Chu t* (1st level)			
Variables	t-Statistic	Probability	Observation
Cultural	-6.55434	0.0000	72
Finance	-2.71627	0.0033	72
Motivational Index	-3.59399	0.0002	72
Skills	-2.25978	0.0119	72
GDP	-3.77609	0.0001	72

Levin, Lin & Chu parameter was used on the part of the sequence which was stationary in nature. The mean of the part achieved that the series was integrated stationary at order (1) as value of P(probability) is below 0.05 due to which series assumes that the unit root is rejected. So, after this we can apply further tests.

Regression Test

Variables	Fixed Effect Model			Random Effect Model		
	Coefficient	t-stats	Probability	Coefficient	t-stats	Probability
Cultural	51400.9	2.014411	0.0472	55774.62	2.201253	0.0303
Finance	105280.3	2.792801	0.0065	111234.9	2.981317	0.0037
Motivational Index	5683.755	0.294231	0.0293	1695.18	0.08845	0.0297
Skills	-122.5978	-0.118174	0.0462	-333.2077	0.322687	0.0477
	R-squared	0.537098	R-squared	0.250514	0.322687	0.0477
	F-statistic		20.88514	F-statistic		6.016466
	Prob (F-statistic)		0.0800	Prob (F-statistic)		0.000076
Hausman Test	Chi-Sq. Statistic		5.879971	Prob.		0.3181

Hausman test assist to make the judgement among fixed and random effect model. Here the Null Hypothesis is **H0 - Preferred model is random effect.**

The alternative hypothesis is **H1 – The model is fixed effect.**

As Hausman test stated, the value of Chi-Square is 5.879971 becomes insignificant then the null hypothesis gets rejected. The model we have is random effect. According to the panel regression, the model has F value of 6.016466 and probability value is 0.3181

LIMITATION & SUGGESTIONS

Due to the lack of time the data used for study was only for 12 years. We can increase the time for the better result. We consider only 8 developing country inclusion of more developing country result in the accuracy of the data. This study was for low- and middle-income countries which can provide the growth opportunity of social entrepreneurs which can provide the data of opinion of people of different countries on the social entrepreneurship. The research can be extended to developed countries as well.

CONCLUSION

Social entrepreneurs inspire youngsters who are in search of determination and gist in the work they do. This research examined the various variable Cultural, Finance, Motivational index, skills using the secondary data. This research also attempted to explore that how the sustainability is related with social entrepreneurship and economic growth. Regression had been applied to find out the linkage in social entrepreneurship and economic growth. The Individual effect of Cultural, Finance, Motivational Index, Skills on GDP was found significant. The Finding stated that influence of social entrepreneurship on GDP in low-and-middle-income countries was found and these businesses also supporting in sustainable development.

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TRANSFORMATIVE EXPERIENCES IN SPIRITUAL TOURISM: UNVEILING THE CONTEXTUAL STIMULI

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In the contemporary discourse, tourism transcends its traditional role from mere recreation towards personal transformation. This paradigm shift emphasizes the significance of understanding and catering to the evolving motivations of travelers, particularly in unique niches such as spirituality and self-fulfillment. To address this, the present study aims to construct a comprehensive framework elucidating the contextual stimuli that contribute to the transformative experiences of spiritual tourists. Employing an exploratory qualitative design, this study synthesizes existing literature on transformative experiences through spiritual tourism.

The findings reveal three primary groups of contextual stimuli play pivotal roles in shaping the transformative journeys of spiritual tourists namely 'idiosyncratic', 'locale-specific', and 'community-centric'. Idiosyncratic stimuli include individual attributes such as reflective behavior, hermeneutic proficiency, and adversity resilience. Locale-specific factors, including serendipity, authenticity, and service quality, contribute significantly to the overall experience. Lastly, community-centric elements such as liminality, communitas, and cross-cultural interactions foster a sense of belonging and collective transformation.

This study offers valuable insights for Destination Marketing Organizations (DMOs) to identify and leverage specific value propositions inherent to spiritual destinations. By aligning marketing efforts with the intrinsic desires of spiritual tourists, DMOs can cultivate lasting loyalty in an era marked by shifting allegiances. Moreover, an enhanced understanding of the factors influencing transformative experiences may not only enrich individual journeys but also facilitate the evolution of the tourism industry to meet changing consumer demands.

Keywords: Transformative Experience, Contextual Stimuli, Idiosyncratic, Locale-Specific, Community-Centric, Spiritual tourism

1. INTRODUCTION

The amalgamation of spirituality with management and tourism studies has facilitated a notable shift in contemporary tourism paradigms, moving beyond conventional leisure pursuits towards avenues of personal metamorphosis. Spiritual tourism, underscored by various terminologies such as 'wellness tourism,' 'faith tourism,' and 'religious tourism,' has attracted significant scholarly attention, mirroring the evolving motivations of modern travelers (Buzinde, 2020; Heidari et al., 2018; Cheer et al., 2017; Haq, 2014). This domain encompasses a rich spectrum of experiences tailored to individuals' quests for spiritual exploration and introspection (Lin, 2021; Terzidou, 2020; Albayrak et al., 2018; Terzidou et al., 2017; Hyde & Harman, 2011).

Spirituality, while lacking a universal definition, is commonly construed as transcending materialism, encompassing introspective reflection, transcendence, and the pursuit of existential meaning (Kale, 2004; Reich, 2000). It roots itself in a profound connection with nature or higher entities, signifying individuals' endeavors towards inner growth and self-realization (Miner-Williams, 2006; Tanyi, 2002; Meraviglia, 1999; McIntyre & Roggenbuck, 1998; Bahm, 1974). The post-COVID-19 resurgence of interest in spiritual tourism, evidenced by a notable surge in faith-based travel, not only rejuvenates the tourism sector but also underscores its global socio-economic significance (UNWTO). In India, spiritual tourism emerges as a pivotal force driving the recovery of the country's tourism industry, shaping travel preferences and patterns (Rao, 2021; Sukhija, 2023).

Scholars have delved into various theoretical frameworks, including religious tourism analysis, Maslow's hierarchy of needs, authenticity theory, transformational learning, and liminality, to dissect the underlying dynamics and impacts of spiritual tourism (Urry, 1990; Timothy & Olsen, 2006; Maslow, 1974; Hosany & Witham, 2010; Turner et al., 2017). Tourism, beyond mere leisure pursuits, is increasingly acknowledged as a catalyst for personal transformation, molding individuals' attitudes, behaviors, and perceptions. It serves as a platform for fulfilling intrinsic needs and catalyzing transformative experiences (Pritchard et al., 2011; Pine & Gilmore, 1998). These transformative experiences, whether consciously pursued or unconsciously encountered, instigate profound shifts in visitors' beliefs, attitudes, lifestyles, and behaviors, both during their travels and

upon their return (Soulard et al., 2021). Embracing a transformative tourism perspective, as advocated by Chhabra (2021), accentuates the importance of studying outcomes such as happiness, actualization, and self-transformation pre-trip and post-trip, rather than solely relying on conventional metrics like satisfaction and loyalty.

The significance of spiritual tourism in fostering inner transformation underscores the need to explore the contextual stimuli driving transformative experiences for tourists. This study endeavors to delineate actionable strategies for targeted marketing campaigns, refine destination management frameworks, and galvanize efforts toward fostering a more sustainable tourism landscape.

2. REVIEW OF LITERATURE

The concept of spirituality has garnered increasing attention from scholars seeking to elucidate its correlation with individual well-being and personal development. While attempts have been made to define spirituality, a comprehensive consensus remains elusive. However, it is commonly understood as extending beyond materialism to encompass the mental facets of life, including intentions, affections, and emotions (Verschuuren et al., 2021).

Derived from the Latin root 'spiritus', meaning 'breath', spirituality has been defined in various ways. O'Brien (2003) characterizes it as complete involvement in life, marked by awareness and attention to the metaphysical, transcendent principles in the universe. Similarly, Marcoen (1994) defines spirituality as a transcendent interaction with something greater than oneself, transcending religious and cultural boundaries (Delgado, 2005). Spirituality encompasses faith, the pursuit of meaning and purpose, a sense of connection with others, and transcending the ego to attain inner peace and well-being (Delgado, 2005).

Spiritual Orientation is influenced by diverse factors, including personal attributes, upbringing, and cultural contexts. Personal characteristics such as personality traits, self-esteem, self-awareness, and psychological well-being play significant roles in shaping spiritual orientation. Studies indicate that individuals with high neuroticism tend to exhibit weaker spiritual orientations, whereas those with high agreeableness tend to demonstrate stronger spiritual orientations (Hill & Hood, 1999). Moreover, individuals with higher self-esteem and psychological well-being often exhibit stronger spiritual orientations.

Family background and upbringing also exert a profound influence on an individual's spiritual orientation. Children raised by parents actively engaged in religious practices tend to develop stronger spiritual orientations. Additionally, childhood experiences, such as exposure to religious leaders and narratives, significantly impact spiritual orientation. Cultural factors, including community religious beliefs and practices, further shape individuals' spiritual orientations, as religious practices vary widely across cultures (Cunningham et al., 2008).

Spiritual orientation influences individuals across multiple dimensions, including psychological well-being, behavior, and interpersonal relationships. Research indicates that individuals with stronger spiritual orientations tend to experience higher levels of subjective well-being, resilience to stress, and lower levels of anxiety and depression (Wong et al., 2017). Moreover, spiritual orientation is positively associated with traits such as forgiveness, gratitude, and mindfulness, enhancing psychological well-being.

Behaviorally, individuals with stronger spiritual orientations tend to engage in healthier behaviors, such as exercising regularly and adopting healthier diets (Hill & Hood, 1999). Additionally, they exhibit higher levels of prosocial behavior, including volunteering and charitable giving, rooted in their spiritual beliefs and values. In decision-making, spiritual orientation guides individuals towards choices aligned with their spiritual principles.

Interpersonally, individuals with stronger spiritual orientations tend to cultivate more meaningful and satisfying relationships. They are more adept at utilizing spiritual resources to navigate relationship challenges, fostering forgiveness and reducing conflict (Worthington et al., 2013). Overall, spiritual orientation shapes individuals' holistic well-being and their interactions within broader societal contexts.

The concept of transformative experience (TE) has garnered significant interest across diverse disciplines, including psychology, philosophy, education, and spirituality. It refers to profound, life-altering encounters capable of reshaping individuals' beliefs, values, and life perspectives. Previous research underscores the transformative potential inherent in tourism and the profound impact of transformative experiences (Alahakoon et al., 2021; Kirillova et al., 2017; Fu et al., 2015; Brown, 2009).

Throughout history and across cultures, humans have engaged in various transformational practices to foster personal growth. Meditation, hypnosis, and other practices inducing altered states of consciousness exemplify these efforts (Tart, 1972). Despite their prevalence, transformative experiences remain among the least understood mechanisms of human change (C'De Baca & Wilbourne, 2004).

While definitions of transformative experiences vary, their core elements remain consistent. Gagioli (2016) delineates transformative experiences based on three fundamental premises: a rapid and profound shift in self-world, affecting both epistemological and personal dimensions, emerging from complex self-organization processes. Abraham Maslow introduced the notion of "peak experience," describing it as a state of heightened inspiration and well-being with enduring impacts on life perspectives (Maslow, 1954).

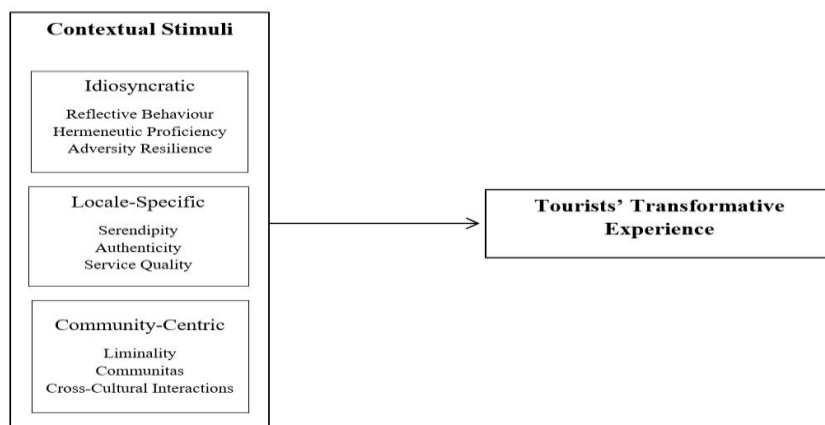
Transformative experiences can arise from various sources, including personal crises, exposure to diverse cultures, and spiritual practices. Personal crises challenge individuals' beliefs and priorities, prompting re-evaluation and personal growth (Koltko-Rivera, 2006). Exposure to diverse cultures expands worldviews, while spiritual practices facilitate personal insight and growth.

Implications of transformative experiences span education, counseling, and spirituality domains. In education, transformative experiences underscore the importance of experiential learning and challenging prevailing beliefs (Koltko-Rivera, 2006). In counseling, transformative experiences serve as therapeutic tools, alleviating symptoms of mental health disorders (Slavich et al., 2019). In spirituality, transformative experiences catalyze personal growth and spiritual development, fostering deeper connections with oneself and the divine.

While existing literature extensively explores transformative experiences in tourism, there remains a notable research gap concerning the contextual stimuli of spiritual tourism transformation. By bridging this gap, the present study aims to explore and categorize the contextual stimuli of TTE, providing insights for destination management practices and marketing strategies to enhance spiritual experiences for tourists.

3. Discussion

Fig. 1 Contextual Stimuli of TTE



Source: Authors' Compilation

3.1 Tourists' Transformative Experience (TTE)

The concept of Tourists' Transformative Experience (TTE) has garnered significant interdisciplinary attention, spanning psychology, philosophy, education, and spirituality. It represents a profound, life-altering encounter capable of reshaping individuals' beliefs, values, and outlook on life. Previous research underscores the transformative potential inherent in tourism experiences, highlighting their capacity to induce significant personal growth and change (Alahakoon et al., 2021; Kirillova et al., 2017; Fu et al., 2015; Brown, 2009).

Across different cultures and historical periods, humans have engaged in diverse transformational practices for personal development. Practices such as meditation and hypnosis have been harnessed to induce altered states of consciousness, facilitating transformative experiences (Tart, 1972). Despite the prevalence of transformational events, they remain among the least understood mechanisms of human change, characterized by rapid and profound shifts in self-perception and worldview (Miller & C' de Baca, 2001; C' De Baca & Wilbourne, 2004).

While the definition of transformative experience may vary across fields, its fundamental elements remain consistent. Gagioli (2016) outlines three key premises: a rapid and profound shift in self-world, affecting both epistemological and personal dimensions, and emerging from complex self-organization processes. Abraham Maslow introduced the concept of 'peak experience', describing it as a state of heightened inspiration and well-being with enduring impacts on life perspectives (Maslow, 1954). These experiences, characterized by awe and wonder, transcend mundane existence and often lead to profound personal insights and growth (Keltner & Haidt, 2003).

Various triggers, including personal crises, exposure to diverse cultures, and spiritual practices, can precipitate transformative experiences. Personal crises challenge individuals' existing beliefs and priorities, prompting re-evaluation and personal growth (Koltko-Rivera, 2006). Exposure to diverse cultures and people expands individuals' worldviews by challenging assumptions and stereotypes (Kegan, 1998).

Transformative experiences hold broad implications across fields such as education, counseling, and spirituality. In education, they underscore the importance of experiential learning and critical reflection (Koltko-Rivera, 2006). In counseling, transformative experiences can serve as therapeutic tools, alleviating symptoms of mental health disorders (Slavich et al., 2019). In spirituality, they facilitate personal growth and spiritual development, fostering deeper connections with the self and the divine.

3.2. Idiosyncratic Contextual Stimuli

Idiosyncratic stimuli encompass individual-level characteristics and processes contributing to the transformative nature of tourist experiences. Among these stimuli, three key dimensions stand out: reflective behavior, hermeneutic proficiency, and adversity resilience.

Reflective behavior involves the introspective process of understanding one's own standards, goals, and interests, and actively engaging in self-assessment aimed at personal improvement (Marsick & Watkins, 1990). Hermeneutic proficiency refers to individuals' capacity to express themselves, their sense of self, values, and meaning through dialogical interaction with others (Abelsen, 1993). This dimension highlights the importance of psychological resilience in overcoming challenges and setbacks encountered during travel experiences (Connor & Davidson, 2003). Idiosyncratic contextual stimuli contribute to the transformative nature of tourists' experiences by fostering self-awareness, meaningful engagement with diverse cultures, and resilience in the face of challenges.

3.3. Locale-Specific Contextual Stimuli

Locale-specific contextual stimuli reflect the unique characteristics and attributes of particular destinations. Three key dimensions of locale-specific contextual stimuli are serendipity, authenticity, and service quality.

Serendipity, often regarded as a fortuitous occurrence of finding valuable things not actively sought for, adds an element of spontaneity and unexpected discovery to tourists' experiences (Gove, 2002). In the context of tourism, serendipitous encounters with local culture, traditions, or people can lead to transformative insights and memorable experiences. Authenticity plays a crucial role in shaping tourists' perceptions and evaluations of destination experiences, encompassing cultural heritage, traditions, and unique identity (Lee et al., 2016). Service quality, encompassing the assessment of how well a delivered service aligns with tourists' expectations, is another vital dimension (Ramya et al., 2019). Collectively, these locale-specific contextual stimuli offer opportunities for unexpected discoveries, cultural immersion, and exceptional service delivery.

3.4. Community-Centric Contextual Stimuli

Community-centric contextual stimuli encompass factors intrinsic to the social and cultural fabric of a destination, significantly influencing tourists' transformative experiences. Three key dimensions of community-specific contextual stimuli are liminality, *communitas*, and cross-cultural relations.

Liminality, as conceptualized by van Gennep (1960), denotes a phase characterized by social ambiguity, offering opportunities for self-reflection, personal growth, and transformative insights. *Communitas*, introduced by Turner (1969), refers to the sensation of human interrelatedness that emerges during rituals, fostering a sense of belonging and interconnectedness among tourists and local communities. Cross-cultural relations, as described by Furnham (1985), encompass interactions between tourists and local communities, characterized by cultural exchange and mutual learning.

4. Implications

4.1 Theoretical Implications

- 1. Individual Psychological Prospects:** The exploration of idiosyncratic stimuli sheds light on individual-level characteristics and processes that contribute to transformative experiences. This deeper understanding of reflective behavior, hermeneutic proficiency, and adversity resilience enhances theoretical frameworks for studying transformative phenomena across diverse contexts beyond spiritual tourism.
- 2. Destination Dynamics in Spiritual Tourism Sanctums:** By unpacking locale-specific and community-centric stimuli, the study offers insights into the unique attributes of destinations that foster transformative experiences. This contextualization enriches theoretical discussions on destination management, authenticity, and the social dimensions of tourism experiences.

- 3. Paradigm Pioneering in Transformative Tourism Theory:** This study contributes to the field of transformative tourism theory by delineating the contextual stimuli that underpin transformative experiences in spiritual tourism. By identifying and categorizing these stimuli, the framework enriches theoretical understandings of how tourism can catalyze profound personal growth and change.

4.2 Practical Implications

- 1. Strategic Marketing Strategies for Spiritual Tourism:** Destination Marketing Organizations (DMOs) may leverage the insights from the study to craft targeted marketing campaigns that resonate with spiritual tourists. Emphasizing serendipity, authenticity, and community connections in promotional materials can attract visitors seeking transformative experiences and foster destination loyalty.
- 2. Elevated Experiential Design:** Destination managers can prioritize service quality initiatives and experiential offerings aligned with the identified contextual stimuli. By fostering serendipitous encounters, preserving authentic cultural heritage, and facilitating meaningful cross-cultural interactions, destinations may elevate visitor experiences and differentiate themselves in the competitive tourism landscape.
- 3. Community Cohesion through Sustainable Connections:** Recognizing the importance of community-centric stimuli, destination stakeholders may cultivate partnerships with local communities to co-create immersive and transformative experiences. Engaging residents in tourism planning and development initiatives fosters a sense of ownership and promotes sustainable tourism practices that benefit both visitors and host communities.
- 4. Curriculum Integration of Transformative Insights:** Educational institutions offering tourism and hospitality programs may integrate insights from the study into curriculum development. By emphasizing reflective practices, intercultural competence, and resilience training, educational programs may prepare future tourism professionals to facilitate transformative experiences and contribute to the industry's evolution.
- 5. Next-Generation Transformative Tourism Offerings:** Drawing inspiration from the identified contextual stimuli, tourism businesses may innovate new products and experiences that cater to spiritual tourists' evolving preferences. From wellness retreats promoting self-reflection to cultural immersion programs fostering cross-cultural understanding, there is ample opportunity for creative product development that aligns with the transformative aspirations of travelers.

CONCLUSION

This study sheds light on the profound transformative nature of spiritual tourism, elucidating the intricate interplay of idiosyncratic, locale-specific, and community-centric stimuli. Future research endeavors may delve deeper into emergent trends within this realm, discerning shifts in traveler preferences and the enduring impacts of transformative experiences on individuals and societies alike.

By embracing a forward-looking perspective and remaining attuned to the ever-changing consumer demands and societal dynamics, destinations can position themselves at the vanguard of transformative tourism experiences. This necessitates a holistic approach that integrates insights from diverse disciplines, harnesses innovative methodologies, and fosters interdisciplinary collaborations. Through such endeavors, the tourism industry may not only adapt to evolving landscapes but also spearhead meaningful contributions to individual well-being, cultural enrichment, and sustainable development on a global scale.

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FROM SCROLL TO SALE: HARNESSING THE FORCES OF DMC TOWARDS SUSTAINABLE PURCHASE INTENTION

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Technological advancement has reshaped the dynamics of marketing communication strategies. The present study delves into the various antecedents of digital marketing communication (DMC) to unravel the complexities pertaining to digital promotional strategies. Further, based on exploratory qualitative design, the study conceptualizes the relationship among DMC, Online Customer Experience (OCE) and Sustainable Purchase Intention (SPI). By integrating ELM, UTAUT2, TAM, and PCT theories, the study proposes argument quality, web attractiveness, privacy concerns, intrusive concerns, hedonic motivation, subjective norms, perceived usefulness and perceived ease of use as prominent factors shaping customers' attitude towards DMC. Extensive literature review corroborates the impact of DMC towards OCE which further drive sustainable purchase intention among customers. The implications highlight the necessity for firms to adjust and exploit DMC for effective marketing strategies in the ever-changing online environment.

Keywords: Digital marketing communication, Sustainable Purchase Intention, Online Customer Experience, UTAUT, ELM.

INTRODUCTION

Technological advancement has significantly transformed the marketing landscape from conventional offline marketing methods to the digital internet platforms. The era of motionless advertisements and impersonal companies has come to an end. In the present day, customers have a strong need for customized interactions, and genuine dialogues in their preferred manner. With the advent of digitalization, online platforms have become a major source of information, entertainment, and interaction with others. People are increasingly spending their time on online activities such as searching for data, product and service exploration, customer reviews/feedback, interaction with companies, etc. Marketers must acknowledge the shifting trend in customers' preferences and strategize their digital communication endeavors.

Digital marketing communication refers to exchanging information between companies and end-users via electronic or digital media. DMC can be broadly categorized into two types: one-way and interactive. One-way communication includes digital ads and customer reviews, (Minnema et al., 2016; Pauwels et al., 2011) whereas, interactive communication involves e-service chats and online brand communities (Jinet et al., 2014; Van Dolen et al., 2007). Organizations are recognizing the shift in customer behavior by including digital and social media as a crucial and inseparable element of their corporate marketing strategies (Stephen, 2016). By utilizing these communication channels, marketers may influence customers' emotions and interests in a manner that accurately perceive the brand identity in desired manner. Websites, Search Engine Optimization (SEO), e-mail marketing, social media marketing, content creation, digital advertising, mobile marketing, viral marketing, affiliate marketing and web analytics are some of the most common digital marketing platforms (Thaha et al., 2021; Alshurideh et al., 2019; Al-Qaysi et al., 2018; Al-Marouf & Al-Emran, 2018; Bala & Verma, 2018; Al-Qaysi & Al-Emran, 2017; Roggeveen et al., 2016; Varnali, 2013). It enables organizations to monitor the real-time performance of their campaigns, optimize their strategies in response to audience engagement, and maximize their return on investment.

The integration of traditional media like radio, television, newspapers, and magazines into handheld devices, coupled with the prevalent use of social media platforms including YouTube, Facebook, LinkedIn, and microblogging sites like Twitter (now X), significantly shapes global culture. Businesses quickly lose customers if their branding or communication strategy goes wrong on social media platforms.

There is a growing trend among online consumers to prioritize environmentally friendly items, prompting entrepreneurs to focus on developing sustainable and eco-friendly options (Chang and Zhang, 2019; Chen, 2001; Pujari et al., 2003). DMC enables marketers not only to achieve their aim of profitability and customer satisfaction but also to play a crucial role in advancing sustainability by spreading environmental consciousness worldwide. DMC combining technology innovation with strategic orientation, is essential for firms aiming to inculcate sustainable behavior among customers. The present study aims to enable organizations to fully leverage DMC in their marketing efforts and to fill the knowledge gap by investigating how digital marketing

communication influences sustainable purchase intention in the online sphere. The remaining sections of this article are structured as follows. Section 2 provides a comprehensive literature review and theoretical foundation. Section 3 provides a concise overview of the findings. Lastly, Section 4 elaborates on managerial implications, and in the end, concluding remarks are given.

1. REVIEW OF LITERATURE

Internet marketing has been defined as the utilization of digital technologies to accomplish marketing goals (Chaffey et al., 2009). E-WoM on social media sites may spread through internet marketing, reaching thousands or millions of audiences (Vilpponen et al., 2006). Previous research has established a positive correlation between the quality of the message and consumer satisfaction, which subsequently influences the purchase intention (Park et al., 2007). According to the Elaboration Likelihood Model (ELM), when people receive messages that are intended to be persuasive, they use two routes to process messages- Central and Peripheral route (Cheung et al., 2012). The central route is analogous to rational thinking by which people pay attention to the message's content and evaluate the argument quality, i.e., the plausibility of persuasive argumentation (Choi et al., 2020). Argument quality refers to the argument's persuasive strength (Bhattacharjee & Sanford, 2006). Kim et al. (2016) found that a stronger argument quality positively influences content acceptability. The attractiveness of a website, which is a peripheral route, was found to be a powerful predictor of behaviour intention to use a website (Chulmo Koo et al., 2014). Interactivity is considered to be a necessary component of websites and social media platforms (Thakur et al., 2023, Wirtz et al., 2013). Social media is among the most effective instruments for digital marketing communication (Karjaluoto et al., 2015). It serves as a significant catalyst for determining whether individuals will continue to purchase a specific product or service or switch to an alternative (Thaworn et al., 2021). Digital marketing communication facilitates the smooth dissemination of marketing information, but also raises security concerns (Nguyen, 2017). Information stored on different platforms may potentially be accessed by a third party (Shen et al., 2019). Individuals may not always know how their personal information is gathered without their knowledge or consent (Eibl & Engel, 2015). Data privacy has emerged as a primary concern influencing the disclosure of information across digital platforms (Lowry et al., 2012; Shah et al., 2014). Privacy, in this context, is primarily defined as the capacity to maintain a certain level of authority over information (Benson et al., 2015, Mazurek and Małagocka, 2019). Customers value their privacy when engaging in activities such as liking and sharing posts and videos (Inman & Nikolova, 2017). Conversely, intrusiveness can lead to negative emotions, such as disturbance and irritation, as well as behavioral outcomes like escape from sharing information or rejecting permission requests (Edwards, Li, & Lee, 2002; Wehmeyer, 2007). The concept of intrusiveness can be used to clarify the emergence of negative emotions triggered by online ads (Li et al., 2002). Social influence in the era of social media and word of mouth can boost the use of a particular product/service or guide customers towards a relatively acceptable new technology (Dwivedi et al., 2018; Kapoor et al., 2018; Roy et al., 2018; Williams et al., 2015; Al Somali et al., 2009). Social influence has a favorable impact on behavioural intention in various category of products (Akturan & Tezcan, 2012; Hongxia et al., 2011; Tan et al., 2014; Venkatesh & Zhang, 2010; Yang et al., 2015; Martins et al., 2014). Comparison of social influence to the subjective norm reveals the superiority of the later leading to greater adoption in marketing literature (Fishbein & Ajzen, 1975, Davis et al., 1989, Mathieson, 1991, Ajzen, 1991, Taylor & Todd, 1995). Subjective norms refer to an individual being socially influenced by the opinions of others (e.g., family members, friends and colleagues) and the fact that these opinions affect performance behaviours (Ajzen 1991). Extension of the original UTAUT model introduced by Venkatesh et al. (2012) includes three additional factors, namely hedonic motivation, price value, and habit, and is referred to as UTAUT2. A study conducted in Malaysia using UTAUT2 components validates that users' behavioural intention is primarily influenced by their expectations of performance and effort, as well as by hedonic motivation and enabling situations (Shaw, 2014).

Technology Acceptance Model (TAM) proposed by Davis (1989) and Bagozzi and Warshaw (1989), helps to examine how app users react to technological developments. Davis (1989) developed the Technology Adoption Model (TAM) to describe and forecast user information system adoption over time. The model identifies two main factors: perceived usefulness (the degree to which a person believes that using a particular system would enhance his or her job performance) and perceived ease of use (the degree to which a person believes that using a particular system would be free of effort) (El-Gohary, 2012; Ellis-Chadwick and Doherty, 2012; Hamidi and Safabakhsh, 2011).

Research Gap

Previous studies have examined various aspects of web attractiveness (Campbell et al., 2013; Thoms, 2004), privacy concerns (Baek & Morimoto, 2012), intrusiveness in advertising (Bala & Verma, 2018), and hedonic motivations (Hilal & Kodaz, 2012), there is limited research integrating these factors within the context of digital

marketing communication and online customer experiences. Although research acknowledges the role of online platforms in influencing purchase intentions (Lu and Su, 2016), there is limited exploration into how these platforms contribute to sustainable practices in online shopping. Further, ELM (Shahab et al., 2021; Yogesh K. Dwivedi et al. 2022), UTAUT2 model (Venkatesh et al. 2003, Davis, 1989; Venkatesh et al., 2012), TAM (Lim and Ting 2012; Venkatesh and Davis 2000), and Privacy calculus theory (Proudford et al., 2018; Krasnova et al., 2009) have been widely incorporated with reference to DMC but the holistic framework of these theories to examine DMC is scarce. The present study aims to fill these gaps. The ELM, UTAUT2, TAM, and PCT models are integrated to corroborate the relationship among digital marketing communication, online customer experience and sustainable purchase intention as shown in fig 1.1.

2. DISCUSSION

3.1 Argument Quality and Digital Marketing Communication

Detailed product evaluations with better argument quality, meaning greater information quality, lead to increased trust from customers (Pavlou et al., 2006; Petty and Cacioppo et al., 1986; Mudambi et al., 2010; Mayer et al., 1995). The persuasive power of the argument presented in the online content shared by users determines the quality of the argument (Bhattacharjee & Sanford, 2006). Strength of an argument determines the credibility of digital information (Xiao et al., 2018; Shan, 2016). The quality of communication is driven by its relevance, timeliness, accuracy, and comprehensiveness (Cheung & Thadani, 2012). Quality of argumentation in marketing communication may impact consumer attitudes (Chu & Kamal, 2008). Arguments quality inspire users to engage in information activities, leading them to assess information with a critical eye (Li, 2013). Strong arguments tend to bring about positive reactions from consumers, whereas poor arguments evoke negative responses from consumers (Chang et al., 2015; Bhattacharjee & Sanford, 2006).

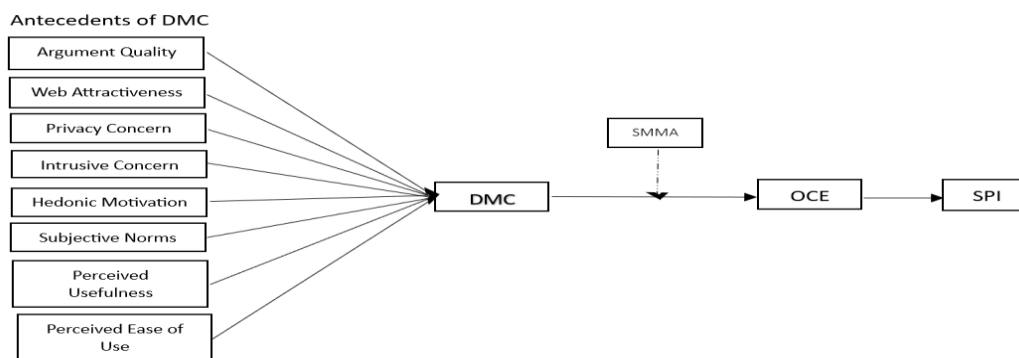


Fig 1.1 Conceptual framework of Digital Marketing Communication

3.2 Web Attractiveness and Digital Marketing Communication

Plamer (2002) states that a website possesses the capacity to effectively engage and interact with diverse target groups, including consumers, and other stakeholders. Previous studies have explored several aspects of web attractiveness, including colour schemes, typefaces, page layouts, images, and text styles (Thoms 2004). Website attractiveness is based on the person's attitudes, beliefs, and preferences towards the visual design, layout, and content of the website (Weick and Sutcliffe, 2001; Sutcliffe, 2002; Campbell et al., 2013). Wu and Tsang (2008) found that website attractiveness increases usage intention. Lee and Yurchisin (2011) studied consumer perception of a website and how these perceptions were related to purchase intentions. Weick and Sutcliffe (2001) suggest that the perception of attractiveness is influenced by design effects, which amplify consumers focus towards a particular medium and its content. Thus, high perceived web attractiveness leads to positive attitude towards DMC.

3.3 Privacy Concerns and Digital Marketing Communication

The privacy concerns significantly influence the consumer's level of participation on digital platforms (Chellappa and Sin 2005; Burden et al. 2013; Aguirre et al. 2015; Vance et al. 2008). Consumers frequently express concerns about privacy breaches, despite the fact that they are ready to share personal information in return for perceived benefits (Culnan & Milne, 2001). This dichotomy between consumers' actions and expressed concerns underscores the complex interplay of factors within the realm of privacy considerations in social commerce. Consequently, the consumer's overall attitude towards marketing communication is invariably influenced and shaped by the omnipresent spectre of privacy concerns (Baek & Morimoto, 2012).

3.4 Intrusive Concern and Digital Marketing Communication

The intrusion of external stimuli can significantly disrupt and interfere with cognitive processes of an individual, especially when they are fully engaged in complex activities (Brown, & Pope, 2019; Li et al., 2002). Such intrusiveness can pose a challenge to the individual's ability to concentrate, retain information, and manipulate mental representations, leading to a potential decline in cognitive performance (Belanche, 2019). This underscores the importance of maintaining a conducive environment that minimizes distractions and enhances cognitive engagement and productivity (Li, Edwards, and Lee, 2002). The practice of intrusiveness is frequently criticised in the field of advertising (Belanche, 2019; Tan, Brown, & Pope, 2019; Li et al., 2002). Consumers tend to react unfavourably to digital marketing communication when they perceive them as intrusive (Aaker & Bruzzone, 1985).

3.5 Hedonic Motivation and Digital Marketing Communication

Hedonic motivation, which pertains to the intrinsic desire for pleasure and enjoyment, exerts a profound influence on the perceived acceptability and subsequent adoption of various online platforms encompassing online games, social networking sites (SNS), and location-based apps (Laurin, Yang, & Chiu, 2015; Venkatesh, Thong, & Xu, 2012). The influence of hedonic factors is particularly pronounced in shaping the overall customer experience in the online realm, as they play a pivotal role in fostering a sense of pleasure and fulfillment during the purchasing process. This heightened sense of enjoyment and gratification not only enhances user satisfaction but also serves as a catalyst for capturing and retaining the attention of online consumers, thereby significantly impacting their behavioral intentions and decision-making processes (Liu et al., 2011; Kim and Eastin, 2011).

3.6 Subjective Norms and Digital Marketing Communication

Subjective norms are an efficient measurement to predict how ready users will be to take part in a social exchange process on a digital platform, such as sharing selfies online. Smith and McSweeney (2007) found that subjective norms affect online consumer attitudes and intentions and that peer approval or disapproval made people more likely to respond positively to digital marketing messages. Cultural aspects of subjective norms in digital marketing focusing on the ways in which cultural factors influence the establishment of these norms and the impact they have on consumer behaviour in online environments (Kim and Han, 2014).

3.7 Perceived Usefulness and Digital Marketing Communication

Numerous studies have underscored the significant influence of perceived usefulness on online shopping decisions (Mandilas et al., 2013; Guritno et al., 2013). Perceived usefulness not only shapes consumers' attitudes and intentions toward online shopping (Nguyen, 2020; Singh et al., 2016; Ha & Stoel, 2009; Suleman, 2018; Cho et al., 2015) but also impacts usage, satisfaction, and performance (Davis, 1989; Isaac et al., 2019; Yan et al., 2016). Positive user attitudes and perceived usefulness were found to be positively correlated, suggesting that consumers are more likely to engage with and positively react to brand messages when they perceive social media content as useful (Smith and Ngai, 2017).

3.8 Perceived Ease of Use and Digital Marketing Communication

Kim and Ko (2012) examined the PEOU of social networking platforms, highlighting the significance of user-friendly interfaces and features in influencing users' opinions. Customer involvement and intensity can make the system easy to use (Zuniarti et al., 2021). People may search and utilize information on a website to assess its reliability (Nangin, Barus, & Waheeda, 2020). According to research on customer acceptance of online services, perceived ease of use is a key factor in Web technology adoption (Pikkarainen et al., 2004, Wu et al., 2007). A favourable impression towards interface may have considerable impact on consumers' attitudes and behavioural intentions towards online advertisements (Cho and Cheon, 2004).

3.9 Digital Marketing Communication and Online Customer Experience

Rodriguez and Williams (2020) examined the psychological aspects of digital communication, specifically focusing on how the tone and content of online messages can greatly influence consumer emotions and, consequently, their overall online experience. Wang and Lee (2017) emphasised the significance of integrating digital communication channels to improve the consistency of the online consumer journey. Effective communication, engagement with online content, and interactions with consumers are crucial factors, having significant impact on online customer experiences (Baldus et al., 2015; Brodie et al., 2011; Rose et al., 2012).

3.10 Moderating Role of SMMA

OCE affects satisfaction, trust, and repurchase intention (Ha and Perks 2005; Janda and Ybarra 2005; Wong and Sculli 2005; Jin, Park, and Kim 2008). Garcia et al. (2018) emphasize how planned social media marketing improves consumer trust and satisfaction. Consumers and users have varied experiences since they may have

distinct sensations and thoughts about the same service activities (Agapito et al., 2013). According to Verhoef et al. (2015), effective social media marketing has the potential to improve the online shopping experience and influence consumer decision-making. According to Short et al. (1976), social media platforms create a sense of community and enhance the online experience by facilitating virtual interactions.

3.11 Online Consumer Experience and Sustainable Purchase Intention

Liang and Turban (2011) argue that a smooth and pleasurable online shopping experience improves consumers' trust and satisfaction, which in turn affects their willingness to participate in sustainable purchasing. Managing online platforms can greatly enhance consumers' understanding of sustainable products, leading to a greater likelihood of making eco-friendly purchases (Li et al. 2018). The role of online platforms in fostering social influence, indicating that positive interactions and peer recommendations within virtual communities can positively impact purchase intentions in a sustainable manner (Lu and su, 2016).

Theoretical and managerial implication

This research has major theoretical implications for comprehending digital marketing communication and online customer behaviour. The integration of Elaboration Likelihood Model (ELM), Unified Theory of Acceptance and Use of Technology 2 (UTAUT2), Technology Acceptance Model (TAM), and Privacy Calculus Theory (PCT) in the study contributes significantly to the existing literature of marketing in several ways. By integrating multiple established theoretical frameworks, the study offers a comprehensive and holistic understanding of digital marketing communication (DMC). This synthesis allows researchers and practitioners to explore the complex dynamics and underlying mechanisms that influence customers' attitudes and behaviors in the digital realm. Each of the theories brings its unique perspectives thereby enhancing the predictive accuracy of marketing outcomes. The integration of theories from diverse disciplines such as psychology, information technology, and consumer behavior facilitates cross-disciplinary insights into DMC. This interdisciplinary approach enriches the literature by providing a comprehensive understanding of how various psychological, technological, and social factors interact to shape customer perceptions and behaviors in digital marketing contexts.

The integrated framework not only advances theoretical knowledge but also offers practical guidance for marketers and managers. Consumers rely on the quality of arguments presented in marketing communications to make sustainable purchase decision. Logical arguments help consumers understand the value proposition of products or services, leading to increased confidence in their choices. Therefore, Marketers should focus on crafting clear, concise and persuasive content that provides valuable information and addresses customer sustainable needs and preferences. Further, a consistent standard of argument quality across all communications should be ensured better online experience and to uphold the brand's reputation for reliability, expertise, and authenticity.

A well-designed and aesthetically pleasing website conveys professionalism and credibility. Consumers form initial impressions of a website within seconds of landing on it. A well-designed website that provides a positive user experience is more likely to rank higher in search engine results pages (SERPs), increasing visibility and driving organic traffic. Employing professional web designers and user experience (UX) and user interface (UI) experts can help marketers enhance the attractiveness and usability of digital communication. Investing in content creation tools, training, and expertise can enhance the quality and effectiveness of digital marketing communication. Designing visually appealing and user-friendly websites and digital platforms is essential for optimizing conversion rates and achieving marketing objectives. Privacy-conscious consumers value transparency and honesty from businesses regarding their data practices. Lack of transparency or perceived deception regarding data collection and usage can erode trust and credibility, leading to negative perceptions of the brand. Thus, personalization strategies should be balanced with respect for customers' privacy and preferences. Marketers must implement robust data protection measures and comply with privacy regulations to mitigate privacy & intrusive concerns among customers. Adhering to data protection laws, implementing privacy-by-design principles, and conducting regular audits may help ensure compliance and minimize the risk of data breaches or regulatory penalties.

Consumers often use hedonic purchases that offer emotional gratification and sensory pleasure, to express their individuality, environmental conscious attitude, social status, or personal values. Consumers may be motivated to purchase luxury goods, eco friendly or experiential products to reflect their desire for self-expression, creativity, and uniqueness. By emphasizing sensory appeal, emotional benefits, and experiential value, marketers can position their brands as providers of hedonically satisfying experiences that resonate with consumers' desires. Immersive events, pop-up activations, and interactive campaigns allow consumers to engage with brands on a sensory and emotional level, fostering positive associations, brand loyalty and even to justify

premium pricing of the products. Through visual, auditory and tactile stimuli, marketers can create multisensory brand experiences that enhance product desirability, engagement, and memorability.

Consumers often use reference groups, such as friends, family, or opinion leaders, as benchmarks for evaluating their own attitudes and behaviors. Subjective norms drive word-of-mouth marketing and viral sharing of brand-related content among consumers. Marketers can incorporate normative appeals and social comparison cues into marketing messages to align with consumers' subjective norms. Highlighting social trends, popularity indicators, and social acceptance cues may reinforce consumers' perceptions of the brand's alignment with prevailing social norms. Marketers can foster brand communities and online communities to cultivate subjective norms and social identities around their brands. Engaging consumers in interactive discussions, user-generated content activities, and community events strengthens social bonds and reinforces normative expectations. Perceived usefulness directly influences customers' attitude regarding whether to engage with a product, service, or communication channel. Marketers can leverage data analytics and customer insights to personalize digital marketing messages based on individual preferences and behaviors. By monitoring relevant metrics such as engagement rates, click-through rates, and conversion rates, marketers can identify areas for improvement and optimize their strategies to better meet customers' needs and expectations. By using clear and concise messaging to communicate the benefits of sustainable products or services and avoiding jargon and providing straightforward instructions, marketers may improve customers' perception of ease of use and develop positive attitude towards digital marketing communication. This may enrich the online customer experience and further stimulate sustainable purchase intention among customers.

CONCLUSION

In the contemporary landscape of dynamic technological advancement, digital marketing communication serves as a pivotal conduit to navigate the complexities of the digital ecosystem. The strategic imperative underscores its pivotal role in fostering online customer experience and driving sustainable purchase intention, thereby solidifying its indispensable significance in modern marketing endeavors. The implications provided in the study offer valuable and practical insights that can be utilized by marketers to shape and refine their communication strategies.

Future research may explore the longitudinal effects of digital marketing communication on Online Customer Experience and Sustainable Purchase Intention to understand how these relationships evolve over time. Additionally, quantitative studies may validate the conceptual model proposed in the study by providing empirical evidence of the impact of DMC on customer attitude and behavior. Furthermore, comparative analyses across different industries or cultural contexts may enhance the understanding of the generalizability. Lastly, investigating emerging technologies and trends in digital marketing communication, such as artificial intelligence and augmented reality, could provide insights into new avenues for marketers to optimize their communication strategies in the ever-changing technological environment.

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CORPORATE SOCIAL RESPONSIBILITY (CSR): THE SUSTAINABLE BALANCE AND INCLUSIVE GROWTH MODEL**Dr. Mala Shharma and Dr. Pratibha Verma**

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ABSTRACT

A sustainable business model is corporate social responsibility, or CSR for short. Creating Shared Value, or CSV, is referred to as CSR. Corporate Social Responsibility (CSR) is a form of corporate social responsibility that encompasses not only social but also economic benefit. Therefore, a corporation may boost its social and economic worth by applying CSR. Methods/design/approach: a review of the literature. Findings: A business that adopted CSR also made its sustainable business strategy public. It was anticipated that the company's improved economic and social worth would help society as well. Expanded market share, higher productivity, and profit were all considered aspects of economic worth. Social values included the enhancement of social innovation, the development of areas and infrastructure, and the resilience of society. Practical application: It is anticipated that this study will help business owners who are creating CSR as a long-term business strategy. Originality and worth:

Key words: Creating Shared Responsibility (CSR), Corporate Social Value (CSV), economic value, social value, sustainable business model.

INTRODUCTION

Corporate Social Responsibility (CSR) has garnered significant attention in both academic research and corporate practice over the past few decades. This literature review aims to provide a comprehensive overview of existing scholarly work related to CSR, focusing specifically on the concept of sustainable balance and inclusive growth within the CSR framework. In the contemporary business landscape, Corporate Social Responsibility (CSR) has emerged as a fundamental component of corporate strategy, reflecting a shift towards more sustainable and inclusive business models. Beyond mere profit generation, companies are increasingly recognizing their responsibility towards society, the environment, and stakeholders beyond shareholders. This paradigm shift is not only driven by ethical considerations but also by the recognition of the long-term benefits of sustainable practices and inclusive growth models.

THE EVOLUTION OF CSR:

Historically, businesses primarily focused on maximizing profits, often at the expense of social and environmental concerns. However, as globalization accelerated and information became more accessible, the impacts of corporate actions on society and the environment became apparent. This led to a growing demand for businesses to be more accountable and transparent in their operations. The concept of CSR evolved as a response to this demand, encompassing the idea that businesses should operate in a manner that balances economic, social, and environmental considerations. CSR is not just about philanthropy or compliance; it is about integrating sustainability into every aspect of business operations, from supply chain management to product development and beyond.

THE TRIPLE BOTTOM LINE APPROACH:

A key framework for understanding CSR is the Triple Bottom Line (TBL) approach, which evaluates a company's performance based on three dimensions: economic, social, and environmental. Instead of solely focusing on financial profits (the traditional bottom line), the TBL approach encourages companies to assess their impact in terms of people (social) and the planet (environment) as well. By adopting the TBL approach, companies can identify opportunities to create shared value, where business success aligns with societal progress and environmental sustainability. This approach not only enhances the company's reputation and brand loyalty but also mitigates risks associated with social and environmental issues.

KEY ELEMENTS OF CSR:

Ethical Business Practices: CSR entails conducting business in an ethical manner, which includes respecting human rights, labor standards, and fair trade practices. Companies are expected to uphold integrity and transparency in their dealings with stakeholders.

Environmental Sustainability: Sustainable business practices involve minimizing environmental impact throughout the supply chain, reducing carbon emissions, conserving natural resources, and promoting renewable energy alternatives.

Community Engagement: Companies are increasingly engaging with local communities to understand their needs and contribute to their development through initiatives such as education, healthcare, and infrastructure development.

Diversity and Inclusion: Promoting diversity and inclusion within the workforce is a crucial aspect of CSR. Companies that foster diverse and inclusive workplaces not only benefit from a broader range of perspectives but also contribute to social equity and economic empowerment.

BENEFITS OF CSR:

Enhanced Reputation: Companies that demonstrate a commitment to CSR build trust and credibility with consumers, investors, and other stakeholders, leading to enhanced brand reputation and customer loyalty.

Risk Mitigation: By addressing social and environmental risks proactively, companies can mitigate potential crises and regulatory challenges, safeguarding their long-term viability.

Cost Savings: Sustainable practices such as energy efficiency and waste reduction not only benefit the environment but also result in cost savings for companies over time.

Access to Capital: Investors are increasingly considering CSR performance when making investment decisions. Companies with strong CSR credentials may have better access to capital and lower borrowing costs.

CONCEPTUAL FRAMEWORK OF CSR:

Carroll's Pyramid of CSR: Carroll (1979) proposed a pyramid model of CSR, comprising economic, legal, ethical, and philanthropic responsibilities. This framework laid the groundwork for understanding CSR as a multifaceted concept that extends beyond economic objectives to encompass social and environmental considerations.

Stakeholder Theory: Freeman (1984) introduced the stakeholder theory, emphasizing the importance of considering the interests of all stakeholders, including employees, customers, communities, and the environment, in business decision-making processes. This theory underscores the interconnectedness between business operations and broader societal concerns.

EVOLUTION OF CSR MODELS:

Triple Bottom Line (TBL): Elkington (1994) introduced the TBL framework, advocating for businesses to evaluate their performance based on three dimensions: economic, social, and environmental. This holistic approach emphasizes the need for companies to achieve a balance between profit generation, social equity, and environmental sustainability.

Shared Value Creation: Porter and Kramer (2011) proposed the concept of shared value, suggesting that businesses can create economic value while simultaneously addressing societal needs and environmental challenges. This approach emphasizes the integration of social and environmental considerations into core business strategies, leading to sustainable competitive advantage.

SUSTAINABLE BUSINESS PRACTICES:

Environmental Sustainability: Numerous studies have examined the adoption of environmentally sustainable practices by corporations, including initiatives such as carbon footprint reduction, renewable energy adoption, and waste management strategies (e.g., Bansal & Roth, 2000; King & Lenox, 2001).

Social Responsibility: Scholars have also explored the social dimensions of CSR, including initiatives related to employee welfare, human rights protection, community development, and diversity and inclusion in the workplace (e.g., McWilliams & Siegel, 2001; Korschun et al., 2014).

INCLUSIVE GROWTH AND CSR:

Inclusive Business Models: Prahalad and Hart (2002) introduced the concept of inclusive business models, which aim to integrate low-income communities into the value chain as producers, suppliers, and consumers. By empowering marginalized populations and fostering economic inclusion, inclusive business models contribute to sustainable development and poverty alleviation.

Impact Investing: The emergence of impact investing represents a growing trend towards aligning financial returns with social and environmental impact. Impact investors seek to support businesses that generate positive social and environmental outcomes alongside financial profits, thereby promoting inclusive growth and sustainable development (e.g., Emerson & Bonini, 2003; Godeke & Jerger, 2011).

The literature on Corporate Social Responsibility reflects a growing recognition of the importance of integrating sustainability and inclusivity into corporate strategies. From theoretical frameworks such as Carroll's Pyramid

and Freeman's Stakeholder Theory to practical approaches like the Triple Bottom Line and shared value creation, scholars have explored various dimensions of CSR and its implications for sustainable balance and inclusive growth. Moving forward, further research is needed to understand the mechanisms through which CSR practices can effectively contribute to both business success and societal well-being, fostering a more equitable and sustainable global economy.

CONCLUSION:

Corporate Social Responsibility is no longer just a buzzword; it has become a strategic imperative for businesses in the 21st century. By embracing sustainability and inclusive growth models, companies can not only create value for shareholders but also contribute positively to society and the environment. As the global challenges of climate change, social inequality, and resource scarcity continue to escalate, CSR offers a pathway towards a more sustainable and equitable future for all stakeholders.

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EXAMINING GRADUATES' EMPLOYABILITY IN RELATION TO EDUCATION: A THOROUGH SYSTEMATIC REVIEW AND META-ANALYSIS

Ms. Megha Mohan¹ and Dr. Sachin Sabharwal²¹Assistant Professor and ²Associate Professor, JIMS, Rohini (Sector-5)**ABSTRACT**

Employers generally assess the graduates based on their hard skills, soft skills and their job experience. The majority of employers complain that the graduates lack the necessary skills and abilities for their industries. The higher education of the 21st century in the world, as well as India, is very complex which is affected by a wide number of issues as well as the opportunities: inadequate infrastructure, resource utilization, scalability, disparity in the delivery of the skills and many other. The researchers identified that the employability is affected by the varied skills, personal traits and knowledge bases for the continued success. Despite increasing research interest in skillset development, there are still lacunae in understanding the conceptualization of skillset development during the pandemic. Thus, this study provides a review of extant literature and meta-analysis of research studies to present the theoretical underpinning concept of skillset development. Special attention is given to the employability skills, task-related skills, self-management, or technical knowledge required by the employers.

Keywords: Skills, Higher Education, Employability, Industry Expectations, Meta-Analysis, Systematic Review

INTRODUCTION

One of the numerous economic challenges facing a developing nation like India is unemployment. In light of this, the Planning Commission of India has predicted that by 2022, there will be a shortfall of approximately 500 million skilled workers. As a result, education plays a critical role in helping people acquire the skills necessary to find employment. One of the several reasons a candidate might not advance to the next round is a lack of employability skills. The responsibility for fostering these abilities in the classroom has changed over time.

A major problem to conducting cross-national comparisons of the prevalence of over-education and unemployment among university graduates is the phenomenon's dependence on business cycles and overall labor market circumstances. The employability of higher education graduates across countries, as determined by factors such as unemployment and over-education, will largely mirror overall variations in the labor market environment. There are more "employability" metrics to take into account. This is particularly intriguing if one's objective is to look at the connection between the employability of graduates and the features of higher education programs.

Participants in business education are changing at a rapid pace. Institutions of higher learning are under growing pressure to address today's global issues. In order to foster resilience and promote recovery, authorities have frequently advocated investing in personal skills since the Great Recession of 2008. By needing specialists who can adapt to new contexts and trends, including the Fourth Industrial Revolution, the sector strengthens its desire for qualified candidates.

According to a report by the Higher Education Academy, there are several effective strategies that higher education institutions can implement to integrate employability into institutional initiatives. These include developing and/or consolidating career guidance services within the institution, promoting employability through extracurricular and curricula (such as entrepreneurship courses) and networking events (such as mentoring programs), helping students with their personal development (such as building self-confidence), and encouraging international mobility and critical thinking about the experiences they have had overall.

The literature has documented a number of variables that could support the effective teaching of employability skills. These include the mode of instruction, the qualities of the teacher, the explicit learning objective of skill development, the activity and involvement of the students, the pertinent context, and the accountability and autonomy of the students. Teaching employability skills is a problem that emphasizes how important it is to identify and put into practice specific educational practices that directly address employability and skill development issues. This may not be as simple as it sounds, given the variety of constraints that govern many educational settings.

The importance of this individual level of employability in contemporary literary discussions and the necessity for precise data regarding the relative efficacy of various employability development possibilities are the driving forces behind the current review. This study aims to perform the first comprehensive review of the variables affecting employability. This will inform the employability development processes of individuals and

organizations by advancing our understanding of techniques for improving individual employability at the higher education level.

METHODOLOGY

The study's goal is to compile a list of all the educational variables that have been found to influence employability in the literature on "education" and "employability." In order to reflect documented cases and research incorporating these distinct educational elements to employability, a thorough literature search was conducted.

For this review, the Preferred Reporting Items for Systematic Reviews (PRISMA) requirements have been adhered to. (Figure 1) One common characteristic of systematic reviews is their ignorance of common guidelines that would enable them to be replicated and deemed sufficiently scientific. This paper adhered precisely to the guidelines on the PRISMA standard checklist, which is a peer-reviewed approach that helps ensure the quality and reproducibility of the revision process. The search method, data extraction, data analysis, and article selection criteria were all outlined in a review protocol that was developed.

Data Sources and Search Strategies

The terms "Employability" and "Education" served as the starting points for the snowball method search. His method starts by looking over a large number of pertinent publications and then looking through the references those papers cite. We also looked at the articles that referenced one of these studies. These extra publications all offered suggestions for papers to be added to the list of studies to be done, thus expanding the body of study.

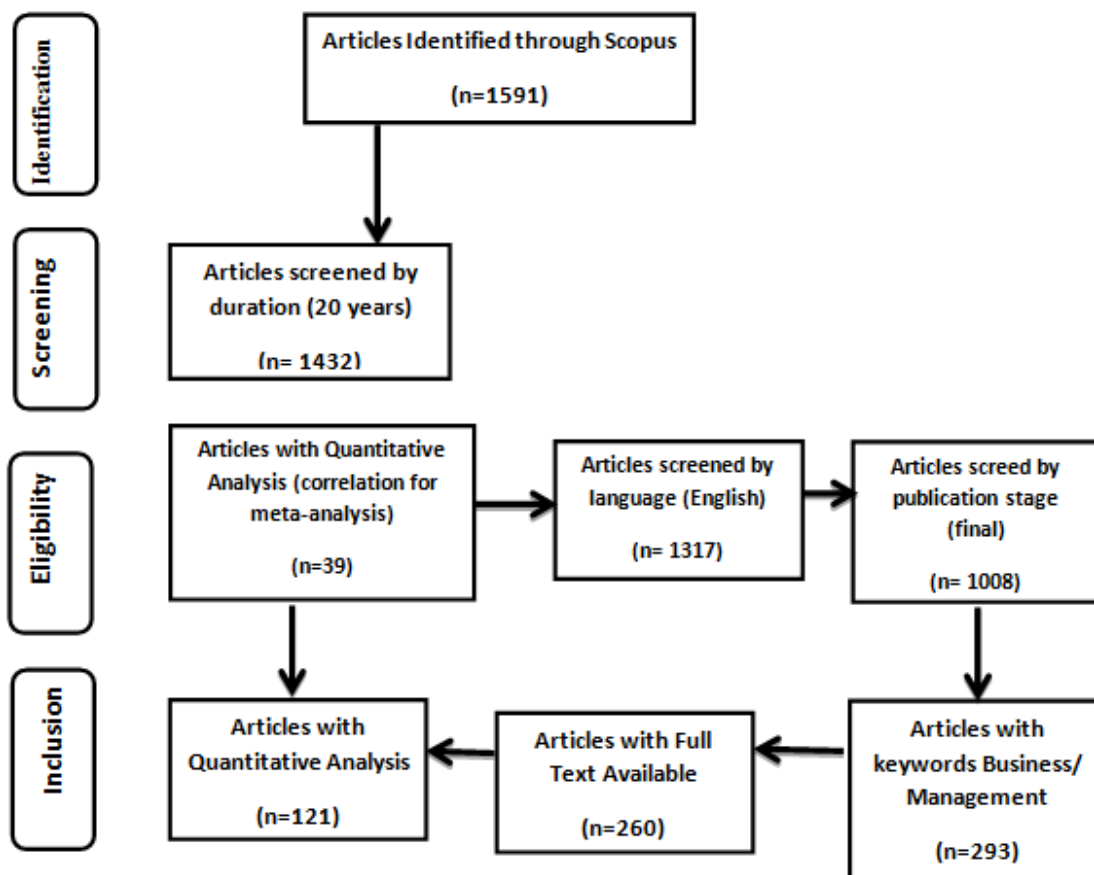
Between 2001 and 2021, we carried out a thorough examination of the electronic database (Scopus). Peer-reviewed research with English-language papers were what we searched for. To locate as many relevant papers as we could, we expanded the scope of our search terms and techniques. "Employability" AND "Higher Education" are the combined keywords used in the search (Scopus). The reference lists of all the eligible articles were found after the electronic search and were searched manually as well.

After a factor was established, we looked for the term "employability" together with the factor's name to determine the component's additional influence. This was the start of a new snowball hunt. We substituted "industry expectations" and "skill gap" for "employability" because there are other concepts that are comparable to it. Additionally, we substituted "education" with "skill development" and "graduation." These extra searches frequently turned up fresh elements that we may look into.

Selection of Studies

After a thorough literature search using Scopus, 1591 published papers were identified with more than 10 Educational factors that affect Employability.

A total of 1591 articles were found in the Scopus database when "Employability" and "Education" were combined. 159 items were eliminated throughout the screening process because the study covers publications published between 2001 and 2021. In the subsequent phase, 309 articles were filtered out due to their pending publication, while 115 articles were eliminated for not being in the English language. After focusing the search on employment and education in the field of business and management, 260 articles were determined to be eligible. After a final screening, 41 papers remained after the publications lacking a correlation matrix were screened out once again in order to facilitate a meta-analysis.



#Fig. 1. Reporting items for the systematic review (PRISMA Checklist)

Characteristics of Included Studies

Regarding methodology, we found a large number of research that were quantitative (n = 121). With 260 findings from mixed methods research and 139 results from qualitative investigations, the proportion of these two types of studies is, nevertheless, fairly balanced.

The theme's growing importance across a range of knowledge domains is evidenced by the 72 distinct journals that have published on the issue under discussion.

Fig.2 represents Journals with more than one paper on this issue under analysis

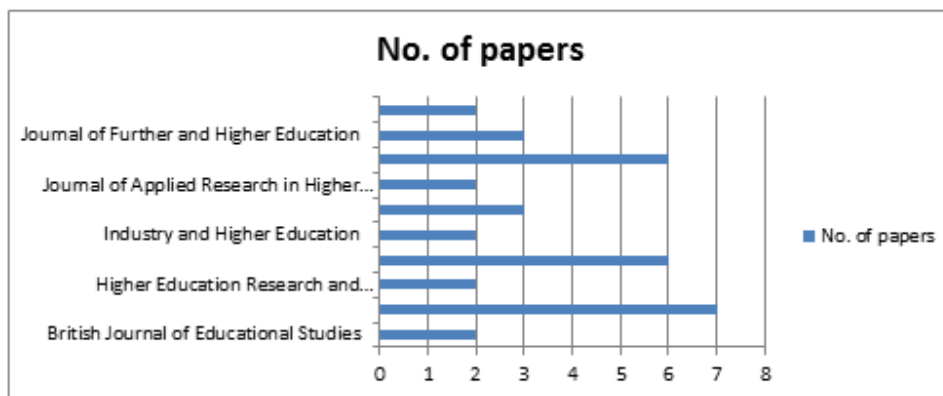


Fig.2: Frequency of paper per Journal

The main areas of expertise covered in published research include management, accounting, marketing, business, and administration. Business, management, industry, higher education, hospitality, skills, curriculum, pedagogy, education, and technical skills are some of the other specialized topics that are covered in the research. Studies have also been conducted that apply to all graduates of higher education rather than concentrating on a particular field of study. Conversely, other studies addressed a broad variety of subjects.

The table below (Table 1) shows the various factors affecting covered by the publications included in our search results.

S.No.	Factors	No.of Papers
1	Subjective career Success	7
2	Non-Technical Skills	4
3	Extra-curricular Activities	5
4	Career-Guidance	4
5	Work Experience	14
6	Culture	6
7	self-confidence	3
8	Problem solving ability	6
9	learning Skills	3
10	Soft Skills	28
11	Ethics	3
12	Attitude	18
13	Communication Skills	4
14	Innovativeness	17
15	Motivation	12
16	Team work	5
17	Self- Management	5

Background

Employability is defined as having the skills and attributes necessary to adapt to the shifting demands of clients and employers, helping a person reach their goals and reach their full potential in the job.

We arrived at our definition after conducting a thorough review of the existing literature (Table 2), and we present it as follows:

A comprehensive summary of the factors identifies including definitions and current researches appear in the Table below

Reference	Definition
Mason, G., Williams, G.,& Cranmer, S. (2009).	Work experience is found to have positive effect on the graduates' ability to find an employment as soon as they finish their graduation and also to secure employment as per the level of education they have. The latter means job quality that measures how significantly their degree is associated with their employment and delivery of skills at workplace.
Jackson, D. (2013)	The ability of the Graduates to perform multiple tasks, work individually, utilize time efficiently, and keep oneself inspired during the task is an important factor for employers and productivity of an organization, yet there are areas which traditional college learning may not find easy to develop.
Arevalo, J., Pitknen, S., Gritten, D., & Tahvanainen, L. (2010)	The Universities and the employers provide the same kind of judgments with regard to the significance of capability and the gap between what they have gained at their higher education and the employers' needs. Employers recognized, as compared to universities, greater gaps in technical skills.
Singh, R., Chawla, G., Agarwal, S., & Desai, A. (2017)	The determinants of employability are found as career-building traits, innovative Skills knowledge, innovative abilities, efficacy, personality attributes and emotional intelligence.
Tavares, O. (2017).	Employability is presumed to be controlled both by the discrete abilities of students and those expected by the employer. The employers state- there is still a discrepancy amidst the skills at HE level and their requirements, that may get improved if HEIs would look at their endowment towards the market needs.
Jerome, C., Lee, J. A. C., & Ting, S. H. (2017)	There is a list of strategies at taught at graduation that is persistently used while their degree and the types of those strategies that students think will help to enhance their High Order Skills. A large number of students also opine that these are the strategies that they need to get through in the tertiary setting.
Dania, J., Bakar, A. R., &	The level of employability skills are affected by the self-perception of

Mohamed, S. (2014)	students, level of their training at industry and how much they participate in the career development accomplishments. Therefore, the environment at education, positive self-concept, students' engagement in employment related activities are seen as important factor in generating employment.
Manzoor, U., Rizwan, A., Demirbas, A., & Hafiz, N. A. S. (2018)	The students are technically well built but are deficient in employability skills that are strongly required for the prompt and sustainable progress in their career. Employers today hire those who are strong in technical as well as non-technical skills to get through the high competition in the market.
Tran, L. H. N. (2018)	Factors that are related to the theoretical university syllabus, changes that are constant in the labor market and students in planning their careers that seemed to be the most influential. There is a skills gap that may arise from a series of reasons that can be from the demand or supply side or from the contextual factors.
Riebe, L., Sibson, R., Roepen, D., & Meakins, K. (2013)	It is important to develop the employability skills and behaviors at the workplace, the employability skills associated with 'working effectively with others' were recognized as useful and necessary. This was not entirely unexpected in the leadership, given that the specific behaviors associated with working effectively with others (such as conflict resolution, influencing others, negotiation, cultural awareness, and the process of teamwork and task collaboration) are taught, practiced, and assessed in multicultural team projects.
Daud, S., Sapuan, N. M., Abidin, N., & Rajadurai, J. (2011)	Managers assign different weightings to different aspects of graduates' performance, and when developing their curriculum, Higher Education Institutions should focus on the development of soft skills and specific personality components such as openness and extroversion behaviors. The use of importance-performance analysis to evaluate managers' perceptions of graduates can identify how graduates are performing and specific problem areas, allowing for better curriculum design for their Higher Education Institution.

The Literature found total 17 factors that affect employability of graduates. All the factors are defined below in Table -4 along with the current research related to them.

Table 4: Summary of Factors Affecting Employability

Factors	Definition	Current research related to the factor
Subjective career Success	understanding of career and its evaluation	<p>A mediating way was found between career capabilities and Subjective career via activities related to employability and all facets of academic content moderating the indirect relation.</p> <p>Subjective career success is often referred to as the resource management conduct, attitudes and personal important resources.</p> <p>Subjective career success can be measured through, work-life balance, job satisfaction and career fulfillment.</p>
on-Technical Skills/Soft Skills	Interpersonal skills include communication abilities, leadership abilities, teamwork abilities, decision-making abilities, and situational awareness. They do not comprise the technical skills mandatory to accomplish the task,	<p>A long-term vision related to employability, applying a formal job-seeking approach with a considerably higher level of engagement in the profession and consideration of the importance of non-technical skills in obtaining the desired work position.</p> <p>In terms of factors influencing non-technical skill development during industrial training, there are some similarities and differences between universities and industries. Universities should close the gap so that students can gain the most valuable experience</p>

	such as ability of an individual to run a machine or do a specific operation. They, on the other hand, supplement these technical skills, making them more efficient and effective.	possible during their industrial trainings, as this is the best platform for students to learn and improve their non-technical skills. Non-technical skills were reported as most important skills for graduates managing the transition from higher education to the workforce. Non-technical skills associated with workplace socialization and familiarization was rated higher than those associated with task completion.
Extra-curricular Activities	An extracurricular activity (ECA), also known as an extra academic activity (EAA) or cultural activity, is a student-led activity that takes place outside of the normal curriculum of a school, college, or university.	Embedded employability-related activities are those that are incorporated into curricula as a formal component of students' learning and may be used to assess them. Co-curricular activities are facilitated by the university but take place outside of the students' formal course of study; they are frequently designed and delivered by central services such as careers provision. Work skills can be developed for students who have less pedagogical and curriculum-related issues through extra-curricular activities (ECAs). However, how effectively these activities are organized to attract students, as well as students' beliefs about the importance of participating in informal learning activities versus curriculum-based activities, have a significant impact.
Career-Guidance	All activities that consist of planned experiences designed to facilitate the development of self-awareness, opportunity awareness, decision learning, and transition learning skills are referred to as career guidance.	By paying adequate attention to enhancing students' employability through career guidance, universities may be responding to students' motivations for entering university, as future employment prospects are an important part of many students' motivations. Career guidance experiences were chosen as the contextual-level factor influencing their self-perceived employability, and their vocational self-concept was proposed as the individual-level factor influencing their self-perceived employability.
Work Experience	Time spent in the workplace learning about a job role, a company, or a career field Work experience isn't just for teenagers. It can be beneficial for career changers and those looking to return to work. It can assist you in learning new skills and deciding what to do.	Students with extensive work-related experience may have a stronger knowledge base of both formal and informal labor markets when negotiating access to occupational fields. Opportunities and demands, as well as how to tailor their profiles accordingly This is a possibility. Improve the emerging professional profiles of the students and allowing them to stand out from the crowd other appropriately qualified individuals. The students with six employability development opportunities (EDOs): curriculum, personal development planning, career development learning, work experience, real-world activities, and extracurricular activities.
Culture	All of a population's ways of life, including arts, beliefs, and institutions, that are passed down from generation to generation	Employees with positive attitudes toward job change and challenging tasks are more likely to be found in organizations that have been successful in implementing an employability culture. Employee experience as a result of academic culture

	Culture has been described as "an entire society's way of life."	emerges as the most powerful predictor of overall performance. Another important predictor of overall performance is student experience as influenced by academic culture.
Self- Confidence	A sense of self-confidence in your abilities and skills It implies that you accept and trust yourself, and that you have a sense of control over your life. You are aware of your own strengths and weaknesses and have a positive self-image.	Self-confidence is an effective way to boost perceived employability. Internal factors are a person's perceptions of his or her own personal characteristics that aid in the search for and acquisition of a desired job Self-confidence can be a situated behavior than a fixed trait, yielding practical suggestions for career management education. We contribute to the debate over teaching excellence by demonstrating a method for measuring learning gain in higher education.
Problem solving ability	the ability to recognize a problem, determine its root cause, and devise all possible solutions to the problem	Problem-solving, along with the other soft skills is an example of employability skill attributes required to enter the workforce and are essential for career success in the workplace. Though most students with adequate skills find employment, they may lack some problem-solving skills in order to reach the top and find employment in tier 1 companies.
Learning Ability	the abilities that assist students in learning, and thus are critical to success at the educational level and beyond	Employability skills such as learning ability, listening ability, writing ability, problem solving ability, and assertiveness ability are valued and required in the workplace. These strategies, such as learning strategy, memory strategy, spelling strategy, problem solving strategy, and motivation strategy, could assist students in easily acquiring the skills. The student has identified their learning needs, as well as an audit of their learning skills and the ways in which they have developed and enhanced these skills over the course of their studies.
Ethics	the study of what is morally good and bad, as well as what is morally right and wrong	Professionals in varied fields must think about ethics because it can have a direct impact on how well they perform on the job. The domain of business ethics is one of the key elements that has come to occupy a significant place in the curriculum and that also to highlight the logic of unlimited perfectness.
Attitude	the way of thinking and feeling towards someone or something that can be positive or negative	There is a link between specific career attitudes and perceived employability, addressing the need for greater conceptual clarity and theoretical integration in determining the antecedents of employability. Many stakeholders in higher education believe that improving graduate employability is a top priority, and this study investigates graduates' experiences with, and attitudes toward, the inclusion of employability-related support in undergraduate degree programmers.
Communication Skills	The ability of expressing or exchanging information through the	Communication skills are frequently cited by employers as one of the most important skills required of accounting graduates. Employers, in particular,

	use of words, sounds, signs, or behaviors, or the expression of your ideas, thoughts, or feelings	believe that graduates frequently lack verbal communication skills. The majority of recent graduates lacked communication skills in terms of clarity, completeness, conciseness, and correctness. Academic courses vary in the amount and complexity of communication skills required. Furthermore, one of the most important differences between jobs is the extent to which they involve dealing with people.
Innovativeness	the ability and imagination to create new things, which speaks to the attribute's duality but only scratches the surface of the importance of innovativeness to business growth and sustainability.	<p>Skill development has a lot of scope for reentering and reformulating, that could help trigger the process of innovative intellectual and representing it amongst the young minds. It has been reported that the youth in this country are eager to contribute to the great nation and help it become a great knowledge economy.</p> <p>The development of an appropriate set of skills as the global language, as well as its use, must be popularized in learning and practicing the innovation. Skill development has a lot of room for revisiting and reformulating, which could help spark the process of innovative thinking and its demonstration in young minds.</p>
Motivation	Change behavior, develop competencies, be creative, set goals, grow interests, make plans, develop talents, and increase engagement.	According to the attribution-based theory of intrapersonal motivation, there is a reciprocal relationship between formal work-related learning and perceived internal employability. Both formal work-related learning and perceived internal employability may be more likely to initiate the attribution process than informal work-related learning and perceived external employability. Offering job resources improves the ability, motivation, and opportunity to continue working. Furthermore, it was discovered that work ability was most negatively related to job demands, whereas employability was most positively related to developmental practices.
Team Work	Working collaboratively with a group of people to achieve a goal, despite any personal conflict between individuals, by attempting to cooperate, using their individual skills, and providing constructive feedback.	<p>A previous assessment of how students completing the employability skills programmer perceive their abilities to perform the skills defined in the framework revealed that cultural and diversity awareness, teamwork, and task collaboration were among the top ten of all forty behaviors, while conflict resolution was among the bottom ten.</p> <p>It is believed that in this demanding and culturally diverse environment as the labor market today, it is critical to promote international and intercultural teamwork and communication skills.</p>
Self-Management	Self-management refers to the need for personal agency (autonomy) and being self-directed in managing one's career, as well as setting and achieving goals that help one become a better	<p>Self-management refers to the need for personal agency (autonomy) and being self-directed in managing one's career as well as setting and achieving goals that help one become a better person. - congruence with the environment.</p> <p>Students should be able to manage their time and tasks in order to be responsible for their learning;</p>

	person. -congruence with the environment	demonstrate autonomy and accountability in setting and achieving personal and group goals; and reflect on their performance feedback in order to identify and act on learning opportunities and self-improvement. These expectations are known as self-management skills, in which students work and learn independently while accepting personal responsibility for their actions.
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DATA ANALYSIS

Using inverse-variance weighted random effects meta-analysis; the pooled mean effect size (r+) was calculated. The inverse-variance method, which assigns a weight to each included effect size equal to the inverse of its variance, allows for more weight to be given to more precise studies. Because of differences in settings, participants, and measurement methods, random-effects meta-analysis was used because significant heterogeneity between effect sizes was expected (Bornstein et al., 2009). Furthermore, the use of random-effects meta-analysis allows the meta-analysis results to be generalized beyond the included studies (Hedges and Vive, 1998). We also calculated the heterogeneity across studies using the Q (a significant result indicates significant heterogeneity (Bornstein et al., 2009)) and I² (values of 25%, 50%, and 75% indicate low, moderate, and high heterogeneity, respectively (Higgins et al., 2003)) statistics. All analyses were performed using Meta Essential 1.5.

RESULTS

Search Results

The electronic search strategy yielded 1591 distinct results. A further 39 were discovered while searching the reference lists for a related meta-analysis. Some of these studies were also chosen based on various search criteria.

Description of the Included Data

The majority of studies were carried out in Western countries, followed by Asian countries and Australia, with the remainder carried out in the rest of the world. The sample sizes ranged from 11 to 1053. Articles in this search were published between 2001 and 2021.

Table 4 summarizes the average random-effects correlations between Various Factors and Employability variables across studies. These Factors were discovered to have moderate to strong associations with employability.

Self-Management was the strongest predictor of intention (r+ = 0.86), followed by Career Guidance (r+ = 0.74) and Learning Ability (r+ = 0.68), Ethics (r+ = -0.7) being the lowest. The combined correlation values were calculated using forest plot in the Meta essentials software. Because some of the variations in observed effect size is to be expected, we ran tests to see if true effect size does varies from study to study. For each effect size, the Q- and I² statistics revealed significant heterogeneity (**Table-5**).

Factor	N	k	r	CI	I ²	Q
Employability-Subjective career Success	1470	4	0.35	0.21-0.48	75.63	12.31
Employability-Non-Technical Skills/Soft Skills	588	3	0.59	-0.62-0.97	98.53	135.67
Employability-Academics	1946	7	0.52	0.38-0.64	37.51	84
Employability-Extra-curricular Activities	476	3	0.14	-0.09-0.35	21.9	2.56
Employability-Career-Guidance	861	2	0.74	-0.099- 1	98.6	71.66
Employability-Work Experience	990	4	0.29	-0.53-0.83	98.6	213.78
Employability-Culture	815	2	0.49	-0.1-0.1	98.46	65.14
Employability-self-confidence	955	3	0.11	-0.83-0.89	98.95	189.94
Employability-Problem solving ability	342	3	0.55	-0.53-0.95	93.51	30.82
Employability-Learning Ability	1405	4	0.68	0.03-0.92	98.96	289.5
Employability-Ethics	793	4	-0.07	-0.69-0.61	97.02	100.59
Employability-Attitude	678	4	0.59	0.18-0.83	91.47	35.17
Employability-Communication Skills	717	3	0.29	-0.05- 0.57	74.25	7.77
Employability-Innovativeness	887	2	0.25	0.86-0.95	91.9	12.34

Employability-Motivation	425	3	0.61	-0.87-0.99	90.75	21.62
Employability-Team Work	810	4	0.65	0.41-0.80	89.03	27.35
Employability-Self-Management	705	3	0.86	0.83-0.89	0	1.01
n = number of participants, k = number of effect sizes included in the analysis, CI = 95% confidence interval, Q and I2 = tests of heterogeneity, r+ = random effects average correlation,						

DISCUSSION

To the best of our knowledge, this is the first study to identify the educational factors that influence employability. Self-management was found to be the most strongly related to employability, followed by career guidance, learning ability, and non-technical or soft skills. The current review adds to the body of knowledge regarding the identification of important moderator variables. Even though the key associations concerning the Employability and Education were significantly different based on the variables with important practical and methodological implications, the associations were found to be robust to the impact of moderators in general.

The results disclosed that most of the papers aimed at determining which factor act as a stimulus for employment or which of these factors should be treated more important to meet rising demands of labour market by the universities and graduates. Strengths of the current study comprise the broad search approach, targeting the published research from the Scopus database, rigorous screening and exclusion and inclusion process and using the established standards (Moher et al., 2009) to direct the design, execution, and reporting of the meta-analysis. It is worth noting, however, that despite the inclusion of a largely homogeneous sample of studies, reported heterogeneity remained high for almost all the associations.

This specifies that there is a existence of other factors also that are not accounted here. Furthermore, this review and meta-analysis involved a comparatively smaller number of studies, which may have limited our ability to discover any significant differences in the analysis of the factors.

The results identify two types of competences: technical competences, also known as core competences or subject-specific competences, which are related to professional practise and strongly linked to areas of knowledge, and transversal competences, also known as soft skills. There is a concern in Asia about language skills, specifically English as a foreign language, indicating a possible area of special interest for academics in this part of the world. We did not come across any other relevant specificity. There is still a scarcity of the research on this topic that could allow the identification of factors that may hinder or enable the individual's employability.

CONCLUSION

The purpose of this paper is to conduct a systematic review and meta analysis on The effect of factors at education on employability. It also considers how higher education institutions approach the promotion and development of an Individual's employability. Given that different countries and higher education systems place varying degrees of importance on publishing in these specific databases, this choice may have resulted in the underrepresentation of some regions of the world. We propose that future research include other databases in order to identify additional sources of heterogeneity. We propose that future research include other databases in order to identify additional sources of heterogeneity.

The majority of the studies in the corpus of analysis are concerned with the debate over gaps between the employability competencies developed in higher education and the needs of employers, as well as specificities associated with competence development. Our findings indicate that higher education institutions are concerned with how to improve graduate employability development. Graduate employability all over the world necessitates a strong sense of innovation and collaboration practices in higher education. We were unable to locate any papers debating the importance of developing governmental and institutional policies that promote widespread implementation of measures aimed at increasing employability in higher education. While the employers are trying to bring this matter to the attention of the government officials, the improvement of employability remains an area that is dominated by the academics and which is frequently based on the individual decision-making instead of the integrative institutional approach described in the papers. Institutions of higher learning should be talent engines that nurture innovation and skill development, not hostages of organisations; however, a fruitful collaboration can be co-constructed and fostered. Furthermore, despite several studies addressing this issue, there is still a lack of understanding of how these competencies can be fostered and developed. More in-depth research is required to understand how to effectively evaluate and develop this set of competencies. The development of skills iat higher education is intensely related to the Sustainable Development Goals of WHO.

At the multinational, national, and institutional levels, there is a need for deliberate and evidence-based policy development and implementation. Regardless of the importance of individual faculty members' initiative in inserting the issue into their courses or making efforts to address the topic on their curricular units, recommendations about formalisation and recognition of the importance of competence development for employability in each higher education institution's strategic development plan should be made. Government and institutional policies should be established, and higher education institutions must prioritise this issue in order to foster and formalise the importance of bridging the gap between higher education institutions' and employers' perceptions of competence development.

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TRANSITIONING TO CLEAN ENERGY

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The transition to clean energy represents a pivotal juncture in human civilization's journey towards sustainability and environmental stewardship. With the increasing recognition of the detrimental effects of fossil fuel dependency on climate change and environmental degradation, there is a pressing need to accelerate the adoption of renewable energy sources.

This abstract examines the multifaceted aspects of transitioning to clean energy and its implications for global sustainability. It delves into the technological, economic, and societal dimensions of this transition, highlighting both the challenges and opportunities it presents.

Technologically, the transition involves harnessing renewable resources such as solar, wind, hydroelectric, and geothermal energy, while also advancing energy storage solutions and grid infrastructure to ensure reliability and stability. Innovations in these areas are crucial for overcoming intermittency issues associated with certain renewable sources and for facilitating their integration into existing energy systems.

Moreover, the transition to clean energy is not merely a technical or economic endeavor but also a social one. It requires engaging diverse stakeholders, including governments, industries, communities, and individuals, in collaborative efforts aimed at fostering a culture of sustainability and environmental responsibility. Education and awareness campaigns play a crucial role in garnering public support and driving behavioral changes conducive to a cleaner energy future.

In conclusion, transitioning to clean energy is imperative for safeguarding the planet's future and ensuring the well-being of current and future generations. By embracing innovation, collaboration, and collective action, humanity can navigate this transition successfully, paving the way for a more sustainable, resilient, and equitable energy future.

Keywords-Energy Efficiency, Air Quality Improvement, Resource Conservation & Phasing Out Fossil Fuels

1. INTRODUCTION TO CLEAN ENERGY

Clean energy typically refers to energy generated from renewable sources or other sustainable methods that have minimal negative impact on the environment compared to traditional energy sources like fossil fuels (coal, oil, and natural gas). Clean energy sources include:

- 1.1 Renewable Energy:** This includes energy derived from sources that are naturally replenished on a human timescale, such as solar energy (from sunlight), wind energy, hydroelectric energy (from flowing water), tidal energy (from ocean tides), and geothermal energy (from heat within the Earth).
- 1.2 Nuclear Energy:** While controversial due to concerns about safety and waste disposal, nuclear energy is considered clean in the sense that it produces minimal greenhouse gas emissions during electricity generation.
- 1.3 Clean Technologies:** These encompass various technologies and processes designed to reduce pollution and environmental impact, such as carbon capture and storage (CCS), which captures carbon dioxide emissions from power plants and other industrial sources and stores them underground to prevent them from entering the atmosphere.

Clean energy is often promoted as a way to mitigate climate change by reducing greenhouse gas emissions, improving air quality, and decreasing dependence on finite fossil fuel resources. Additionally, clean energy technologies can also create new job opportunities and stimulate economic growth in the renewable energy sector.

India has remained steadfast in its transition toward smooth power, achieving the fastest pace of renewable ability addition amongst all essential economies and formidable transition goals articulated via top Minister Modi in India's Panchamrit statement at COP26. India stands at the forefront of addressing the global project of climate change. during the last 9 years, India has witnessed the Indian campaign in opposition to weather change as it has already executed our commitment of 40% energy manufacturing from renewable assets, method ahead of the 2030 Paris settlement goal.the sector's 5th-biggest economy, India can reap electricity independence thru easy technology via 2047. Hon'ble prime Minister Shri Narendra Modi's Atmanirbhar Bharat

push spans from a big renewable potential addition to electric powered mobility, saving billions of greenbacks in imports. easy electricity will lessen and inflation-proof India's energy expenditure as renewables, EV batteries, and hydrogen infrastructure are capital property with hastily falling fees.

2. OBJECTIVE OF THE STUDY

The objectives of clean energy encompass various goals aimed at promoting the use of renewable and sustainable energy sources while reducing reliance on fossil fuels and mitigating environmental impacts. Some key objectives include:

1. Mitigating Climate Change
2. Improving Air Quality
3. Enhancing Energy Security
4. Promoting Sustainable Development
5. Conserving Natural Resources
6. Fostering Innovation and Technological Advancement

3. NEED OF TRANSITIONING TO CLEAN ENERGY

Transitioning to clean energy is imperative for several reasons, encompassing environmental, economic, social, and geopolitical factors:

- 3.1 Mitigating Climate Change:** The burning of fossil fuels releases greenhouse gases (GHGs) like carbon dioxide into the atmosphere, contributing to global warming and climate change. Transitioning to clean energy sources such as solar, wind, and hydroelectric power can significantly reduce GHG emissions, helping to mitigate the impacts of climate change such as rising temperatures, extreme weather events, and sea level rise.
- 3.2 Improving Air Quality and Public Health:** Fossil fuel combustion not only emits GHGs but also releases harmful air pollutants like sulfur dioxide, nitrogen oxides, and particulate matter, leading to air pollution and negative health impacts such as respiratory illnesses, cardiovascular diseases, and premature deaths. Clean energy technologies produce little to no air pollutants, thereby improving air quality and safeguarding public health.
- 3.3 Enhancing Energy Security:** Dependence on imported fossil fuels can pose risks to energy security due to supply disruptions, price volatility, and geopolitical tensions. Transitioning to clean energy sources like solar, wind, and geothermal power reduces reliance on finite and geopolitically sensitive resources, enhancing energy independence and resilience to external shocks.
- 3.4 Promoting Economic Growth and Job Creation:** The transition to clean energy creates new economic opportunities and jobs in sectors such as renewable energy development, manufacturing, installation, and maintenance. Investments in clean energy projects stimulate economic growth, attract capital investment, and spur innovation and technological advancement, leading to a more sustainable and resilient economy.
- 3.5 Fostering Energy Access and Equity:** Clean energy technologies can expand access to affordable and reliable electricity, particularly in underserved rural and remote areas where grid infrastructure is limited. Distributed renewable energy solutions like solar home systems and mini-grids can provide clean and sustainable energy access to off-grid communities, improving living standards, supporting economic development, and reducing energy poverty.
- 3.6 Preserving Natural Resources and Ecosystems:** Extracting and burning fossil fuels not only contribute to climate change but also entail environmental degradation, habitat destruction, and ecosystem disruption. Transitioning to clean energy sources reduces the pressure on natural ecosystems and habitats, conserves biodiversity, and mitigates the negative impacts of resource extraction, pollution, and land degradation associated with fossil fuel production.
- 3.7 Meeting International Commitments and Targets:** Many countries have committed to reducing GHG emissions and transitioning to a low-carbon economy under international agreements such as the Paris Agreement. Transitioning to clean energy is essential for achieving these emission reduction targets and fulfilling national and international climate commitments, contributing to global efforts to limit global warming and prevent catastrophic climate impacts.

Overall, transitioning to clean energy is essential for addressing the interconnected challenges of climate change, air pollution, energy security, economic development, and social equity, while paving the way towards a more sustainable, resilient, and prosperous future for all.

4. SCOPE OF TRANSITIONING TO CLEAN ENERGY

The scope of transitioning to clean energy is vast and encompasses various sectors and dimensions. Here are some key aspects of the scope of transitioning to clean energy:

- 4.1 Electricity Generation:** Transitioning to clean energy involves shifting away from fossil fuel-based electricity generation to renewable energy sources such as solar, wind, hydroelectric, and geothermal power. This transition involves deploying clean energy technologies, such as solar panels, wind turbines, and hydroelectric dams, to generate electricity with minimal environmental impact.
- 4.2 Transportation:** Clean energy initiatives aim to decarbonize the transportation sector by promoting electric vehicles (EVs), hydrogen fuel cell vehicles, and biofuels derived from renewable sources. Electrification of transportation and the development of sustainable transportation infrastructure, including EV charging stations and public transportation systems powered by clean energy, are key components of this transition.
- 4.3 Buildings and Infrastructure:** Transitioning to clean energy involves improving energy efficiency in buildings and infrastructure through measures such as energy-efficient building design, insulation, lighting, and heating/cooling systems. Additionally, integrating renewable energy technologies like rooftop solar panels and geothermal heating/cooling systems into buildings can further reduce energy consumption and reliance on fossil fuels.
- 4.4 Industry:** Clean energy initiatives target industrial sectors to reduce emissions and energy consumption through the adoption of clean technologies, process optimization, and the use of renewable energy sources in manufacturing processes. This includes transitioning to renewable energy-powered industrial facilities, implementing energy-efficient practices, and promoting the circular economy to minimize resource consumption and waste generation.
- 4.5 Agriculture and Land Use:** Transitioning to clean energy involves promoting sustainable agricultural practices, such as agroforestry, organic farming, and soil carbon sequestration, to reduce emissions and enhance carbon sinks. Additionally, utilizing bioenergy derived from agricultural residues, crop residues, and dedicated energy crops can contribute to renewable energy production while reducing reliance on fossil fuels.
- 4.6 Research and Development:** The scope of transitioning to clean energy includes research and development efforts to advance clean energy technologies, improve their performance and cost-effectiveness, and address technical challenges and barriers to deployment. This includes innovation in renewable energy generation, energy storage, grid integration, and energy efficiency technologies, as well as interdisciplinary research on energy systems and policy.
- 4.7 Policy and Regulation:** Clean energy transitions require supportive policy frameworks, regulations, and incentives at the local, national, and international levels to accelerate deployment and investment in clean energy technologies. This includes measures such as carbon pricing, renewable energy targets, energy efficiency standards, subsidies for clean energy deployment, and policies to phase out fossil fuel subsidies.
- 4.8 Education and Awareness:** Transitioning to clean energy involves raising awareness and building public support for clean energy initiatives through education, outreach, and stakeholder engagement. This includes promoting energy literacy, providing information on the benefits of clean energy, and fostering community participation in clean energy projects and initiatives.

Overall, the scope of transitioning to clean energy is multifaceted and requires coordinated efforts across sectors, stakeholders, and geographical scales to achieve the goals of decarbonization, energy security, and sustainable development.

5. BRIEF LITERATURE REVIEW

A literature review of clean energy provides insights into various aspects of renewable energy technologies, policies, economics, environmental impacts, and societal implications. Here's a brief overview:

- 5.1 Technological Advances:** Numerous studies highlight technological advancements in clean energy, including improvements in solar photovoltaic (PV) efficiency, wind turbine design, energy storage

technologies, and grid integration methods. These advancements are essential for enhancing the reliability, scalability, and cost-effectiveness of clean energy solutions.

- 5.2 Policy Frameworks:** Scholars examine the role of policy frameworks in promoting the adoption of clean energy. Research often assesses the effectiveness of renewable energy policies such as feed-in tariffs, renewable portfolio standards, tax incentives, and carbon pricing mechanisms in driving investments and deployment of clean energy technologies.
- 5.3 Economic Analysis:** Economic analyses explore the costs and benefits of transitioning to clean energy compared to fossil fuels. Studies evaluate the levelized cost of electricity (LCOE) for renewable energy technologies, the impacts of subsidies and incentives on clean energy deployment, and the potential for job creation and economic growth in the renewable energy sector.
- 5.4 Environmental Impacts:** Research on the environmental impacts of clean energy technologies examines their life cycle emissions, land use requirements, water consumption, and ecosystem impacts. Studies often compare the environmental footprint of renewable energy sources to fossil fuels, assessing their contributions to mitigating climate change and reducing air and water pollution.
- 5.5 Energy Access and Equity:** Scholars investigate the role of clean energy in improving energy access and equity, particularly in developing countries and underserved communities. Research explores the socio-economic benefits of decentralized renewable energy systems, off-grid electrification initiatives, and community-owned clean energy projects in addressing energy poverty and promoting social inclusion.
- 5.6 Integration Challenges:** Studies highlight challenges and opportunities associated with integrating intermittent renewable energy sources into the electricity grid. Research examines grid stability, energy storage solutions, demand-side management strategies, and smart grid technologies to facilitate the seamless integration of clean energy while maintaining reliability and resilience of the power system.
- 5.7 Public Perception and Acceptance:** Research on public perception and acceptance of clean energy technologies explores factors influencing attitudes, beliefs, and behaviors towards renewable energy adoption. Studies investigate drivers and barriers to public support for clean energy, communication strategies for promoting awareness and engagement, and the role of social norms and values in shaping energy choices.
- 5.8 Global Perspectives:** Literature reviews often provide a global perspective on clean energy transitions, highlighting regional differences in energy resources, policy priorities, and socio-economic contexts. Comparative analyses assess clean energy deployment trends, policy effectiveness, and lessons learned from diverse national and regional experiences in transitioning to renewable energy.

Overall, the literature on clean energy offers a comprehensive understanding of the opportunities, challenges, and implications of transitioning to renewable energy sources, informing policy decisions, technological innovation, and public discourse on sustainable energy futures.

6. RESEARCH METHODOLOGY

Research methodology refers to the systematic process of planning, executing, and evaluating research. It is a crucial aspect of any research paper as it provides a structured framework for conducting investigations and obtaining reliable results.

7. DATA COLLECTION

Secondary data has been collected from magazines, books, newspapers & internet. The main focus of this research paper is to identify the need for transitioning to clean energy.

8. FINDINGS, AND IMPLICATIONS HOW CLEAN ENERGY IS CHANGING THE WORLD?

Clean energy is revolutionizing the world in multiple ways, impacting the environment, economies, and societies. Here are some ways in which clean energy is changing the world:

- 8.1 Reducing Carbon Emissions:** Clean energy sources such as solar, wind, hydroelectric, and nuclear power produce significantly fewer greenhouse gas emissions compared to fossil fuels like coal, oil, and natural gas. This shift helps mitigate climate change and its associated impacts, such as extreme weather events, rising sea levels, and disruptions to ecosystems.
- 8.2 Improving Air Quality:** Traditional energy sources like coal and oil release pollutants such as sulfur dioxide, nitrogen oxides, and particulate matter, contributing to air pollution and respiratory diseases.

Transitioning to clean energy helps reduce these harmful emissions, leading to cleaner air and improved public health.

8.3 Promoting Energy Independence: By harnessing renewable energy sources abundant within a region (e.g., sunlight, wind, water), countries can reduce their dependence on imported fossil fuels. This enhances energy security, reduces vulnerability to geopolitical tensions, and fosters economic stability.

8.4 Creating Jobs and Economic Growth: The clean energy sector is a significant source of job creation and economic growth. Investments in renewable energy infrastructure, such as solar and wind farms, manufacturing facilities, and research and development, stimulate employment across various skill levels and industries.

8.5 Driving Technological Innovation: The transition to clean energy spurs innovation in energy technologies and infrastructure. Advancements in renewable energy systems, energy storage solutions, smart grid technologies, and energy-efficient appliances are transforming the way energy is generated, distributed, and consumed.

8.6 Fostering Sustainable Development: Clean energy development aligns with the principles of sustainable development by meeting the needs of the present without compromising the ability of future generations to meet their own needs. It promotes environmental stewardship, social equity, and economic prosperity over the long term.

8.7 Mitigating Energy Poverty: Access to affordable and reliable energy is essential for socioeconomic development. Clean energy technologies, particularly decentralized solutions like solar home systems and microgrids, offer cost-effective alternatives for electrifying remote and underserved communities, helping to alleviate energy poverty.

8.8 Addressing Environmental Justice: Clean energy initiatives can contribute to environmental justice by reducing the disproportionate environmental burdens borne by marginalized and frontline communities. Transitioning away from polluting energy sources can improve the health and quality of life in these communities, which often bear the brunt of industrial pollution.

8.9 Environmentally Friendly Company “EQUINOR”: I am associated with a company named “Equinor” for the past six months specially for this research paper. I have observed the following key-points regarding the eco-friendly/environmentally friendly company, “Equinor”. Following are the key factors regarding the company:

8.9.1 About Equinor: EQ is an international energy company and a Fortune 500 company (full name: **EQUINOR INDIA AS**). EQ India was invited by the Indian government in 2019 to join and participate in the construction of India's new energy industry.

EQ is an international energy company committed to creating long-term value in a low-carbon future. Its purpose is to transform natural resources into human energy and social progress.

EQ's project portfolio spans oil, gas, new energy, offshore power, renewables and low-carbon solutions as well as exploration and construction, and it aims to become a net-zero energy company by 2050. Headquartered in Stavanger, EQ is the leading operator on the Norwegian continental shelf. It is currently operating in approximately 30 countries around the world.

8.9.2 Equinor in India: EQ Group signs 15-year LNG supply agreement with India. India's ambition is to achieve decarbonization and expand the scale of renewable energy. To deploy offshore wind power in the states of Gujarat and Tamil Nadu, the Indian government and EQ Group are collaborating on relevant policies, strategies and solutions to achieve the low-carbon transformation of India's energy industry. The overall goal is to support the Ministry of New Energy to achieve the goal of 30GW of offshore wind power by 2030.

Also, through the five years of development of EQ Group in India, combined with India's special geographical advantages, it has also made a visible contribution to India's environmental governance and breakthroughs in new energy projects. Especially in offshore wind energy, onshore wind energy, solar energy, and energy storage, there have been breakthrough changes

Overall, the adoption of clean energy is catalyzing a global transition toward a more sustainable, equitable, and resilient energy system, with far-reaching benefits for both people and the planet.

9. HOW CLEAN ENERGY IS IMPACTING THE INDIAN ECONOMY?

The India Energy Week (conducted during 6-9 February, 2024) was organized by the Indian Government under the presence of Hon'ble Prime Minister Shri Narendra Modi ji for promoting clean energy campaign in India.

9.1 Pradhan Mantri Ujjwala Yojana: To ensure smoke-free kitchens, more than 10 Crore people got free LPG connections and Refill Subsidy of Rs. 300 each.

9.2 National Green Hydrogen Mission: Accelerating the deployment of Green Hydrogen as a clean energy fuel, to decarbonize industrial, mobility and energy sectors.

9.3 Pradhan Mantri Kusum Yojana: Kusum Yojana, which provides energy and water security, provides almost 2.46 lakh farmers were benefited. This will increase agricultural income and curb environmental pollution.

9.4 Ethanol blended Petrol: It will reduce dependence on imports, save foreign exchange and boost the domestic agriculture sector.

9.5 Global Biofuels Alliance: India is playing a leadership role on the sustainable path to net-zero and reducing dependence on fossil fuels.

9.6 Renewable energy installed capacity: In March 2014, the capacity was increased, by 136.27% from **76 GW to 179.57 GW** by November 2023. India ranked fourth in installed renewable capacity, reflecting its commitment to net-zero.

10. ADVANTAGES OF CLEAN ENERGY

Clean energy offers numerous advantages over traditional fossil fuels. Here are some key advantages:

- 10.1 Reduced Greenhouse Gas Emissions:** Clean energy sources such as solar, wind, hydroelectric, and nuclear power generate electricity with significantly lower or zero greenhouse gas emissions compared to fossil fuels. This helps mitigate climate change by reducing the amount of carbon dioxide and other pollutants released into the atmosphere.
- 10.2 Improved Air Quality:** Unlike fossil fuel combustion, which emits pollutants such as sulfur dioxide, nitrogen oxides, and particulate matter, clean energy technologies produce minimal air pollution. This leads to cleaner air, reducing respiratory illnesses and improving overall public health.
- 10.3 Energy Security:** Clean energy sources are typically abundant and widely distributed, reducing dependence on imported fossil fuels and enhancing energy security. By harnessing locally available resources like sunlight, wind, and water, countries can strengthen their energy independence and resilience to supply disruptions.
- 10.4 Renewable and Sustainable:** Clean energy sources are renewable and sustainable, meaning they can be replenished naturally and indefinitely. Unlike finite fossil fuel reserves, renewable energy resources such as sunlight, wind, and water are inexhaustible, making them a reliable long-term energy solution.
- 10.5 Job Creation and Economic Growth:** The clean energy sector is a significant source of employment and economic growth. Investments in renewable energy projects, manufacturing, installation, and maintenance create jobs across various skill levels and sectors, driving economic development and innovation.
- 10.6 Technological Innovation:** The transition to clean energy spurs innovation in energy technologies and infrastructure. Advances in renewable energy systems, energy storage, smart grid technologies, and energy efficiency drive technological progress and competitiveness in the global marketplace.
- 10.7 Cost-Effectiveness:** The cost of clean energy technologies, particularly solar and wind power, has declined significantly in recent years, making them increasingly competitive with fossil fuels. As technology improves and economies of scale are realized, clean energy is becoming a cost-effective and affordable option for electricity generation.
- 10.8 Diverse Energy Portfolio:** Clean energy diversifies the energy portfolio, reducing reliance on a single energy source and increasing energy resilience. By integrating a mix of renewable energy sources and energy storage solutions, countries can enhance grid stability and adaptability to changing energy demands and environmental conditions.
- 10.9 Environmental Protection:** Clean energy technologies minimize environmental degradation and habitat destruction associated with fossil fuel extraction, processing, and transportation. They also

reduce the risk of environmental disasters such as oil spills and groundwater contamination, protecting ecosystems and biodiversity.

10.10 Community Benefits: Clean energy projects can provide direct benefits to local communities, including reduced pollution, job creation, increased tax revenue, and investment in local infrastructure and services. Community ownership models and participatory decision-making processes can further empower local residents and stakeholders in the clean energy transition.

Overall, the advantages of clean energy extend beyond environmental protection to encompass economic, social, and health benefits, contributing to a more sustainable and equitable energy future.

11. LIMITATIONS OF CLEAN ENERGY

While clean energy offers numerous advantages, it also faces several limitations and challenges. Some of the key limitations of clean energy include:

- 11.1 Intermittency and Variability:** Many clean energy sources, such as solar and wind power, are intermittent and variable, meaning they are not available consistently or predictably. This intermittency can pose challenges for grid integration and reliability, requiring backup power sources or energy storage solutions to ensure a stable supply of electricity.
- 11.2 Energy Storage Constraints:** Energy storage technologies, such as batteries and pumped hydro storage, are essential for balancing supply and demand in renewable energy systems and addressing intermittency issues. However, current energy storage solutions face limitations in terms of cost, capacity, efficiency, and scalability, hindering widespread adoption and integration into the grid.
- 11.3 Land and Resource Requirements:** Clean energy infrastructure, such as solar farms, wind turbines, and hydropower dams, often requires significant land and natural resources for development and operation. This can lead to land use conflicts, habitat disruption, and environmental impacts, particularly in ecologically sensitive areas or densely populated regions.
- 11.4 Transmission and Infrastructure Challenges:** Clean energy resources are often located in remote or inaccessible areas, requiring extensive transmission infrastructure to deliver electricity to population centers and demand centers. Building and upgrading transmission lines and grid infrastructure can be costly and time-consuming, and regulatory hurdles may delay or impede project development.

12. CONCLUSION

In conclusion, embracing clean energy is not just a choice but a necessity for the sustainability of our planet and the well-being of future generations. The evidence overwhelmingly supports the urgent need to transition away from fossil fuels towards renewable sources such as solar, wind, hydro, and geothermal power.

Clean energy offers numerous benefits, including reducing greenhouse gas emissions, mitigating climate change, improving air quality, and creating new job opportunities in the burgeoning green economy. Moreover, it enhances energy security by diversifying energy sources and reducing dependence on finite fossil fuel reserves, which are subject to geopolitical tensions and price volatility.

By working together to harness the power of clean energy, we can mitigate the impacts of climate change, protect the environment, and build a more resilient and equitable world for current and future generations. The time to act is now, and the benefits of embracing clean energy are not just environmental but economic, social, and ethical as well.

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RELATIONSHIP OF WORK RELATED FACTORS WITH BURNOUT IN LIFE INSURANCE COMPANIES

Naveela¹ and Dr. Kanchan Rani²¹Research Scholar and ²Assistant Professor, Department of Commerce & Management, Shri Guru Granth Sahib World University, Fatehgarh Sahib**ABSTRACT**

This research paper investigates the prevalence and factors contributing to job burnout among employees in life insurance companies. Job burnout is a significant concern that affects employees' well-being and organizational productivity. Using a Chi-Square analysis, this study explores the relationship between job burnout and various work-related variables such as work load, Lack of control & interpersonal conflict. Data were collected through a comprehensive questionnaire distributed among life insurance company employees.

Keywords: Job burnout, Chi-square, Life Insurance Company

INTRODUCTION

In today's fast-paced and demanding world, burnout has become a prevalent issue affecting individuals across various professions and walks of life. Burnout refers to a state of physical, emotional, and mental exhaustion caused by prolonged stress, typically associated with work or caregiving responsibilities. It is characterized by feelings of depletion, cynicism, and a diminished sense of accomplishment. Burnout is more than just feeling tired or stressed. It is a chronic condition that can have serious consequences on a person's well-being and overall quality of life. While work-related burnout is often discussed, it can also arise from other sources, such as personal relationships, caregiving duties, or even pursuing personal goals relentlessly. The World Health Organization (WHO) recognizes burnout as an occupational phenomenon in its International Classification of Diseases. However, it is important to note that burnout can affect anyone, irrespective of their profession or job title. Students, parents, caregivers, and individuals in high-pressure careers are particularly susceptible to experiencing burnout. The causes of burnout are multifaceted and can vary from person to person. Factors such as excessive workload, long working hours, lack of control over one's work, inadequate support from colleagues or supervisors, and a misalignment between personal values and organizational goals can contribute to burnout. Additionally, the constant presence of technology and the inability to disconnect from work can exacerbate the problem, blurring the boundaries between professional and personal life. Recognizing the signs of burnout is crucial for early intervention and prevention. Symptoms may manifest in physical, emotional, and behavioural domains. Physical symptoms can include chronic fatigue, insomnia, headaches, and changes in appetite. Emotionally, individuals may feel detached, irritable, and experience a sense of emptiness. Behavioural signs may involve withdrawal from social activities, reduced productivity, and an increased reliance on unhealthy coping mechanisms. Addressing burnout requires a multifaceted approach. Organizations can play a significant role by implementing policies that promote work-life balance, providing support systems, and fostering a positive work environment. Individuals can practice self-care, set boundaries, seek social support, and engage in stress-management techniques to mitigate the effects of burnout. In this era of heightened awareness about mental health and well-being, understanding burnout and its impact is essential. By acknowledging its existence, promoting open conversations, and implementing preventive measures, we can strive to create healthier, more sustainable work and life environments for everyone.

Meaning of Burnout: -

The term "burnout" refers to a state of physical, emotional, and mental exhaustion caused by chronic and excessive stress. It is a condition that often occurs as a result of prolonged and overwhelming work or caregiving responsibilities, although it can also stem from other areas of life. Burnout is characterized by feelings of depletion, cynicism, and a diminished sense of accomplishment. When someone experiences burnout, they typically feel completely drained, both physically and emotionally. They may find it challenging to muster the energy or motivation to perform their tasks or fulfil their responsibilities. There is a sense of chronic fatigue that goes beyond normal tiredness. This exhaustion can persist even after periods of rest or vacation.

Burnout in Life Insurance

Burnout in the context of life insurance refers to the phenomenon where professionals in the life insurance industry experience chronic exhaustion, emotional fatigue, and a sense of reduced effectiveness in their work due to prolonged and excessive stress. While burnout can occur in any profession, it presents unique challenges and considerations within the life insurance field. Life insurance professionals often face a demanding and high-pressure work environment. They are responsible for handling sensitive and emotionally charged situations,

such as providing support to clients during times of loss or financial hardship. Additionally, they must navigate complex policies, regulations, and ever-changing market conditions. The combination of these factors, along with high workloads and performance expectations, can contribute to the development of burnout. The specific causes of burnout in the life insurance industry may include long working hours, stringent sales targets, high levels of stress related to meeting client needs and expectations, and the emotional toll of dealing with issues related to mortality and financial stability. Additionally, the inherent nature of the job, which often involves repetitive tasks, paperwork, and administrative responsibilities, can contribute to feelings of monotony and reduced job satisfaction. Burnout in the life insurance sector can have significant consequences. It not only affects the well-being and mental health of insurance professionals but can also impact the quality of service they provide to clients. Burnout can lead to decreased productivity, increased errors or omissions, strained relationships with colleagues and clients, and even attrition within the industry. To address and prevent burnout in the life insurance field, organizations can implement strategies such as promoting work-life balance, providing adequate support and resources for employees, fostering a positive and collaborative work environment, and offering training and development opportunities to enhance job satisfaction and growth. Additionally, individuals can take steps to manage their own well-being by practicing self-care, setting boundaries, seeking support from colleagues or mentors, and developing coping mechanisms for stress.

LITERATURE REVIEW

Dua (1994) looked at the viability of different reflection methods and presumed that the act of reflection diminished numerous issue practices or maladaptive practices. He additionally inferred that reflection systems worked on enthusiastic and physical wellbeing and decreased the recurrence of musings.

Byrne (1994) investigated the effect of authoritative and individual factors on burnout (i.e., passionate depletion, depersonalization and diminished individual achievement) across rudimentary, middle of the road and optional teachers. The investigation yielded the significance of job struggle, work over-burden, study hall environment, dynamic and companion support as hierarchical determinants of educators' burnout.

Adkins and Caldwell (2004) secured that position fulfillment was decidedly connected with how much representatives fit into both the general culture and subculture in which they worked. An apparent jumble of the association's way of life and what representatives felt the way of life ought to be is identified with a number of adverse results including lower work fulfillment, higher occupation strain, general pressure, and turnover plan.

Girgin & Baysal (2005) examined that burnout includes Highbrow & physical emotions; there are some signs of negativity in individuals who has burnout syndrome. People cannot focus on their work; they don't want to visit their workplace. The findings of this research concluded that burnout syndrome create a nest of negativity around employee which slow down the work & create barriers to productivity etc.

Akhtar and Lee (2010) considered occupation requests assets model and the preservation of assets Model of occupation burnout into a bound together hypothetical structure. The information was gathered through a mail poll review among attendants standing firm on administrative footholds in the Emergency clinic Authority of Hong Kong. From a PC created irregular example of medical attendants, 543 (84.3% ladies) returned usable reviews, adding up to a reaction pace of 24.2%. Underlying condition demonstrating was utilized to test the proposed ways beginning from work requests and occupation assets to the center occupation burnout measurements, to be specific, passionate fatigue and depersonalize. Results upheld the incorporated model, demonstrating that work requests and occupation assets had varying impacts on the burnout measurements. The impact of occupation requests was more grounded and incompletely intervened the impact of occupation assets.

Rich, LePine, and Crawford (2010) directed an investigation on 245 firemen and they discovered that work commitment assumes a critical part in partner worker qualities to their general exhibition. The outcome demonstrated that work commitment goes about as a middle person between representatives attributes including their core self -assessments, authoritative help and worth compatibility and undertaking execution also, citizenship conducts. Results feature the relationship between workers attributes and commitment, just as among commitment and positive authoritative results.

Misra and Sahu (2012) led an investigation on burnout and job weight on an example of 240 instructors. They tracked down that the instructor's experienced low degree of burnout. The correlational study tracked down that authoritative job pressure was emphatically and fundamentally related with two components of burnout viz., enthusiastic fatigue and depersonalization, yet it did not report any huge connection between hierarchical job pressure and individual achievement measurement of burnout. Job stagnation arose as the lone component of authoritative job pressure which had shown a positive and huge relationship with the passionate weariness and

depersonalization measurements of burnout, yet adverse relationship with individual achievement i.e., the third element of burnout.

Pule k.jankome, M. mangoriand, MS.GuillerminaRitacco (2013) conduct the research on the impact of stress & burnout on employee’s performance at Botswana power corporation (south Africa). The data has been collected from 93 employees of electricity utilities. They explored the extent of stress & burnout impact on overall productivity of BPC. In this research its found that most employees who felt stress their performance went down.

Mohd.AbasBhat (January 2013) provided in his study that stress is universal element & every individual has to face it. His study focused to find the stress level of bank employees. He also examined the relationship between job stress & work life imbalance, job overload etc. he concluded that work life balance & work relationship are major source of burnout & stress.

Innanen et al. (2014) directed a longitudinal examination to inspect the profiles of burnout, work commitment and workaholic among exceptionally instructed representatives. Consequences of their discovering showed that workers having drawn in profile were related with undeniable degrees of energy and commitment which are the elements of work commitment, then again representatives with depleted obsessive worker profile were connected with burnout measurements for example enthusiastic fatigue, pessimism and furthermore with workaholic. Further drew in representatives experienced life fulfillment, unwinding and compensates related with one’s work.

OBJECTIVE THE STUDY

To examine the relationship between Burnout & work related factors such as workload, Lack of control & interpersonal conflict.

Hypothesis

H0 Null hypothesis = There is no significant relationship between burnout & work related factors

Ha Alternate hypothesis= There is significant relationship between burnout & work related factors

Sample size

The sample size consisted of the 160 employees of life insurance companies from LIC & HDFC life insurance.

RESEARCH METHODOLOGY

The data is collected through structured questionnaire. The chi square analysis used to examine the relationship between burnout & work related factors (workload, lack of control, interpersonal conflict). The level of significance is 5%. The stratified random sampling method was used to draw sample.

Data Analysis & Interpretation

Table 1: DEMOGRAPHIC PROFILE

Company name	LIC	HDFC Life insurance	Total
Gender			
Male	40	40	80
Female	40	40	80
Total	80	80	160

Table 1 shows that sample size consisted the 50% male & 50% female employees. It also shows that sample consisted 50% employees from public & 50% employees from private company

Table 2: BURNOUT

Factors	Low	moderate	High	Total
Workload	25	15	10	50
Lack of control	10	20	30	60
Interpersonal conflict	20	10	20	50
Total	55	45	60	160

Table 2 indicates the number of employees on the level of burnout (low, moderate, high) because of work related factors (workload, Lack of control, interpersonal conflict)

Table 3: Chi square Analysis Burnout

Factors	Low	Moderate	High	Overall, Chi -square value
Workload	3.7	0.19	4.04	23.49
Lack of control	10.7	0.60	2.5	
Interpersonal conflict	0.5	1.17	0.09	

Table 3 shows the chi square analysis of burnout & work-related factors. This table calculated the chi square value 23.49 which is greater than the tabular value which is 9.48 so the null hypothesis is rejected & alternate hypothesis is accepted.

FINDINGS OF THE STUDY:-

1. The analysis of findings shows that there were 55 employees who were at low level of burnout.
2. Out of 160 employees 45 employees were at moderate level of burnout.
3. There were 60 employees who were at high level of burnout.
4. The analysis of the findings shows that lack of control impact more on employee’s performance followed by workload & interpersonal conflict.
5. The hypothesis tested at 5% level of significance.
6. The chi square analysis concluded that null hypothesis rejected & alternate hypothesis is accepted.
7. The analysis of the findings shows that work related factors were responsible for burnout.
8. As compared to the LIC company, HDFC life insurance employees were under more burnout
9. As compared to the male employees, the female employees were under more burnout.

CONCLUSION:-

The prevalence of burnout in the life insurance industry is a critical concern that requires attention and effective interventions. Through the use of chi-square analysis, this research aims to identify significant factors associated with burnout and contribute to the development of strategies to mitigate burnout and enhance the overall well-being of employees in the life insurance sector.

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A STUDY OF SYSTEMATIC RISK OF SELECTED FMCG COMPANIES LISTED ON NSE

Dr. Neeraj Sanghi¹ and Dr. Gaurav Bansal²¹Professor, I.T.S School of Management, Ghaziabad²Professor, R.D. Engineering College, Ghaziabad**ABSTRACT**

Market or Single Index Model is very common to assess systematic risk of stocks. NSE follows the market model for disseminating beta values of prominent stocks. Financial professionals also apply CAPM Model for estimating systematic risk and expected returns of stocks. The main objective of this work is to estimate systematic risk of selected FMCG companies listed on NSE through beta coefficient of market model. This paper is an attempt to create a risk profile of FMCG sector of India.

Keywords: Beta, NSE, Market Model, FMCG sector.

INTRODUCTION

A measure of a stock's systematic risk is called beta. A stock's volatility can be compared to the volatility of the entire market by using a beta coefficient. In the market model the data points of key index returns (independent variable) are regressed with data points of stock returns (dependent variable) to estimate beta coefficient of the stock. The slope of the straight line generated through this model of data is statistically known as beta. Each of these financial data points compares the returns of a certain stock to those of the overall market. Beta can also be interpreted as financial elasticity, or the sensitivity of the asset's returns to market returns. Further, the beta value also gives some idea on relative volatility of a stock. Sharpe, the originator of beta statistic in finance, et al (1999, page183) mention, "Stocks with betas greater than one are more volatile than the market and are known as aggressive stocks. In contrast, stocks with betas less than one are less volatile than the market index and are known as defensive stocks." So, a good beta will depend on your objectives and risk tolerance. A smaller beta can be more suitable for you if you are a cautious investor who wants to protect your money in market downfall. In a bull market, betas greater than 1.0 tend to yield returns that are above market average, but they also increase the risk of higher losses in a bear market. Index or Market model regresses returns of stock, the dependent variable, against returns of market index, the independent variable, for assessing systematic risk of stock by drawing a characteristic line. Since Index model (Market Model) is linear and envisage the premise of Simple Linear Regression Model (SLRM), we obtain:

$$R_{Si} = a + bR_{Mi} + e_i \quad (1)$$

Where, R_S and R_M are return on the stock and the return on the market index respectively, a is intercept, b is slope of regression line and e_i is error term.

The resulting slope of equation (1) can be expressed as:

$$b = Covar_{S,M} / (Stdev_M)^2 \quad (2)$$

Where, $Covar_{S,M}$ is covariance of stock and market returns and $Stdev_M$ is standard deviation of market returns.

FMCG sector stocks are known for their defensive nature and a lot of business news articles mentions the same at different points of time. Smctradeonline (2024) mentions 'FMCG stocks represent shares in companies dealing with Fast-Moving Consumer Goods products like food, toiletries, and cleaning items with a swift turnover. These stocks are valued for their defensive nature, displaying resilience in the face of economic fluctuations due to the consistent demand for essential daily items. FMCG companies often enjoy brand loyalty and widespread distribution networks, contributing to their stability.' This kind of news flows generates the essence to create the systematic risk profile of the leading stocks of FMCG sector.

LITERATURE REVIEW

Beta, emanating from the pioneering work of Sharpe (1964) and Lintner (1965), is a mile stone of modern finance theory and is a genesis of countless investment and financing decisions. Fabozzi and Francis (1978) suggest that beta coefficients of stocks move randomly through time rather than remain constant. Fabozzi and Francis, in their famous study, investigate around 700 stocks on the New York stock exchange and find that “many stocks’ betas move randomly through time rather than remain stable as the ordinary least squares model presumes”. Bollerslev et al. (1988) provide tests of the CAPM that imply time-varying beta values of stocks. Other researchers also have same opinions about betas to be time-varying in nature [Mandelker (1974), Keim and Stambaugh (1986), Ferson (1989) and Breen]. Chawla (2001) also reviews the literature on beta stability and uses hypothesis tests to demonstrate instability of beta in Indian stock market.

Bos and Newbold (1984) report that the variation in the stock’s beta may be due to the influence of either microeconomic factors, such as operational changes in the company or changes in the business environment peculiar to the company, and/or macroeconomic factors, such as the rate of inflation, general business environment and expectations about relevant future events. Roll and Ross (1994) claim that the choice of market index that is used to estimate beta may affect its value. Wang (2003) emphasizes the importance of having accurate beta forecasts.

Levhari and Levy (1977) claim that the beta estimates are biased if the analyst uses a time horizon shorter than the true one. Hawawini (1983) claims that a stock’s beta may vary substantially depending upon whether it is estimated on the basis of daily, weekly, or monthly returns and proposes a model to overcome the interval effect in beta estimation. Cohen et al.(1986) and references therein also provide ample evidences that the beta estimates are sensitive to return intervals. Handa et al., (1989) propose that different beta estimates are possible for the same stock if different return intervals are considered. Daves et al., (2000) emphasize that daily return intervals should be used to estimate the beta as daily return intervals increases its precision. Gencay et.al., (2003) report that the estimated beta becomes stronger with increased time intervals.

OBJECTIVE OF THE STUDY

The objective of the study is to assess systematic risk of selected prominent stocks of FMCG sector. Market Model generated beta coefficients are intended to be used for investigating ‘defensive sector’ status assumption of FMCG stocks.

DATA COLLECTION AND METHODOLOGY

Nine prominent companies’ stocks of FMCG sector are selected for study. The selected companies are- Marico Ltd, Hindustan Unilever Ltd, ITC Ltd, Dabur India Ltd, Tata Consumer Products Ltd, Britannia Industries Ltd, Colgate Palmolive (India) Ltd, Procter & Gamble Hygiene & Health Care Ltd, Emami Ltd.

The data of Closing prices of all 9 stocks and NIFTY 50 (as benchmark index) is collected from official website of National Stock Exchange. The data is collected of last 4 years ending on February 29, 2024 on daily, weekly and monthly bases.

Market Model is used to estimate beta coefficients of all nine stocks in short term (Daily one month range, daily three months range, weekly one year range), medium term (weekly two year range and monthly two year range) and long term (monthly four year range)

Systematic risk of all nine stocks of FMCG sector is measured through beta coefficients in short, medium and long term perspectives.

DATA ANALYSIS

The implementation of market model produced the following results related to beta coefficients of selected stocks:

Beta Values of Marico Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
MARICO Beta	0.083	0.387	0.586	0.57	0.348	0.487
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	Yes

Beta Values of Hindustan Unilever Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
HINDUNILVR Beta	0.089	0.584	0.732	0.594	0.172	0.378
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	Yes

Beta Values of I T C Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
ITC Beta	1.27	0.748	0.827	0.583	0.209	0.58
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	No	Yes	Yes	Yes	Yes	Yes

Beta Values of Dabur India Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
DABUR Beta	0.381	0.677	0.829	0.728	0.551	0.354
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	Yes

Beta Values of Tata Consumer Products Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
TATACONSUM Beta	0.848	0.663	0.667	0.779	0.854	1.09
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	No

Beta Values of Britannia Industries Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
BRITANNIA Beta	0.388	0.633	0.657	0.406	0.24	0.38
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	Yes

Beta Values of Colgate Palmolive (India) Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
COLPAL Beta	0.916	0.914	0.654	0.567	0.501	0.517
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	Yes

Beta Values of Procter & Gamble Hygiene & Health Care Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
PGHH Beta	0.853	0.618	0.48	0.504	0.337	0.13
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Yes	Yes	Yes	Yes	Yes	Yes

Beta Values of Emami Ltd.						
Period	Daily - One Month Range	Daily - Three Month Range	Weekly - One Year Range	Weekly - Two Year Range	Monthly - Two Year Range	Monthly - Four Year Range
EMAMILTD Beta	-0.519	0.419	0.867	0.486	0.21	0.471
Significance at 5% level	Yes	Yes	Yes	Yes	Yes	Yes
Defensive Nature	Inversely Yes	Yes	Yes	Yes	Yes	Yes

FINDINGS AND CONCLUSION

From the above mentioned tables it is found that six stocks- Marico Ltd, Hindustan Unilever Ltd, Dabur India Ltd, Britannia Industries Ltd, Colgate Palmolive (India) Ltd, Procter & Gamble Hygiene & Health Care Ltd have beta values lesser than one in all the six time frames. Thus, it may be concluded that these stocks are defensive in nature in short, medium and long term.

ITC is found more volatile compared to the market only in one time frame (Daily one month range), however in rest of the five time frames it is found less volatile compared to the market. Hence, it is also termed as defensive in nature.

Tata Consumer Products Ltd is found defensive in nature in short and medium terms. Only in long term it is found more volatile in nature.

Emami Ltd is less volatile in nature, however on daily one month range it has negative beta value which signifies opposite movement in stock return compared to the market return.

On the basis of above analysis it may be concluded that all nine stocks are exposed to less degree of systematic risk and may be termed as defensive stocks of FMCG sector.

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FINANCIAL RESPONSIBILITY AND ACCOUNTABILITY: AN ACCOUNTING OUTLOOK**Dr. Neeraj Sanghi¹ and Dr. Gaurav Bansal²**¹Professor, I.T.S School of Management, Ghaziabad²Professor, R.D. Engineering College, Ghaziabad**ABSTRACT**

Financial accounting is essential to financial accountability, which is essential to a prosperous society. There are many examples of how improvements to financial accounting, supported by research, have enhanced financial accountability. Such research requires a strong relation between accounting academics and practice; this relation has ebbed and flowed during the whole life. The relation seems to ebb when accounting academics embrace related fields and flows when the relevance to accounting practice emerges.

Economics and finance have provided new perspectives and meaningful insights about the information investors need to make informed decisions. Regardless, there are many intriguing and open questions awaiting accounting research that can provide insights into how financial accounting—and thus financial accountability—can be improved. Thus, the future is bright for financial accounting researchers who do research relevant to accounting practice and want to contribute to a prosperous society.

Although the advent of capital markets research initially seemed to drive a wedge between financial accounting research and practice, some researchers used capital markets research to shed light on practice-motivated questions. This effort gave rise to “value relevance” research, in which researchers test whether a particular accounting amount has a significant relation with equity share prices or returns because share prices summarize investors’ consensus beliefs about the value of the firm’s equity, such a relation is evidence that the accounting amount is relevant to investors and sufficiently reliable to be reflected in share prices, which are the two primary characteristics of useful accounting information set forth in the framework. Some researchers also use value relevance techniques to learn about accounting measurement.

Keywords: Financial Accountability, Pension Accounting, Asset Securitization, Accounting Standards

INTRODUCTION

The aim of this article is to reflect on the role of financial accounting research in supporting financial accountability—in its broadest sense—and offer ideas for future research that can continue this role. Abacus’s 60th anniversary is an opportune time to do this. As historian Jacob Soll chronicles in his book “The Reckoning: Financial Accountability and the Rise and Fall of Nations” (Soll, 2014), financial accounting is the foundation of a prosperous society. Throughout history, societies that kept a keen eye on financial accountability prospered, but those societies declined when financial accountability was disregarded. The book makes clear that accountants, including accounting researchers, have a responsibility to ensure that financial accounting is designed to, and delivers, high quality information that supports sound economic decision-making and the efficient allocation of resources, and thereby supports a prosperous society.

The relation between the accounting academy—and, thus, accounting research—and accounting practice has ebbed and flowed during *Abacus*’s life. When *Abacus* was founded, the relation was strong. Although the relation ebbed when capital markets research became central to much of financial accounting research, it flowed again once it became clear that lessons learned from capital markets research could inform what financial accounting information supports investors capital allocation decisions. With the maturity of capital markets research, the relation between accounting research and practice has ebbed again. This time, the recent expansion of accounting research to focus on topics such as the effects of physical characteristics of the conveyor, and the linguistic style, of accounting information rather than its content illustrates the weakening of the link between accounting research and practice. Although this expansion could enhance our knowledge of how aspects of the communication of accounting information affect its interpretation, there is much we do not yet know about the characteristics of the accounting information being conveyed. Thus, the future is bright for financial accounting researchers who wish to play a role in supporting financial accountability and, thus, a prosperous society.

Enhancing Financial Accountability

The academic accounting literature offers numerous examples of how financial accountability is enhanced with the availability of high quality accounting information and how accounting research provides evidence relating to what information supports economic decision-making. One example is pension accounting in the United States (US). Before the issuance of Statement of Financial Accounting Standard (SFAS) No. 36 by the US Financial Accounting Standards Board (FASB) (FASB, 1980), information relating to the funded status of the

firm's defined benefit pension plans—i.e., pension plan assets and liabilities to employees under the plans—was not disclosed in financial statements. Thus, users of financial reports lacked information about these often sizable assets and liabilities, and were hampered in their ability to make sound economic decisions (Landsman, 1986). SFAS 87 (FASB, 1985, now Accounting Standards Codification (ASC) 715), requires firms to apply accrual accounting to their defined benefit pension plans and disclose additional information about plan assets and liabilities, as well as components of pension cost. The progress relating to defined benefit pension plan accounting thereby mitigated a previous information deficiency (Barth, 1991; Barth, Beaver, and Landsman, 1992). A related, and perhaps more visible, example is the accounting for, and disclosures related to, other post-employment benefit plans. Until the issuance of SFAS 106 (FASB, 1990, now ASC 712), firms had been promising post-employment health care and other benefits without accounting for them (Amir, 1993). Investors had some information about these promises, which enabled them to make assumptions regarding the magnitude of these obligations. However, investors know less than the firm about its promises and, thus, the assumptions necessarily were based on incomplete information. Interestingly, once these off-balance sheet liabilities were recognized in financial statements, firms took action to reduce them (Fronstin, 2010).

A third example is the accounting—or lack of accounting—for employee services paid for with the firm's equity instruments, i.e., share-based payment. Before International Financial Reporting Standard (IFRS) 2 (IASB, 2004b) and SFAS 123R (FASB, 2004, now ASC 718) the recognized expense was zero for employee services paid for using at-the-money share options with fixed terms even though investors viewed the cost of these options as an expense of the firm

There has been a decline in the use of such options. Measuring and recognizing economic costs is a key role of financial accounting that can lead to greater financial accountability and more informed decisions.

Yet another example is the accounting for asset securitizations, which were a focus of the recent financial crisis. The opaque and questionable accounting for these transactions was purported to be associated with the meltdown of financial sector, which some allege was a cost of the lack of adequate accounting information required by ASC 860 and IFRS 7 (IASB, 2005) (Barth, Ormazabal, and Taylor, 2012). Most recently, fair value accounting for financial instruments (ASC 820; ASC 825; IAS 39, IASB 2004a; IFRS 13, IASB, 2011) has been blamed for precipitating the recent financial crisis. However, claims that accounting and reporting for asset securitizations, special purpose entities, and fair value accounting played a role in the recent financial crisis is not supported by evidence (Barth and Landsman, 2010; 2013).

Nonetheless, that accounting is alleged to have played a role in and of itself is testament to the perceived importance of accounting to the well-functioning of product and capital markets and, thus, to society's prosperity.

These examples highlight the importance of financial accounting to society and the role research can play in providing evidence to support or refute what is believed to be true and in providing new insights into potential shortcomings of current accounting as well as offering insights into potential improvements. There is need for more of this research—research employing the scientific method—and thought pieces based on integrating our collective knowledge.

Relation between Academia and Practice during Abacus's life

Abacus was founded in 1965. Beginning one year later, 1966, the Australian professional accounting bodies jointly operated the Australian Accounting Research Foundation (AARF), which ultimately encompassed both the Accounting Standards Board (AcSB) and the Public Sector Accounting Standards Board (PSASB). Accounting standards in the US were set by the Accounting Principles Board (APB) of the American Institute of Certified Public Accountants.

The FASB was not formed until 1973, and the publication of the Conceptual Framework was not to come for another ten years. When *Abacus* began publication, the thinking in research and financial accounting practice were fairly closely aligned. Financial reporting research around this time was normative, with principles relating to the characteristics of measurement of assets, liabilities, and income argued from deductive reasoning. This normative, deductive reasoning approach made the research readily accessible to accountants in practice not only because the language was familiar to practicing accountants, but also because the approach did not use data analysis or mathematical techniques unfamiliar to them. Some thought leaders of the time were Edwards and Bell (1961), Chambers (1962; 1965; 1966), Moonitz (1961), Moonitz and Sprouse (1962), and Jaedicke and Sprouse (1965).

Research changed dramatically with the advent of capital markets-based research, together with its focus on accounting as generic information signals (Ball and Brown, 1968; Beaver, 1968). The information perspective was not new to academics (Graham and Dodd, 1934), but the advent of capital markets research provided a new impetus for embracing it. Although financial accounting standard setting did not embrace this change directly and immediately, not many years later a conceptual framework for financial reporting was developed that embodies an information perspective. This perspective is evident in the objective of financial reporting specified in the framework, which is “to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity” (FASB, 2010; IASB, 2010 ¶OB2).

The framework also clarifies that the primary users of financial reports are those outside providers of capital who cannot otherwise demand the information they need to make their economic decisions (FASB, 2010; IASB, 2010 ¶OB5).

The framework incorporates economic concepts. For example, the framework defines comprehensive income as the change in net assets of the period, other than those attributable to transactions with equity holders in their capacity as equity holders. This definition resembles a Hicksian economic view of income as the change in wealth (Hicks, 1946). Although, at first, the focus on accounting’s information role in capital markets seemed distant from accounting’s traditional role in practice of recording and measuring the effects of the firm’s transactions, basing the framework on an information perspective and economic concepts in fact brought academia and practice closer together.

Although the advent of capital markets research in the late 1960s initially seemed to drive a wedge between financial accounting research and practice, some researchers used capital markets research to shed light on practice-motivated questions. This effort gave rise to “value relevance” research, in which researchers test whether a particular accounting amount has a significant relation with equity share prices or returns. Because share prices summarize investors’ consensus beliefs about the value of the firm’s equity, such a relation is evidence that the accounting amount is relevant to investors and sufficiently reliable to be reflected in share prices, which are the two primary characteristics of useful accounting information set forth in the framework.⁴ Some researchers also use value relevance techniques to learn about accounting measurement (Barth 1991; Choi, Collins, and Johnson, 1997), including fair value measures (Barth, Beaver, and Landsman, 1996; Song, Thomas, and Yi, 2010).

Value relevance research aimed at standard setting has its supporters and critics (Gonedes and Dopuch, 1974; Barth, Beaver, and Landsman, 2001; Holthausen and Watts, 2001). Perhaps because the academic criticism discourages researchers from employing value relevance designs or because such designs seem overused and generate few new insights, value relevance studies are less prevalent today. Nonetheless, researchers have not abandoned capital markets-based research aimed at learning about financial accounting. Instead, they have developed alternative approaches to address a wider variety of questions. For example, Barth, Hodder, and Stubben (2013) uses the implications of option-pricing theory to provide evidence on whether employee stock options share key characteristics of equity or liabilities.

Re-invigorating the Relation between Academia and Practice

Academia and practice seem to be drifting apart again. A visible, potentially contributing development is another broadening of the scope of what is considered financial accounting research. Accounting research has a long history of being informed by economics and finance, particularly in relation to the functioning of capital markets. In addition, insights from psychology enable us to understand how the way in which information is communicated affects how users of the information process and interpret it. Recently, accounting research is expanding beyond these fields, and examining topics such as the effects of physical characteristics of the conveyor of accounting information and the linguistic style of the information (e.g., Hobson, Mayew, and Venkatachalam, 2011; Jia, Van Lent, and Zeng, 2014).

However, these studies focus on characteristics of how accounting information is communicated rather than on the content and characteristics of the information being communicated. The impact of the former on financial accounting and accountability is yet to be established, whereas the latter traditionally is the focus of financial accounting research.

There are clear benefits of accounting research embracing individuals from different fields with relevant, complementary expertise and knowledge. Broader and new perspectives can rejuvenate a field and enrich it. Concurrent with the advent of capital markets-based research in accounting was a reaffirmation that accounting is related to economics and finance. This reaffirmation created the opportunity for individuals with those

interests to become accounting academics. Their broader perspective helps clarify accounting's role in the capital markets, which points to aspects of accounting that need attention or improvement. Their participation in accounting research also reveals new perspectives with which to view nettlesome problems (e.g., Barth, Hodder, and Stubben, 2008; 2013). However, a cost is that more accounting academics are interested in questions other than those of interest to accounting practice, including accounting standard setting. For example, some researchers with strong finance backgrounds focus more on how to profit from situations in which accounting information is not fully impounded in equity prices (e.g., Richardson, Tuna, and Wysocki, 2010).

Top academic journals are embracing this perspective on accounting as a field far broader than its links to economics, finance, and psychology would imply. This broadening result in less journal space devoted to financial accounting research aimed at improving the content of accounting information. This, in turn, has the potential to weaken the link between accounting research and practice (Kaplan, 2011). Another factor potentially contributing to the weakening of this link is the perception by some academics that standard setting decisions are rarely based on concepts (e.g., Allen and Ramana, 2013). Instead, standard setting decisions often seem to be aimed at pleasing preparers of financial statements, or their auditors, rather than providing the most relevant information to users of financial statements. This perception raises the question of whether standard setters are interested in what can be learned from academic research. This perceived lack of impact on standard setting decisions reduces the motivation of academics to pursue research aimed at informing those decisions.

Open Questions for Research

Any weakening of the link between academic research and practice cannot be attributed to a lack of interesting, unresolved potentially researchable questions. Many of these questions are not new—they remain open because they are difficult to answer. They are difficult to answer for two reasons. First, answering them requires in depth knowledge of accounting institutions—fortunately, that is the comparative advantage of accountants. Second, answering them requires creativity in developing appropriate research designs based on available data—fortunately that is a challenge innovative researchers welcome. The following is a partial list of these questions, all of which could result in knowledge that enhances financial accountability. The questions are framed as motivating questions, i.e., practice questions that motivate the research; re-framing them as research questions is left to the researchers who seek to address them.

1. What is the best way to measure assets, liabilities, equity, income, and expense? Although this question has been the focus of considerable thought over many years, it remains unresolved (see, e.g., Chambers, 1962; Dean, et al. 2010). A key shortcoming of the current conceptual framework is that it contains no concepts on measurement (Barth, 2014). Perhaps the absence of measurement concepts reflects the lack of progress relating to measurement in financial reporting (e.g., Chambers, 1998) or perhaps it reflects the acknowledgement that in an incomplete and imperfect world, measurement in accounting is not possible (Beaver and Demski, 1979). It likely is not fruitful to go over old ground that failed to resolve the measurement question. However, measurement is fundamental to financial accounting and financial accountability and, thus, deserves renewed efforts at developing measurement concepts.
2. Should financial accounting focus on assets, liabilities, equity, income, and expense items, or are there other items that we should measure? If there are other items, what are they and why should we measure them? How should the interrelations among these items be portrayed? Which interrelations are important? Joint use in operations? Joint use in any activities? Creation of synergies? These questions relate to measurement and to display.
3. How can we recognize or otherwise faithfully represent intangible assets that increasingly comprise a larger portion of the economic value of firms in an information and technology age? These assets typically are unrecognized today because it is not easy to faithfully represent them in an historical cost, transactions-based measurement framework.
4. Research has begun to focus on risk reporting, but there is little quantitative information in financial statements about the risk of assets, liabilities, equity, income, and expense—either inherent risk or estimation risk (Ryan, 2012). What information is needed? What is the best way to provide that information?
5. What is the best way to summarize, aggregate, and present information in financial reports to aid investors and other outside providers of capital in their decision-making? Research tells us much about investors' decision making—both as individuals and in markets—and it seems clear that financial statements do not reflect all the information they need (Hodder, Hopkins, and Wood, 2008). What additional information do investors need and is that information best provided in financial statements? If not, why not? Is there

information in financial reports that is irrelevant?

6. Financial reports are criticized as being out-of-date before they are published. Yet, they appear to have information content. What is the role of periodic—e.g., quarterly, semi-annual, or annual—financial statements in a world with continuous information flow? What does this role imply for the content of financial reports?
7. What are the costs of not providing high quality financial statements? Although researchers have identified some aspects of quality, the construct of “quality” is inherently difficult to quantify and, thus, assess as high or low (e.g., Francis, LaFond, Olsson, and Schipper, 2004; Barth, Landsman, and Lang, 2008). What aspects of financial statements are the most important to be high quality, and why? Also, the framework explains that the costs of providing—or not providing—accounting information are broad. Researchers have identified cost of capital as a key cost (e.g., Francis, LaFond, Olsson, and Schipper, 2004; Barth, Konchitchki, and Landsman, 2013). Is it possible to identify all major costs, even if we cannot measure all costs? What features of financial statements reduce or increase these costs?
8. What are the boundaries of financial reporting in terms of the extent of forward looking information incorporated into financial reports? All accruals are estimates of the future and fair values reflect current estimates of all factors related to the item being measured (see, e.g., Barth, 2006). When do these estimates of the future cross the boundary between financial reporting and forecasting?
9. The academic literature is replete with studies showing that individuals responsible for financial reporting, such as firm managers, respond to incentives. Is there a way to provide incentives for high quality financial reporting? What are the incentives and how would we create them?
10. What particular aspects of enforcement are needed to ensure the quality of financial reporting? Although some studies focus on enforcement indicators when determining how accounting amounts provide information to capital markets, these studies do not identify which aspects of enforcement are crucial (Ball, 2006).
11. What is the relation between financial reporting and contracting (Lambert, 2010)? Is it simply that it is not cost effective for firms to invest in two reporting systems? Is there any role for establishing accounting standards or principles for accounting used in contracts?

CONCLUSION

Financial accounting researchers have an important role to play in society. Financial accounting is essential for financial accountability, which is seen as essential for a prosperous society. Accounting research is informed by knowledge in related fields such as economics, finance, and psychology. Recently accounting research has begun to embrace fields associated with how accounting information is communicated, including the physical characteristics of information conveyors and the linguistics of the information, with no apparent connection to the information being conveyed. Interaction with related fields brings broader and new perspectives and can rejuvenate a field and enrich it. However, pursuing a new research area without considering its possible relation to accounting practice risks losing the connection between accounting research and practice and, thus, financial accountability. Regardless, there are many intriguing, unanswered research questions the answers to which could provide insights into ways to improve financial accounting and reporting. This article identifies only a few.

To address these questions and provide these insights, the relation between accounting academics and accountants in practice needs to be strong. A strong academic-practice relation helps researchers to identify and thoroughly understand the accounting question and to be creative in developing research designs to address them. As Robert Kaplan said in his 2010 American Accounting Association Presidential Scholar Address, accountants need to re-assert our role in society and to reaffirm our place as a learned profession. Thus, a goal to which accounting academics should strive is research motivated by practice and practice motivated by research. Only then will academic researchers help facilitate financial accountability and contribute to a prosperous society that can base decisions on high quality financial information.

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EXPLORING THE IMPACT OF GENDER INEQUALITY, SOCIAL RESPONSIBILITIES ON INDIAN WOMEN AND HOW IT CREATES HARDSHIPS FOR THEM WHILE ADOPTING E-COMMERCE WITHIN THE MSME SECTOR

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ABSTRACT

Obstacles rooted in gender, such as inequitable distribution of family and domestic responsibilities, limited mobility, discriminatory property, marriage, and inheritance regulations, and cultural customs, impede the establishment and growth of businesses by women. Women entrepreneurs are less privileged than men in terms of accessing resources such as commercial credit from formal financial service providers, more lucrative markets as opposed to traditional local markets, technology and information for launching and expanding their businesses, national incentives in small enterprise development via gender-blind private sector development, fiscal policies and legislation, and small enterprise development training and education. Women entrepreneurs who operate micro and small businesses in the informal sector substantially enhance the economic stability of their communities and families. Until they are encompassed by MSME development laws and initiatives, their prospects of establishing prosperous firms are minimal. Overall, being a women is not easy specifically if she is working. Millions of hardships come in the pathway of adopting the E-commerce for women who are struggling in the MSME sector. To tackle these concerns, this scholarly article adopts a rights-oriented and development-oriented approach that aims to satisfy the practical requirements of female entrepreneurs, eradicate the political, legal, and sociocultural barriers that impede their progress, and foster an environment that is conducive to business expansion and gender parity.

Keywords: Gender Inequality, Discrimination, Empowerment, Women Entrepreneurs, Social Barriers, Digital Literacy

1. INTRODUCTION

Digital technologies have drastically altered the way in which organisations operate and interact with their clients in the current competitive global marketplace. The advent of e-commerce has significantly transformed the entrepreneurial landscape by facilitating unrestricted access to markets and creating opportunities for small businesses and start-ups to prosper in the era of digitalization. Women entrepreneurs have emerged as a formidable force in the business world, challenging preconceived notions and displacing barriers among those who have recognised the potential of electronic commerce.

"EXPLORING THE IMPACT OF GENDER INEQUALITY, AND SOCIAL RESPONSIBILITIES ON INDIAN WOMEN AND HOW IT CREATES HARDSHIPS FOR THEM WHILE ADOPTING E-COMMERCE WITHIN THE MSME SECTOR" aims to explore this contemporary entrepreneurial environment in great detail. The purpose of this study is to shed light on the tactics used by female MSMEs owners in India to negotiate the digital e-commerce landscape. By carefully examining the experiences, challenges, and achievements of women in the state, this study aims to offer insightful information about the role that e-commerce plays in empowerment of women in the community.

1.1 OBJECTIVES OF THE STUDY

- To determine the hardships associated with financial support, mental barriers, gender biases, and the necessity for work-life integration that women entrepreneurs encounter;
- To analyse the social dominance that hinders women's progress in the MSME sector regarding the adoption of e-commerce;
- To evaluate potential government policies to assist women in overcoming gender inequality;
- To recognise the necessity for an awareness campaign regarding women entrepreneurs;

2. LITERATURE REVIEW**2.1 Entrepreneurship in the Age of Globalisation and Liberalisation**

The liberalisation of the Indian economy commenced in 1991, when the government made efforts to relax economic regulations and attract foreign markets into the nation (Dar and Shaalgojri, 2022). The principal objectives of liberalisation were to augment budgetary revenues and diminish the presence of loss-making

entities. With the implementation of specialised entrepreneurship policies mandated by the Industrial Policy Resolution (IPR), women entrepreneurs were empowered to establish enterprises and make valuable contributions to the economy of post-independence India. However, by the early 2000s, 7% of MSMEs managed by women had deteriorated to the point of insolvency as a result of insufficient demand and funding, ultimately culminating in the cessation of operations.

Despite the positive impacts of globalisation on living conditions and productivity, female entrepreneurs encountered a significant period of over two decades to establish modest enterprises and achieve financial stability. As a result of increased access to technology and foreign investment, globalisation enabled small business proprietors to enhance their product offerings and increase customer satisfaction. The expeditious establishment of novel enterprises resulted in enhanced employment opportunities and heightened market competition.

2.2 Women's Effects on the Indian Economy

According to a survey by the Indian Brand Equity Foundation (IBEF), women-led firms account for about 20.37% of the MSME sector in India and provide roughly 23.3% of the labour force. Guzman, and Kacperczyk, (2019) have explained that between 13.5 and 15.7 million companies run by women employ between 22 and 27 million people. They are regarded as the foundation of the economy of India. With more women entering the workforce, it is also predicted that by 2025, the national economy might contribute USD 770 billion, or 18% more to the global GDP. It is anticipated that the number of women-led businesses would rise by 90% over the next five years due to a rise in start-up activity and the adoption of inclusive work cultures.

In a nation where women are traditionally expected to handle only home chores, conditions have greatly improved, and today there are 15.7 million women-owned enterprises. This demonstrates how women can grow rapidly and how they could fundamentally alter the MSME sector. Despite of social barriers the growth of women empowerment is commendable.

3. RESEARCH METHODOLOGY

3.1 Data Collection Methods and Tools

As a part of data collection it is important that correct data collection tools are focused. In this research the surveys conducted on employees are part of primary quantitative data. The chosen method of data collection is surveys. It is one of the easiest methods of collecting a big amount of data. Survey allows collecting primary quantitative data without fail. After collection the data are stored in excel sheets and graphs and charts are created. Since, a whole population of non-random employees is taken as a sample, the quantitative research method is doing the best (Thomas, 2021). All of these data will be collected in excel sheets and important graphs and charts will be generated out of it.

3.2 Sample Size and Population

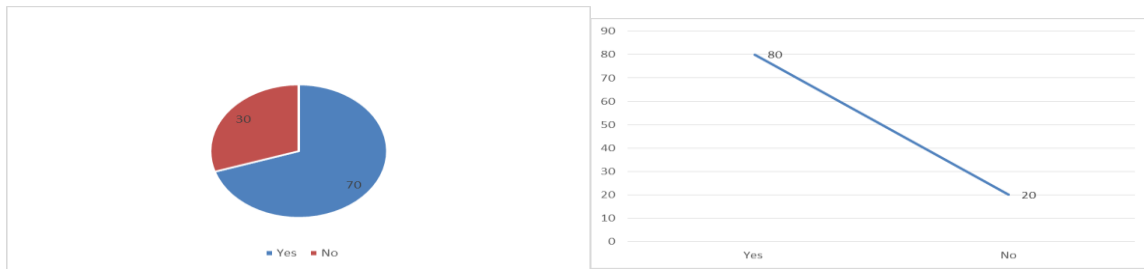
The sample size is 100. The respondent will be female and of age group within 54 years. A simple random sampling is supposed to be used for this work. It is a portion of the population chosen at random that constitutes a simple random sample (Crane, 2022). Every member of the population has an exact equal probability of getting chosen using this sampling technique.

3.3 Data Tabulation

For tabulation purpose there will be a use of the SPSS software of version 22. By using the software one way anova will be run. This will be done using analyse feature and performing the means. The mean value or score of a certain set of data is equal to the sum of all the values in the data set divided by the total number of values. A mean is the same as an average. After running these tests a statistical difference of mean values between two or more groups can be added. By using the SPSS software covariance of the data will be gathered which is measured through the total variation of two random variables from their expected values. The covariance will allow researcher to measure both strength and direction of the linear relationship between two variables. Now using the one-way analysis of variance involves one independent variable (referred to as factor) which has a number of different levels.

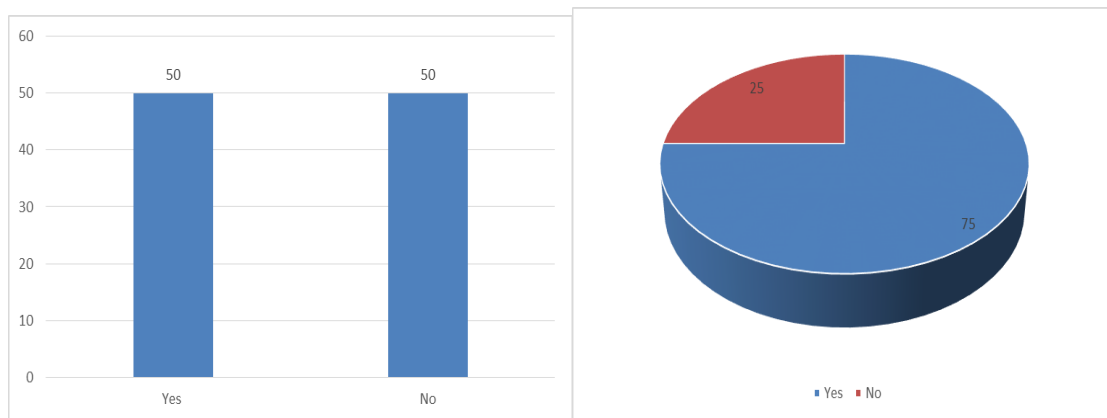
4. DATA ANALYSIS

The data presented here is collected by the researcher herself.



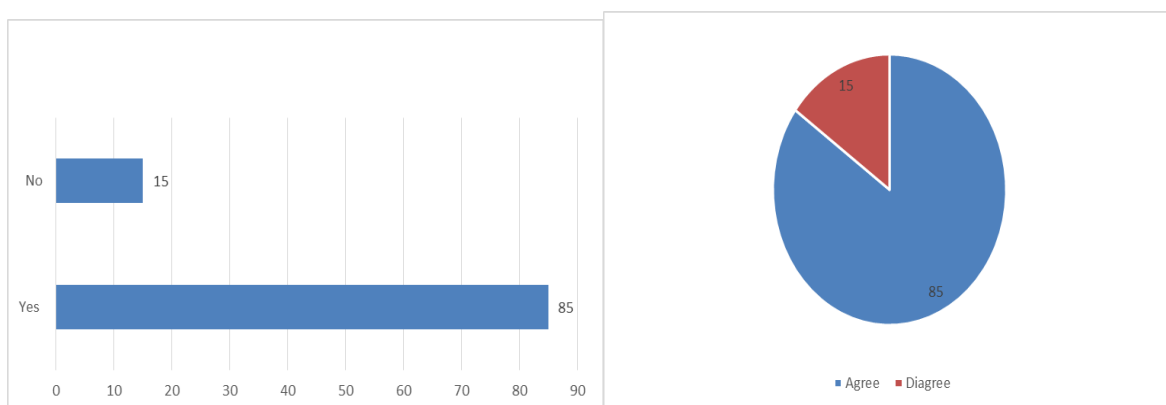
(Source: Author)

70 people agreed that despite the fact that they may be crucial to household-owned microenterprises, women frequently lack the registered assets necessary to form businesses under their names. 80 people have said yes that laws or cultural norms may stipulate that women's businesses must have male signatures in order to be registered.



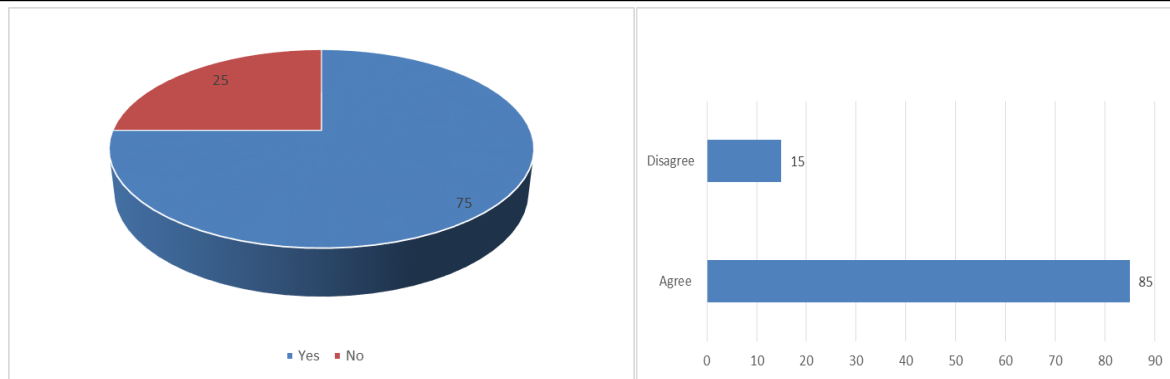
(Source: Author)

A 50-50 response was generated on legal or cultural restrictions on women's travel may prevent them from accessing registries where the required paperwork needs to be filed. 75 people said due to their demanding schedules from both their personal and work lives, women find it especially difficult to comply with the onerous, protracted, and bureaucratic regulations needed to formalise their enterprises.



(Source: Author)

85 people supported the fact that it could be the case that women are less familiar with formal procedures than men because of lower levels of education and business skills training. 85 people explained that exorbitant costs for business registration, loan applications, and import/export licences disproportionately affect women-owned MSMEs with inadequate funding.



(Source: Author)

75 people said yes to the age-old ritual of nurturing a baby and household is often deployed on women and it creates a barrier towards the growth prospects of e-commerce. 85 people said if there were many women entrepreneurs are eager to employ other women, they find the existing government incentives are not sufficient to comply with the 4 months of maternity leave and one extra hour per day off during the first year of the child required by the law.

5. INTERPRETATION

Hypothesis:

H0: Compared to male entrepreneurs, female entrepreneurs are less profitable and productive due to the gender bias and inequality and societal pressure of managing household

H1: Compared to male entrepreneurs, female entrepreneurs are more profitable and productive despite of the gender bias and inequality as well as societal pressure of managing household

FINDINGS

From the findings of the survey data it can be explained that the smaller businesses are run by women. As a business grows in size, the proportion of female proprietors dramatically decreases. The fact that woman's businesses are more likely to operate part-time in order to balance work and family obligations accounts for the smaller size. Insufficient collateral and a convoluted application process have restricted access to financing; Limited ability and exposure to business development, including employee management, business launch, and meeting market demands; are the primary reason of women not being able to follow their dreams. Lack of access to technology and essential information (such as finance, market trends, registration and legal requirements, business development, and ownership of properties); Formal and informal discrimination, such as harassment by officials when processing paperwork or requesting permission from the husband to borrow money (even when it is not legally required); Inheritance and property ownership discrimination; Insufficient time dedicated to enterprise development and family support because women manage both households (especially childcare) and businesses; Lack of networking and organising, making it difficult to voice their needs to policy makers and business associations are also contributing to the fact. Lastly, the contribution of family members is also important. In most of the case female enterprisers do not receive the correct support from their families and often are bounded by the duties at home, which results in an ability to focus at work.

6. CONCLUSION AND RECOMMENDATION

Within the scope of the study hardships faced by a women while managing both the work and household will be highlighted. Social dominance in a particular society has been explained that holds back women from accepting and participating in competitive challenges. Some probable recommendations will be

i) Awareness Campaigns

Telling kids about gender defined roles: Awareness campaigns are most important since the family members are required to understand that household roles are not only for women's. Raising kids and doing household chores is not just a female's duty. Assign boys to caregiving roles at a young age can be one of the most potential steps undertaken.

ii) Financial Aid for Female Entrepreneurs

Group or outside assurances: Many microfinance institutions have replaced the collateral requirements with a Grameen-style group lending arrangement and the assignment of co-guarantors; nevertheless, this seems more challenging with commercial banks, and more innovation is required on this front.

iii) Digitalisation of Entrepreneurial Skills

Overcoming Limitations on Mobility: Digital literacy and technology usage by female entrepreneurs makes it easier for them to assess new business models and makes it easier for their home-based ventures to become reality. For instance, advances in e-commerce and online payments are making it easier for businesses to expand into new markets and conduct cross-border trade with less money and labour (Balachandra, 2020).

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EMOJI PREDICTION USING SENTIMENT ANALYSIS

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ABSTRACT

Emoji prediction through sentiment analysis is a process integral to natural language processing (NLP). It involves evaluating the emotional tone of text and suggesting appropriate emojis to convey sentiments, categorizing them as positive, negative, or neutral. The innovative aspect lies in utilizing sentiment analysis to foresee and recommend emojis aligned with expressed feelings, thereby enhancing user experience and fostering more engaging digital conversations. Addressing challenges such as ambiguity and cultural variations, this study broadens emoji applicability beyond textual communication, extending to social media and customer feedback sentiment analysis. Emphasizing the evolving importance of emojis in contemporary communication, it explores their role in diverse digital interactions, employing sentiment analysis to predict contextually relevant emojis. The research critically reviews existing methodologies, focusing on machine and deep learning models, assessing their strengths, weaknesses, and potential for further development. Ambiguity and cultural disparities are identified as significant challenges affecting precise emoji prediction. Additionally, the study examines practical applications of emoji prediction technology, including integration into social media analytics, customer feedback sentiment analysis, and personalized recommendation systems. Proposing enhancements to user experience and engagement, the research highlights the transformative potential of this technology in digital communication. It concludes by advocating for robust datasets, improved algorithms, and considerations of cross-cultural disparities to advance emoji prediction through sentiment analysis, envisioning a future where this approach enriches digital communication across diverse contexts.

Keywords: *Emoji prediction, Sentiment analysis, Natural language processing, Digital communication, Cultural variations*

1. INTRODUCTION

Emojis have exploded in popularity in digital communication, with over 92 emoji categories expressing a vast array of human emotions and serving as visual cues to sentiment. This has driven interest in leveraging emojis to enhance sentiment analysis, a pivotal natural language processing (NLP) technique that computationally evaluates subjective text to understand emotional tone and opinion. Recent studies have focused on emoji prediction through sentiment analysis, proposing innovative methods to suggest emojis matching the sentiment of accompanying text, as shown in figure 1.



Fig 1: Expressive Emojis: Visualizing Sentiment in Feedback (MonkeyLearn 2024)

This paper presents a comparative analysis of 10 recent research papers that have explored sentiment-based emoji prediction using diverse techniques. The examined studies span traditional machine learning classifiers like Support Vector Machines (SVM), Linear SVC, Random Forests to sophisticated deep learning models including CNN-LSTM and BERT. Some works focus solely on emoji prediction while others emphasize the value of emojis in improving overall sentiment analysis accuracy. The papers have utilized varied datasets ranging from a few thousand tweets to millions of Twitter images labeled for sentiment/emojis.

By reviewing the techniques, datasets, results and limitations in a comparative framework, this analysis assesses the current state of emoji prediction for sentiment analysis. It highlights the relative merits and drawbacks of the approaches, while surfacing key challenges like managing ambiguity, accounting for cultural variability in

emoji meanings, lack of annotated benchmark datasets, and data biases. The analysis summarizes the insights from each study and identifies promising future research directions in this emerging domain.

Overall, this paper underscores the transformational potential of sentiment-based emoji prediction to enhance understanding of nuanced sentiment expression. It advocates for continued advancements in techniques that can capture fine-grained contextual semantics to enable sophisticated emoji recommendation systems. With enhanced emoji prediction capabilities, the engagement and experiences of digital interactions can be greatly enriched across diverse social media, e-commerce, customer engagement and smart conversational agent applications.

2. LITERATURE REVIEW

The role of emojis in sentiment analysis and emotion detection has garnered significant attention from researchers in recent years. As digital communication continues to evolve, emojis have emerged as a powerful tool for conveying emotions and sentiments that can be challenging to express through text alone. This literature review aims to provide a comprehensive overview of the current state-of-the-art techniques and methodologies employed in emoji-based sentiment analysis.

2.1 Attention-Based Neural Network Models

One of the prominent approaches in this field involves the use of attention-based neural network models, particularly those leveraging bidirectional long short-term memory (BiLSTM) networks. Lou et al. (2020) proposed an attention-based BiLSTM model that captures the interactions between emojis and text for sentiment analysis. This model achieved an accuracy of 87.85%, outperforming several baselines. Similarly, Chen et al. (2018) introduced a bi-sense emoji embedding method and attention-based LSTM networks, achieving state-of-the-art results in sentiment analysis tasks with an accuracy of 90%.

2.2 Emoji Embeddings and Sentiment Lexicons

Another prominent line of research focuses on the development of emoji embeddings and sentiment lexicons. Al-Halah et al. (2019) introduced SmileyNet, a deep neural network trained on predicting emojis for visual sentiment analysis, demonstrating the effectiveness of compact and efficient emoji embeddings. Additionally, Saha & Kumar (2022) employed an emoji-based sentiment lexicon, improving performance in a multimodal sentiment analysis task involving text and emojis.

2.3 Traditional Machine Learning Approaches

While deep learning techniques have gained traction, traditional machine learning approaches have also been explored for emoji-based sentiment analysis. Kumar & Vardhan (2022) utilized classifiers such as Linear SVC, achieving an accuracy of 56.8% in emoji prediction tasks. Priya (2019) employed the K-Nearest Neighbour (KNN) algorithm in conjunction with image processing techniques, yielding reasonable accuracies for specific emojis like "smile," "anger," and "sadness."

2.4 Cultural and Contextual Considerations

Researchers have acknowledged the challenges posed by cultural variations and contextual factors in emoji usage and interpretation. Al-Halah (2019) highlighted the limitations of ignoring cultural influences, while Grover (2022) emphasized the need for standardized, annotated datasets that capture the nuances of complex emotions across diverse contexts.

2.5 Multilingual and Cross-Domain Applications

As digital communication transcends linguistic boundaries, researchers have explored multilingual and cross-domain applications of emoji-based sentiment analysis. Tomihira et al. (2020) investigated multilingual emoji prediction using BERT, achieving promising results for English and Japanese data. However, the study also highlighted the need for further fine-tuning and model improvements, particularly for languages like Japanese.

2.6 Limitations and Future Directions

Despite the significant progress made in this field, several limitations and challenges remain, as also shown in figure 2. These include limited dataset sizes, data biases, and the need for more comprehensive evaluation metrics that capture the nuances of emoji usage. Additionally, researchers have identified the potential for incorporating advanced deep learning models, such as BERT and aspect-based sentiment analysis, to further enhance the accuracy and robustness of emoji-based sentiment analysis systems.

In conclusion, the literature review highlights the diverse approaches and methodologies employed in emoji-based sentiment analysis, ranging from attention-based neural networks and emoji embeddings to traditional machine learning techniques. While significant strides have been made, challenges such as cultural variations, data biases, and the need for standardized datasets persist. Future research directions include exploring advanced

deep learning models, aspect-based sentiment analysis, and cross-domain applications to further unlock the potential of emojis in sentiment analysis and emotion detection.



Fig 2. Limitations and Challenges in Emoji Prediction

3. COMPARATIVE ANALYSIS

Tables 1 presents a comparative analysis among different related works.

Table I: Comparative Analysis of different related works based on certain parameters

Parameter	Lou et al. (2020)	Al-Halah et al. (2019)
Methodology Used	<ul style="list-style-type: none"> An attention-based BiLSTM model was recommended by the researchers to capture effect of emojis on sentiment polarity of text. They applied BiLSTM for getting word contextual representation in text. It used emoji dependent attention mechanism to handle the correlation between emojis and words. Weighted values (attention scores) for each word with an emoji are also known as attention weights. The concatenated form of the text representation, emoji representation and emoji-weighted text representation was fed into the sentiment classifier. 	<ul style="list-style-type: none"> A dataset of four million images with 92 emoji classes representing feelings was compiled from Twitter to make a considerable emoji corpus. The author has suggested that the SmileyNet, a deep neural network architecture based on an emoji prediction task, could be used to learn the embedding for emojis in texts. To apply the model in visual sentiment analysis and emotion classification tasks, it was fine-tuned using transfer learning.
Dataset	<ul style="list-style-type: none"> From SinaWeibo, a total of 10,042 Chinese micro-blog posts containing emojis were gathered and manually annotated by the researchers. The dataset contains both sentiment labels for plain text and overall sentiment considering both text and emoji 	<ul style="list-style-type: none"> Four million Twitter images were labelled with ninety-two categories denoting emotions/sentiment related emoticons. Temporally balanced sampling strategy used. Twitter Visual Sentiment dataset for sentiment analysis evaluation. Flickr & Instagram dataset for emotion classification evaluation.
Result	<ul style="list-style-type: none"> The proposed attention model beat several baselines including SVM, BiLSTM, etc. in showing how important it is to model emoji-text interactions. Model achieved an accuracy of 87.85% over 86.66% of BiLSTM baseline 	<ul style="list-style-type: none"> Emoji embedding surpassed object-based embedding and current best techniques in sentiment analysis as well as emotion categorization tasks With compact and effective emoji embedding, zero-shot sentiment

	<p>indicating enhanced emotion analysis performance.</p> <ul style="list-style-type: none"> According to the findings of the research on emojis' sentiments in the text messages, this model was superior when such sentiments were expressed. 	<p>prediction is possible.</p> <ul style="list-style-type: none"> Analysis revealed a different emotional profile for each emoji.
Limitation	<ul style="list-style-type: none"> In terms of microblog post per single emoji; they failed to consider multiple-emoji interactions. Evaluation was done using only Chinese dataset. More insights could be obtained through testing other languages. Little knowledge exists regarding why feelings towards or away from texts change with use of emoji 	<ul style="list-style-type: none"> The dataset of emojis was labelled noisily using social media automatically. Strict metric for emoji prediction does understate the performance. Some emotions like anger/fear get mistaken for sadness by many users. Cultural influences in the use of emojis were ignored.
Parameter	Saha & Kumar (2022)	Kumar & Vardhan(2022)
Methodology Used	<ul style="list-style-type: none"> The text data is preprocessed by removing stopwords and lemmatizing words to their root forms. N-gram features are extracted from the preprocessed text, with n ranging from 0 to 4 These four machine learning classifiers were trained and evaluated: <ol style="list-style-type: none"> SVC: It finds hyperplane that separates data points, maximizing the margin for good generalization Linear SVC: This is similar to SVC but only works on linearly separable data (it's faster and simpler). Decision Tree: This splits data based on features, building a tree-like structure for classification. Random Forest: Many decision trees are combined together to improve accuracy and reduce overfitting 	<ul style="list-style-type: none"> The suggested technique deploys an emoji-based sentiment lexicon that helps with assigning polarity scores to emojis. Text gets preprocessed through techniques such as lowering case, lemmatization, removing punctuation and stopwords. Word2Vec CBOW and Skip-gram models are utilized in generating word embeddings Sentiment classification on deep learning classifiers like LSTM, CNN, Bi-LSTM and CNN-LSTM has been done. <ol style="list-style-type: none"> LSTM: Studies long-range dependencies in sequences so that it learns them. CNN: Discovers patterns in grid-like data (e.g., images). Bi-LSTM: Processes sequences both ways for richer context. CNN-LSTM: Combines strengths of CNNs/LSTMs for sophisticated data.
Dataset	<ul style="list-style-type: none"> This dataset contains 7480 tweets/statements obtained from Twitter. The data falls into seven emotion classes – joy, fear, anger, sadness, shame, guilt, disgust. 	<ul style="list-style-type: none"> A total of 9003 mobile reviews were collected from different social media sites about Samsung M21 phone The reviews consist both of texts as well as emojis values We obtained 74% positive and 26% negative reviews respectively
Result	<ul style="list-style-type: none"> On the test data, Linear SVC had an accuracy of 56.8%, which was better than that of other classifiers. Linear SVC was picked because it has a faster convergence rate on larger datasets as opposed to other classifiers. The model can assign suitable emojis to fresh input text based on the forecasted emotional category. 	<ul style="list-style-type: none"> Use of emoji-based sentiment lexicon resulted in performance improvement via addition of emoji for labelling. CNN-LSTM model has an accuracy rate of 94.94%. This CNN-LSTM model achieved best classification accuracy (94.94%).

<p>Limitation</p>	<ul style="list-style-type: none"> • However, 56.8% is still too low and further improvements can be made. • This confusion matrix displays misclassifications between some emotion categories such as anger and sadness. • Such advanced deep learning models like LSTM/CNNs may potentially lead to enhanced accuracies. • Qualities such as sarcasm and punctuation could be incorporated in order to capture nuances of the text more accurately. 	<ul style="list-style-type: none"> • A dataset of 9003 reviews is used, a larger one can be used • Restricted to positive and negative review classifications only. • No aspect-based sentiment analysis was performed. • Evaluation on more complex models like BERT did not take place
<p>Parameter</p>	<p>Yoo&Rayz (2021)</p>	<p>Priya (2019)</p>
<p>Methodology Used</p>	<ul style="list-style-type: none"> • Modeling the meaning behind the emojis with Word2Vec (CBOW model) as well as Skip-Gram • Comparing emoji ratios with word sentiment frequencies. • Emphasized the role of tokenization process on tweets' emoticons by using various techniques • Several ML algorithms were employed (logistic regression, SVM, Naive Bayes) for sentiment analysis purposes. <p>I. Logistic Regression: It estimates the probability of a binary outcome based on certain features.</p> <p>II. SVM: Maximizing margin hyperplane divides data into two classes</p> <p>III. Naive Bayes: Classifies data based on independent features.</p>	<ul style="list-style-type: none"> • Sentiment analysis of Twitter data emojis is performed in this research. • To convert emoji images to grayscale, we can process them. • Thresholding techniques are employed for image segmentation • Textural features are extracted using Gray Level Co-occurrence Matrices (GLCM) as statistical descriptors. • K-Nearest Neighbor (KNN) algorithm was used for classification. • KNN (k-Nearest Neighbors): It is a classification method that assigns classes by selecting the class that the majority of its neighbors belong to.
<p>Dataset</p>	<ul style="list-style-type: none"> • Four datasets in total include one from Github, two from Kaggle and another directly obtained from Twitter. • Twitter Datasets: 13.2k Labeled tweets with Emojis; 52.8k Unlabeled tweets without Emojis; 1.8 million Tweets with Emojis for training Word2Vec • The searches were collected via the use of Twitter API 	<ul style="list-style-type: none"> • Emojis from Twitter are the basis of this dataset. • The collection is made up of images composed of emojis. • This research did not mention how big the data set is (how many images). • No specific information about types of emojis included or labelling data (e.g. positive, negative, neutral) has been given.
<p>Result</p>	<ul style="list-style-type: none"> • Sentiment ratios of emojis are higher than words'. • Stronger sentiment is expressed by having multiple identical emojis put together one after another. • This improves sentiment analysis accuracy by tokenizing them together between 0.04%-0.8%. • Multiple meanings often get replaced with representative words instead of emojis themselves. 	<ul style="list-style-type: none"> • The method managed to reach 80% accuracy for 'smile' emoji, 72% for 'anger' and 65% for 'sadness'. • According to the study, emojis have a significant effect on sentiment analysis particularly in connection with positive emotions. • Use of emojis improved sentiment analysis performance than text only.
<p>Limitation</p>	<ul style="list-style-type: none"> • There has been limited examination on how emojis affect meaning sense of text sentimentally. • The dataset size tagged for sentiment 	<ul style="list-style-type: none"> • Only just looked at emojis in terms of sentiment analysis. There was no use of text content. • The research analysed just a few

	<p>experiments is small.</p> <ul style="list-style-type: none"> • Small changes have occurred in accuracy levels. • Only commonly used ones were focused on • Meanings of uncommon emojis not analyzed. 	<p>emotions; smile, anger, sadness. More emotions can be added</p> <ul style="list-style-type: none"> • This paper does not provide any details regarding dataset size and specifics that would help assess its generalizability. • Comparative evaluation with other methods does not exist.
Parameter	Ranjan&Yadav (2021)	Grover (2022)
Methodology Used	<ul style="list-style-type: none"> • The two main techniques used by the researchers for emoji prediction were Multinomial Naive Bayes and Bidirectional LSTM neural network. • For word embeddings, they compared Bag of Words (BoW), TF-IDF vectors, and pre-trained GloVe word vectors. • The dataset was pre-processed through elimination of stopwords, hashtag symbols, tokenization and oversampling to handle class imbalance. 	<ul style="list-style-type: none"> • Machine learning approaches like probabilistic models (Naive Bayes, Bayesian Networks), linear classifiers (SVMs, neural networks), and decision trees have been used for sentiment classification based on text features. • Sentiment lexicons are created through unsupervised lexicon-based approach where sentiment scores are assigned to words. • For emoji-powered sentiment analysis such as: <ol style="list-style-type: none"> I. Learning emoji embeddings using variants of word2vec skip-gram models on tweets containing emojis. II. Creating emoji sentiment lexicons based on emoji co-occurrence with sentiment words or overall tweet sentiment. III. Using deep learning models like LSTM, GRU with attention mechanisms to incorporate emojis.
Dataset	<ul style="list-style-type: none"> • The dataset contained approximately 70,000 tweets from Twitter which had text and labelled emojis. • Data was divided 8:2 into training and testing sets 	<ul style="list-style-type: none"> • Ext datasets such as tweets, reviews, forum posts labelled for sentiment have been used. • For emoji research, EmoTwi50 tweets are commonly used.
Result	<ul style="list-style-type: none"> • This is the highest accuracy, with a bidirectional LSTM that used GloVe word embeddings, and it scored 85.22% for emoji prediction. • Compared to Naive Bayes, LSTM was much better at capturing context and semantics. • Undersampling solved the class imbalance issue in the dataset. 	<ul style="list-style-type: none"> • According to an experiment: just text features do not outperform sentiment classification when emojis are included. • The notions of similarity and association between emojis can be captured by using emoji embeddings. • Deep learning models with emoji attention perform better than baseline LSTM models without emojis information • Text does not capture some nuanced emotions like humour and sarcasm which can be revealed through emojis
Limitation	<ul style="list-style-type: none"> • The unequal distribution of emojis among data samples made predictions biased toward more frequent-emotioned outputs. • Since sentences might have different meanings, limiting sentence to one emoji is inappropriate because it may mean different things as well. • To the nature of emoji usage, the 	<ul style="list-style-type: none"> • There is no standard set of annotated tweet-emoji sentiment analysis dataset available currently • Interpretation of emojis varies across cultures and platforms. • Given that training was done on small datasets, generalization across domains cannot be estimated for these models.

	evaluation metric of absolute accuracy is strict.	
Parameter	Chen et al. (2018)	Tomihira et al. (2020)
Methodology Used	<ul style="list-style-type: none"> There is a double perspective emoji embedding method in the paper that learns two embedding vectors for each emoji based on the sentiment (positive/negative) of textual contexts it appears. It also uses an attention-based LSTM network with the bi-sense emoji embeddings as input for sentiment analysis. Includes two variations: <ol style="list-style-type: none"> Word-guide Attention LSTM: It computes attention weights for bi-sense embeddings guided by every context word. Multi-level Attention LSTM: It computes tweet-level attention weights on bi-sense embeddings. 	<ul style="list-style-type: none"> The paper suggests a new model that predicts sentences composed of emojis. This model uses English and Japanese tweets from Twitter as training data. Different models are contrasted among which are: <ol style="list-style-type: none"> FastText: Simple model with embedding and linear layers CNN: Uses convolutions over embedded word vectors LSTM with Attention: LSTM with attention mechanism to focus on important words BERT: Bidirectional transformer encoder model pretrained on large corpora
Dataset	<ul style="list-style-type: none"> The Twitter sentiment analysis dataset was created by crawling tweets and using VADER for weak sentiment labels. It has 1.49 million tweets which use 55 emojis most frequently. Out of this number, a subset of 4000+ tweets were annotated manually for validation/testing It considered 55 frequently used emojis. 	<ul style="list-style-type: none"> The various visualizations of the emoji vectors showed clusters of emojis with related meanings, signifying their ability to express feelings. BERT has outperformed conventional models such as CNN and LSTM by achieving an accuracy rate of 38.2% for English data and 27.7% for Japanese data.
Result	<ul style="list-style-type: none"> Bi-Sensed Emoji Embedding captures more detailed semantic/sentiment information than a standard emoji embedding does. In Addition, The Attention Based LSTM with Bi-Sensed Embeddings outperforms baselines without attention or with standard emoji embeddings. On Sentiment analysis task, its accuracy stands at state-of-the-art level of 90%. Bi-Sensed Embeddings better Guide Attention to Informative Words. 	<ul style="list-style-type: none"> Its visuals revealed similar meanings being grouped together indicating emotions resemblance among different emojis. For instance, BERT has achieved an accuracy level of 27.7% in Japan while it was rated at 38.2% in England thereby performing better than traditional models like CNN or LSTM would do respectively. The sentiment analysis is improved by BERT's ability to consider context bidirectionally
Limitation	<ul style="list-style-type: none"> This is because Dataset only considers positive/negative sentiment, lacks neutral class and only evaluated on a single dataset and task. A limited set of 55 frequently used emojis. More number of emojis can be used. Only evaluates on a single Twitter sentiment analysis task. It could create larger emoji dataset across platforms. 	<ul style="list-style-type: none"> Still, the emoji prediction accuracy is quite low and needs much improvement. Tweets containing one emoji only were considered as noisy but relevant ones with multiple emojis were removed. Japanese text requires a more fine-tuning model because its accuracy was below the English. It's possible that larger and more diverse sets of emojis could be predicted, not just 20 commonly used ones.

4. EVALUATION

According to Lou et al. (2020), an attentionalBiLSTM model was developed for sentiment analysis through capturing interactions between emoji and text which yielded an accuracy of 87.85% that outperformed baselines in sentiment analysis tasks. On the other hand, Al-Halah et al.(2019) came up with SmileyNet, a deep neural network trained on predicting emojis for visual sentiment analysis which confirms that there are efficient methods for performing sentiment prediction using these icons. While Lou's study focused on single-emoji interactions and utilized a Chinese dataset for evaluation, Al-Halah's work emphasized the compactness and efficacy of emoji embeddings while facing challenges with noisy labeling and cultural influences on emoji usage. These two studies have contributed to our understanding of how to analyze sentiments by means of emojis; however, they were conducted with different data sets, methodologies employed in them varied, findings produced differed significantly from each other and each has its own drawbacks too.

In their work, Saha& Kumar (2022) uses traditional machine learning classifiers such as Linear SVC to achieve an average accuracy of 56.8%, whereas Kumar&Vardhan (2022) uses deep learning methods especially CNN-LSTM and gets a considerably higher accuracy of 94.94%. Both studies use sentiment lexicons based on emojis but still suggest several improvements like more complex deep learning models or adding other text features. Limitations include Yoo's small dataset and slight accuracy improvements (Yoo&Rayz 2021), as well as that Priya's study is devoid of comprehensive emotion analysis and dataset details (Priya 2019).

Amongst the others, Yoo&Rayz (2021) investigate emoji subtleties using Word2Vec models combined with some classical ML algorithms which indicate strong feelings in emojis rather than words. In contrast, Priya(2019) deals with image processing techniques, which result in fair accuracies (65%-80%) for certain emojis like 'smile,' 'anger,' and 'sadness.' Limitations include small dataset by B. Yoo and negligible precision enhancements; while for instance B.Priya does not take into account holistic feeling assessment or provide data concerning it.

The context-aware LSTM is used byRanjan&Yadav (2021) in emoji prediction using bidirectional LSTM with GloVeembeddings, and the method achieves an accuracy of 85.22%, focusing on LSTM's contextual understanding. Conversely, Grover (2022) looks at sentiments in emojis, which enhances sentiment classification performance through capturing nuanced emotions like humour and sarcasm. However, there are limitations such as data biases and subjective interpretation across cultures leading to a need for standard datasets that appraise complicated emotions more deeply.

Chen et al. (2018) proposes bi-sense embedding method for emoji attention and attention-based LSTM networks attaining a state-of-the-art result of 90% in sentiment analysis tasks. This technique captures fine-grained sentiment information better than the other methods outperforming baselines as well as achieving highest F-score to date. In contrast, another study by Tomihira et al. (2020) examines multilingual emoji prediction with BERT, where it has achieved 38.2% in English data and 27.7% in Japanese data accuracy respectively . While taking into account the bidirectional context found in BERT application to sentiment analysis shows its efficacy; it however suffers from low precision of predicting emojis besides needing better tuning for Japanese text. In fact, both research works have valuable suggestions about applying emojis to sentiment analyses despite encountering problems like limited numbers of emoji sets or dataset biasedness.

5. CONCLUSION

Finally, the analysis paper reviewed demonstrated various ways and methods used to make use of emojis in sentiment analysis. Beginning with attention based BiLSTM models and ending with deep neural networks trained on emoji prediction, each one of these studies provides valuable insights into what emojis mean when they are used as a tool for determining somebody's emotions. Both traditional machine learning classifiers as well as deep learning techniques were employed resulting in different levels of accuracy and efficiency when it comes to capturing the finer aspects of sentiment. While strides have been made in terms of this field, some issues such as dataset biases, cultural influences and using standardized datasets remain unresolved. However, together these papers point out the importance that can be attributed to using emojis in doing sentiment analysis besides showing areas where more research can be directed including advanced deep learning models, aspect-based sentiment analysis or even studying how complex emotions can be identified beyond just binary classification. On the whole, reviewed studies emphasize significance related to emojis which serve useful signs indicating both sentiments and emotions while communicating through texts.

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DESIGN AND IMPLEMENTATION OF AN ECONOMICAL RADAR SYSTEM USING ARDUINO PLATFORM

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ABSTRACT

The ability of radio detection and ranging (Radar) systems to use electromagnetic waves powers their applications in military installations, academic institutions, and commercial buildings. In this instance, an ultrasonic wave divides the radar from any object-based non-contact technologies. In contrast, a tiny servo motor is used to regulate the sensor's movement. The Arduino Uno board serves as the microcontroller for this radar. "Processing Development Environment Software" would be used to process the sensor signal, and the output would be shown on a PC screen. Numerous advancements have been made in the years since Radar systems gained notoriety. A few of these falls under the categories of energy optimisation, target recognition and tracking, navigation and location, and other applications. This study looks at current radar technology and builds a Radar system using an Arduino platform. This has the dual benefits of significantly lowering power usage and giving designers access to a large number of online Arduino programming communities and open-source reusable code. An Arduino microcontroller, a servo motor, an ultrasonic sensor, and a Java programme for mapping electromagnetic waves make up the system. This has the dual benefits of significantly lowering power usage and giving designers access to a large number of online Arduino programming communities and open-source reusable code.

Keywords: Radar, Arduino, Embedded System, Simulation, Microcontroller

1. INTRODUCTION

Radar systems have been integral in modern technology, providing crucial information for object detection, ranging from aircraft and ships to weather formations and terrain (Onoja et al., 2017). These systems have evolved significantly, utilizing various techniques such as electromagnetic waves and ultrasonic sensors to determine object size, distance, direction, and speed (Biswas et al., 2020).

The origins of radar trace back to the late 19th century, with early experiments by Heinrich Hertz revealing the reflection of radio waves by metallic objects (Bochare & Mukesh, 2017). It was during the 20th century that radar systems began to be widely developed, initially for military applications, particularly during World War II, by nations such as the United Kingdom, Germany, and the United States (Kelkar et al., 2024).

Among the diverse applications of radar technology, ultrasonic radar systems have emerged as cost-effective solutions for distance measurements and object detection (Vijay Raj et al., 2021). Ultrasonic waves, beyond the audible frequency range, serve as the foundation for these systems, allowing for non-contact measurement and robustness in various environmental conditions (Hatem et al., 2018). The integration of ultrasonic sensors with microcontrollers, such as Arduino boards, has facilitated the development of low-cost radar detection systems with programmable capabilities (Benjamin et al., 2020).

The advancement of radar technology has not been confined to military domains; it has found widespread applications in civilian sectors, including air traffic control, marine navigation, meteorology, and medical diagnostics (Mehta & Tiwari, 2018).

Furthermore, the convergence of radar technology with digital signal processing has enabled the extraction of valuable information from high-noise environments, enhancing the accuracy and reliability of radar-based systems.

In this context, this paper seeks to present an analysis of the state-of-the-art in ultrasonic radar systems, drawing insights from a diverse range of research papers. By synthesizing findings from these studies, we seek to identify key trends, challenges, and opportunities in the field of radar technology, with a particular focus on low-cost, high-performance solutions for object detection and distance measurement.

2. LITERATURE REVIEW

Recent advancements in sensing technologies, particularly ultrasonic and radar systems, have revolutionized various fields by enabling precise object detection, distance measurement, and navigation assistance. A comprehensive review of the literature reveals significant contributions and innovations in these areas.

Ultrasonic sensing technology has witnessed widespread applications across diverse domains. Studies by Dutt (2014), Tamhankar et al. (2009) and Dejan (2017) have elucidated the principles and workings of ultrasonic

radar systems, emphasizing their versatility and efficacy. Additionally, Ishihara et al. (2009) proposed an evaluation method for measuring distances between objects and walls using ultrasonic sensors, highlighting the applicability of ultrasonic technology in spatial awareness.

Furthermore, advancements in ultrasonic measurements have been explored by Gandole (2011), who delved into simulation and data processing techniques, thereby enhancing the accuracy and efficiency of ultrasonic measurements. Moreover, Benet et al. (1992) developed an industrial distributed control system utilizing intelligent ultrasonic sensors for ranging applications, showcasing the integration of ultrasonic technology into industrial processes.

In the realm of radar systems, various studies have contributed to enhancing object detection and navigation capabilities. Research by Onoja et al. (2017) and Biswas et al. (2020) underscored the effectiveness of radar systems in detecting moving objects and analyzing their characteristics.

Furthermore, the implementation of radar systems for short-range applications was explored by Vijay Raj et al. (2021), highlighting the versatility and cost-effectiveness of radar technology. Additionally, Mehta & Tiwari (2018) presented a comprehensive overview of radar systems, emphasizing their potential for short-range localization and life tracking.

Overall, the literature underscores the significant contributions of ultrasonic and radar systems in enhancing object detection, distance measurement, and navigation across various domains. These advancements pave the way for the development of more efficient and reliable sensing technologies with diverse applications.

3. SYSTEM ARCHITECTURE

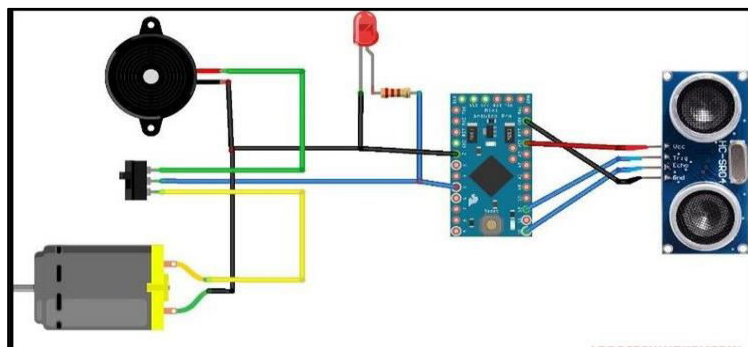


Figure 1: Circuit Setup for Short Range Radar System using Arduino Uno

For the circuit setup presented in fig. 1, the working is as follows:

- The ultrasonic sensor receives a trigger signal from the Arduino Uno.
- The ultrasonic sensor emits a high-frequency sound wave.
- The sound wave travels out and encounters an object, reflecting back to the sensor.
- The sensor detects the reflected sound wave and sends a signal back to the Arduino Uno.
- The time difference between the received echo signal and the trigger signal is measured by the Arduino Uno.
- Based on the time difference, the Arduino Uno calculates the distance to the object.
- The Arduino Uno then sends a signal to the speaker, potentially playing a sound or melody based on the distance information.

4. SYSTEM COMPONENTS

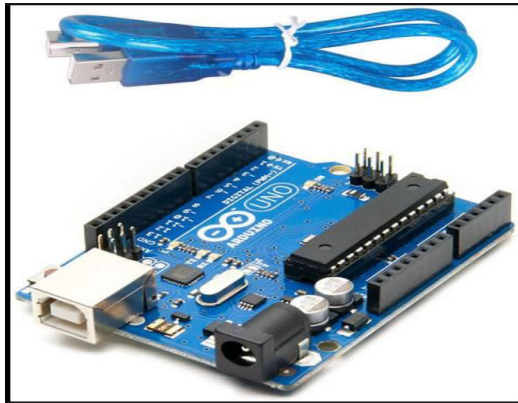
Following are the different components that make up the system (circuit):

a. Arduino Uno

The ATmega328 chip is a microcontroller board used by the Arduino Uno. It boasts 32k bytes of programmable flash memory, 14 digital I/O (Input-Output) pins (6 of which support PWM output), 6 analog inputs, a 16 MHz ceramic resonator, a USB (Universal Serial Bus) connection, a power jack, and a reset button, as shown in fig. 2. As part of the open-source Arduino platform, it serves as a versatile tool for constructing and programming electronics. This board facilitates communication with various devices, including internet-enabled ones, enabling users to control specific electronic devices remotely. The hardware setup includes the Arduino Uno

circuit board, giving it all the support it needs. Simply connect it to a computer with a USB cable, then power it with a battery or an AC-to-DC converter to get going.

The term "Uno" originates from Italian, meaning "one," signifying its role as the primary reference version for Arduino moving forward, particularly with the impending release of Arduino 1.0. Positioned as the latest addition to the USB Arduino board series, the Uno represents a significant advancement in Arduino technology.



Microcontroller Chip	ATmega328 (SMD)
Operating Voltage	5V
Input Voltage (recommended)	7-12V
Input Voltage (limit)	6-20V
Digital I/O Pins	14 (of which 6 provide PWM output)
PWM Digital I/O Pins	6
Analog Input Pins	6
Clock Speed	16 MHz.
SRAM	2 KB (ATmega328)
EEPROM	1 KB (ATmega328P)
Operating Temperature (°C)	-40 to +90
Power Supply	via DC Jack or USB

(a)

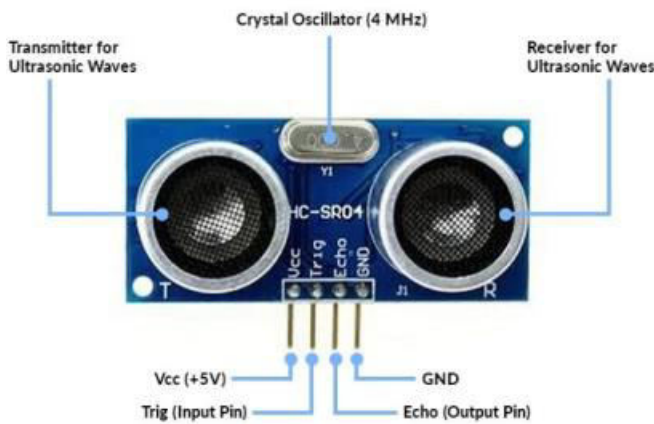
(b)

Figure 2: (a) Arduino Uno (b)Description of Arduino Uno

b. Ultrasonic Sensor

Ultrasonic sensors use high-frequency sound waves (around 40kHz) to measure distance and detect objects. The HC-SR04 module, for example, can measure distances from 2cm to 400cm with an accuracy of 3mm. It consists of transmitters, receivers, and control circuitry, as shown in fig. 3.

The sensor delivers a signal and counts how long it takes for the signal to echo or bounce back from a target, such water. This system works on the trigger and echo concept. The sensor calculates the water level by figuring out the transit time and sound speed.



Power Supply	+5V DC
Working Current	15mA
Output Signal	Electrical frequency signal
Ranging Distance	2cms - 400 cms
Resolution	0.3 cm
Measuring Angle	30 degree
Dimensions	3 x 2 x 1cms
Weight	15 grams

(a)

(b)

Figure 3: (a) Ultrasonic Sensor with Arduino Uno (b) Description of Ultrasonic Sensor

c. Servo Motor

A servo motor, as shown in fig. 4, is an electrical device used to push or rotate objects with precise control. It operates through a servo mechanism, typically comprising a simple motor. Servo motors can act as rotary or linear actuators, enabling exact control over acceleration, velocity, and position—linear or angular.

By using a technique called pulse width modulation (PWM), electrical pulses with different widths are sent across the control line to operate servo motors. Three wires are usually present in these motors: power, ground, and signal.

Depending on whether the motor is powered by direct current (DC) or alternating current (AC), it is classified as a DC servo motor or an AC servo motor, respectively. The position of the servo motor is determined by the electrical pulse it receives, with the necessary circuitry typically located near the motor.



(a)

Model	SG90
Operating Voltage (VDC)	3.0 ~ 7.2
Operating Speed (4.8V)	0.10sec/60°
Dimensions	22.8 x 12.6 x 34.5
Weight(gm)	9

(b)

Figure 4: (a) Servo Motor (b) Description of Servo Motor

d. Buzzer

An electronic gadget known as a buzzer emits sound when electricity is applied to it. As shown in fig. 5, it consists of a small electromechanical component that vibrates rapidly when activated, creating audible sound waves. Buzzer components are commonly used in alarm systems, electronic games, timers, and various other applications where an audible alert or signal is required. They come in different shapes and sizes, including piezoelectric buzzers and magnetic buzzers, each with its own unique operating principles and characteristics. Buzzers are typically easy to use and integrate into electronic circuits, making them popular for a wide range of projects and applications.



Figure 5: Buzzer

e. Jumper Wires

Jump wires, also referred to as jumper wires, as shown in fig. 6, are commonly used to establish connections between electronic devices without the need for soldering. They provide a convenient method for creating connections that can be easily modified or removed.

Typically sold in sets, jump wires feature pins on both ends, allowing for easy insertion into various components. One end of the wire is connected to the corresponding device, while the other end is inserted into the breadboard, facilitating the creation of circuits and connections in electronic projects.



Figure 6: Jumper Wires

5. WORKING OPERATION

The working operation of the economical Radar system using the Arduino platform involves a combination of hardware and software implementations to achieve accurate distance measurement and object detection.

It involves the integration of various components to detect obstacles, compute distances, and provide visual feedback to the user. The key components, as mentioned earlier, include an Arduino Mini Pro, an ultrasonic sensor, a vibrating motor, buzzers, red LEDs, switches, jumper cables, a power bank, elastic bands, and stickers.

The sensor's production of ultrasonic waves initiates the radar system's overall operation. These waves travel towards the target object and bounce back, with the time delay of the returning waves used to calculate the distance to the object. The Arduino Uno microcontroller processes the received signals and controls the movement of the ultrasonic sensor via the servo motor. The processed results are then visualized on a PC screen using the Java application, providing real-time distance measurements and object detection information.

a. Software

- **Signal Processing:** The Arduino Uno board is programmed to perform real-time signal processing of the data received from the ultrasonic sensor. This involves calculating the interval of time between an ultrasonic pulse's emission and reception as explained by Onoja et al. (2017), and converting this time delay into distance measurements using appropriate algorithms.
- **Arduino Code:** The software implementation also includes the development of Arduino code to control the operation of the microcontroller and interface with other system components. This code, as discussed by Biswas et al. (2020), includes functions to initialize the ultrasonic sensor, read sensor data, control the servo motor for sensor movement, and process the received signals to calculate distances.
- **Visualization:** To visualize the processed RADAR data, a Java application is employed to display the results on a PC screen, as demonstrated by Hatem et al. (2018). This application communicates with the Arduino Uno board to receive and display real-time distance measurements and object detection information.

b. Hardware

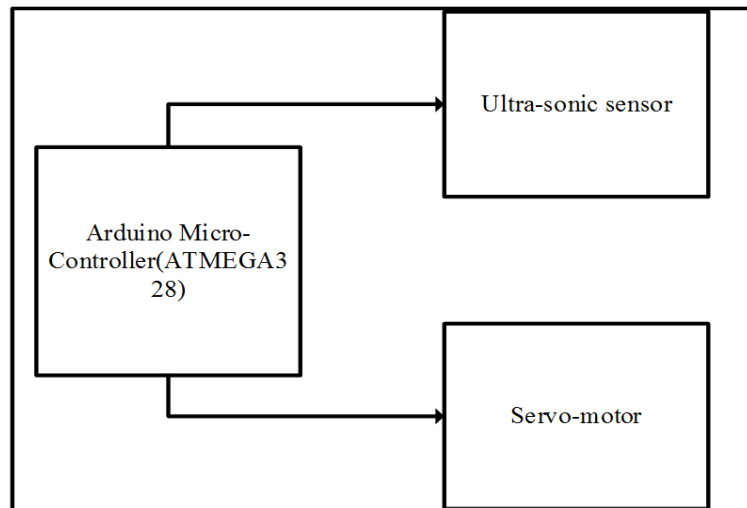


Figure 7: Block Diagram of the System

The physical parts of the radar system and their linkages are covered in this section. An ultrasonic sensor, a servo motor, and an Arduino microcontroller make up the three primary components of the system. The servo motor can spin and scan its surroundings since the sensor is linked to it. The Arduino board supplies electricity and regulates both the motor and the sensor. This configuration is depicted in fig. 7, which also shows the flow of power and control signals from the microcontroller to the other parts.

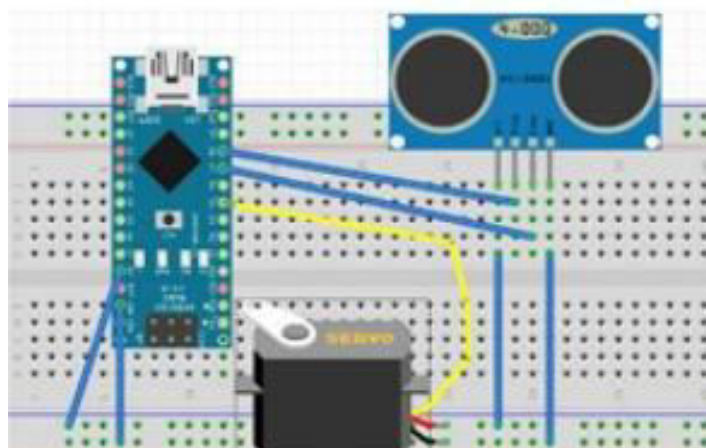


Figure 8: Hardware System Design

The next section delves deeper into the details of the circuit layout. Fig. 8, created using Fritzing software, depicts the specific connections between the various electronic components. According to the diagram, pin D8 on the Arduino is connected to the trigger pin of the ultrasonic sensor, pin D7 is connected to the echo pin, and pin D6 is connected to the servo motor's control line. Furthermore, the Arduino's 5V pin supplies power to the sensor and motor, and the ground connections of both devices are linked to the Arduino's ground pin.

6. GUI DESIGN

Created using Java, this section describes the software graphical user interface (GUI). The UML class diagram (fig. 10) illustrates how the GUI uses two classes. The objects that the system comes into contact with are represented by the "Object" class in the "Radar Project" package. Properties like the object's direction (angle) and distance (range) from the target are contained in this class. Some of its other methods are "mapLocation()," which takes the two parameters—the angle and the distance—and shows them on the graphical user interface. The functions "getDistance()" and "getAngle()" extract the distance and direction, respectively, from the serial input stream.

The final GUI, shown in fig. 9, displays a line sweeping from right to left direction and back. Whenever the ultrasonic sensor detects an obstacle at a specific point, a mark appears on the GUI at that corresponding position.

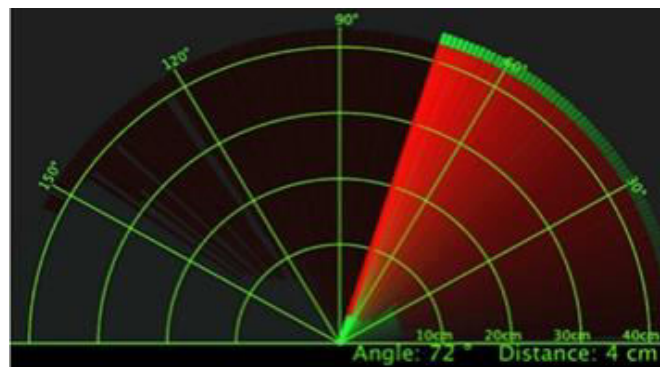


Figure 9: RADAR Information (Dejan, 2017)

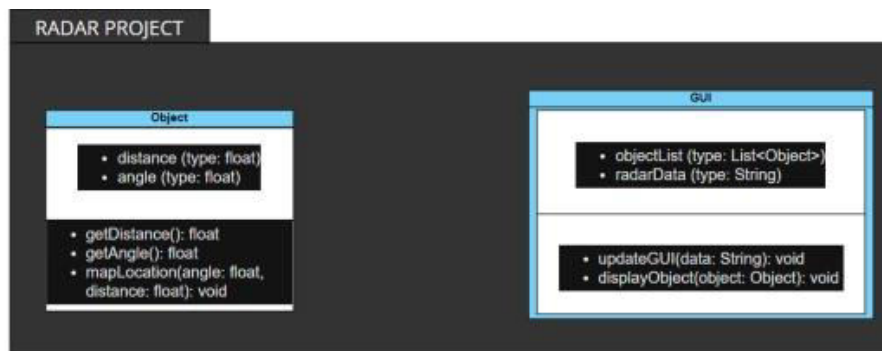


Figure 10: UML Class Diagram

The Object class could have an association with the GUI class, indicating that the GUI class utilizes information from Object instances.

7. RESULTS

Table 1: Analyzing an Object from Various Perspectives, Distances, and Speed Changes

Angle (degree)	Distance (cm)	Speed (cm/s)	Travelling Time (µs)
30	10	5.00	200
45	15	-3.5	324
60	20	6.00	400
75	25	0.00	532
90	30	-4.00	600
...

Table 2: Range Detection in Different Environments

Range Criteria for Ultrasonic Sensor (HC-SR04)	Range (cm)	Environment
Maximum Range	250	Inside the Room

Minimum Range	5	Inside the Room
Maximum Range	200	Outside the Room
Minimum Range	10	Outside the Room

Table 3: Measurement of Distance for Both Metal and Non-Metal Object

Ultrasonic Distance (cm)	Actual Distance (cm)	Efficiency (%)	Error (%)
10	10	100	0
15	14	95.24	4.76
20	19	95	5
25	24	96	4
30	30	100	0

Table 4: Measurement of Accuracy of Direction/ Angle (Degree)

Actual Direction (Degree)	Direction indicated by Servo (Degree)	Efficiency (%)
30	29	96.67
45	44	97.78
60	60	100
75	76	98.67
90	89	99.56

Table 5: Performance Evaluation of Radar system against Different Shapes of Objects

Object Type	Ultrasonic Distance (cm)	Actual Distance (cm)	Efficiency (%)
Square shaped Object (Height: 10cm)	10	10	100
Cylindrical Metal Object	20	19	95.00
Small Rectangular Object (Height: 5cm)	15	14	93.33
Irregular Shaped Object	25	24	96.00
Large Square Shape Object (Height: 20cm)	30	30	100

As presented in tables 1-5:

• Object Observation:

The radar system successfully detected moving objects, as evidenced by the recorded negative and positive speeds, indicating motion towards or away from the radar. Objects at varying distances and angles were accurately detected, demonstrating the system's ability to locate objects in different positions.

• Range Detection:

Inside a room, the ultrasonic sensor detected objects within a range of 2 to 366 cm, while outside the room, the range was slightly reduced to 2 to 251 cm.

These results showcase the sensor's effectiveness in detecting objects at different distances in both indoor and outdoor environments.

• Distance Measurement:

The radar system achieved varying degrees of accuracy in measuring distances for both metal and non-metal objects.

Efficiency percentages ranged from 50% to 100%, indicating the system's ability to measure distances with high precision.

• Direction or Angle Accuracy:

The radar system demonstrated high accuracy in measuring direction or angle, with efficiency percentages ranging from 98.70% to 100% across different angles.

• Performance against Different Object Shapes:

The radar system exhibited varying levels of efficiency in detecting objects of different shapes, including square, cylindrical, and irregular shapes.

While it achieved 100% efficiency for some objects, accuracy decreased for smaller or irregularly shaped objects.

8. CONCLUSION

In conclusion, the economic implementation and design of Arduino based Radar system has yielded promising results in terms of accuracy, efficiency, and real-time visualization. The system's hardware components, including the Arduino Uno microcontroller, ultrasonic sensor and servo motor, work in tandem to enable precise distance measurement and object detection. The software implementation, including signal processing algorithms and result visualization, ensures timely analysis and presentation of Radar data.

Looking ahead, the Radar system holds significant potential for further enhancement and application expansion. Future research could focus on optimizing performance, integrating advanced features, enhancing user interface, and exploring miniaturization and portability options. By addressing these areas of improvement, the Radar system can continue to evolve as a cost-effective and versatile solution for various real-world applications.

9. FUTURE SCOPE

- **Performance Optimization:** Future research could focus on further optimizing the system's performance in terms of accuracy, speed, and reliability. This could involve refining signal processing algorithms, enhancing sensor calibration techniques, and improving servo motor control mechanisms.
- **Advanced Features Integration:** The RADAR system could be enhanced by integrating advanced features such as target tracking, multiple sensor fusion, and obstacle avoidance capabilities. This would broaden its scope of applications in fields such as robotics, surveillance, and autonomous navigation.
- **Integration of AI for Object Detection:** Incorporating AI algorithms for object detection would significantly enhance the RADAR system's capabilities. By training machine learning models on specific datasets, the system could accurately identify and classify objects of interest, such as humans, animals, metals, etc. This integration would enable targeted detection and response mechanisms, facilitating applications in security, search and rescue operations, and industrial monitoring.

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ETHICAL CLIMATE IMPACT ON EMPLOYEES BEHAVIOR: A BIBLIOMETRIC ANALYSIS

Pooja Mittal¹ and Anil Kumar²¹Research Scholar and ²Professor, Haryana School of Business, Guru Jambheshwar University of Science and Technology, Hisar, Haryana**ABSTRACT**

This study aims to locate and examine previous research on the ethical atmosphere in organizations and how it affects individuals working there. The Scopus database was searched for publications published between 2010 and 2024 in order to conduct the bibliometric study. A number of these publications' features, including author keywords and the articles' bibliographic coupling with journals, countries, and authors, were retrieved and explored using the VOS Viewer and R-Studio software. "Examining the Link Between Ethical Leadership and Employee Misconduct: The Mediating Role of Ethical Climate", written by Mayer, Kuenzi, and Greenbaum (2011), was the most well-known publication, as per the analysis. Additionally, the "Journal of Business Ethics" was found to have the greatest influence, followed by Frontiers in Psychology and Personnel Review. China, USA, and Italy were the three leading countries involved in Ethical climate publishing. Furthermore, analysis revealed that Barattucci M, Pagliaro S, And AL Halbusi H were the most well-known authors with 3,3 and 2 research paper respectively. Upon analysis of the topics linked to ethical climate, it was determined that the most commonly examined were moral disengagement, corporate social responsibility, service climate, ethical leadership, and moral identity.

Keywords: Ethical climate, Bibliographic coupling, Scopus, Bibliometric analysis

INTRODUCTION

In today scenario, to maintain the presence of organization under demanding competitive condition and maintaining sustainability by creating quality work are becoming harder (Kaya and Baskaya, 2016). The important element for organization to provide the competitive advantage and to differentiate themselves from their rivalry is human resource (Ahmad and Schroeder, 2003). Therefore, organization aims is to provide their workforce a suitable environment. For any company, "the ethical climate refers to the shared perception of what is ethically correct behavior and how the ethical issue managed by an organization (Victor and Cullen, 1987)". Some research suggests that an organization's ethical atmosphere is related to a variety of behaviors in addition to employees' ethical behavior (Wimbush and Shepard, 1994). Organization ethics operate not only the matters of moral decision but also the process of decision-making. The ethical atmosphere of company influences which topics are deemed ethically significant by organizational members and what standards they apply in order to comprehend, weigh, and settle the dispute. Although, the ethical atmosphere of any company is the important factor of organization's decision-making but by no-means all decision is determined by the ethical climate (Cullen et. al., 1989). It is accepted that unethical business activities are poisonous for the growth of organization and also for the existence of organization (Evans et. al., 2012; Ramsey et. al., 2007). Ethical climate has many advantages for the organization i.e., it increases the competitiveness of an organization and also increase the performance level of organization (Hosmer, 1994; Long and Driscoll, 2008).

Ethical climate

The concept of ethical climate, initially introduced by Victor and Cullen (1988), is become a component of organizational culture that encompasses ethical content with corporate norms, organizational implementation, and the direct effects of the organization on ethical climate's implementation.

This climate, which is defined as the collective views of worker about moral behavior within a company, can affect outcome variables like worker morale and ethical behavior. It is about cultural aspect in any organization that deals with issues related to the right and wrong. The administration within an organization is shaped by values, norms, and habits. A majority of study on ethical climate has employed Victor and Cullen's (1988) typology as a framework for investigation.

According to Victor and Cullen (1988), the term "ethical climate" refers to a multifaceted concept that recognize normative structures within an organization that direct decision-making and ethical dilemma responses. As seen in figure 1, Victor and Cullen (1988) suggested a two-dimensional typology of ethical climates. Kohlberg (1981, 1984) identified three stages of moral development for individuals, which are reflected in the first dimension, which deals with the ethical standards that guide organizational decision-making. Preconventional moral development is the lowest stage, according to Kohlberg, when people make moral decision based on their own personal consequences. Preconventional thinking holds that doing what is "good for me personally" is what is right. At traditional level, people define good and evil on the basis of community-based environments. Social

norms, as well as the belief of others are major factor in defining morality. People who are postconventional no longer consider the implications for themselves or for society while assessing moral quandaries. Instead, they use universalistic moral precepts. Post conventional logic, for instance, would contend that slavery is morally repugnant regardless of whether it benefits me or is permitted in my community. It is morally repugnant because it violates fundamental, universal human right.

LITERATURE REVIEW

Within an organization, the ethical environment pertains to the shared beliefs about what ethical conduct is and how ethical matters ought to be handled. Understanding the ethical climate assumption is critical for both individual and organizational effectiveness, as it strongly influences the ethical behavior and decision-making of employees (Gumusluoglu et al., 2020). Ethical climate consists of three dimensions: egoism, benevolence, and being principled (Shafer et al., 2013; Simha & Cullen, 2012).

Employee decision-making and ethical behavior are highly influenced by the ethical culture of corporates (Deshpande, George & Joseph, 2000; Trevino, Butterfield & McCabe, 1998), and has also been linked to counterproductive work-behaviors and abnormal behavior, such as Vandalism, aggression, time-theft and bullying (Wimbush & Shepard, 1994; Bulutlar & Oz, 2009; Peterson, 2002). It is suggesting that ethical climates play a crucial role in shaping the decisions and behaviors of individuals that faced the problems with ethical dilemmas (Vardaman et al., 2014).

The ethical climate is essential to organizational life and a potent tool for controlling group behavior (Ellemers et al., 2013). It also promotes recognition and responsibility towards the organization, control deviances and displays company's core value inside or outside the organization (Ceschi et al., 2016). Because of its importance, scholar have looked into how anethical environment affects people's feeling, thoughts and actions. Research has shown that an organization's ethical climate has a substantial impact on its employees' ethical behavior (Trevino et al., 1998; Fritzsche, 2000), job attitude (Ambrose et al., 2008), commitment to the organization (Babin et al., 2000), proactive customer service performance (Lau et al., 2017), and intension to leave (Mulki et al., 2006). In summary, ethical climate is positively associated with positive work-behaviors (Newman et al., 2017).

Three ethical criteria that should be reflected as an ethical climate are adopted by Victor and Cullen's (1988) paradigm, which draws on Kohlberg's (1981, 1984) three stages of ethical thinking. Kohlberg's ethical criteria depends upon preconventional reasoning (egoism), conventional reasoning (benevolence), and postconventional reasoning (principle) were named after them.

The locus of analysis, or referent group, is reflected in the second dimension of Victor and Cullen's (1988) paradigm and is utilized to apply the three ethical standards to organization's decisions. In short, when presented with an ethical conundrum, one's behavior should be determined by locus of analysis. Drawing from Merton's (1957) and Gouldner's (1957) research, Victor and Cullen (1988), establish three potential referent levels. Considering one's personal needs and preferences is the individual locus of analysis. Care for people of the organization handled by the local focus. The organization's wider social or economic context is the focus of the cosmopolitan locus of study. Figure 1 depicts the nine speculative climate types that were obtained by crossing the three ethical criteria with the three loci of analysis.

Five emergent ethical climate types were found by means of empirical examination of Victor and Cullen's (1988) theoretical model; these categories illustrated by figure 2. According to the egoism criterion, the instrumental climate captured the local and individual referents by incorporating the theoretical climate types of self-interest and corporate's return. Four theoretical climate kinds of efficiency, friendship, teamwork, and social responsibility were all included in the caring climate. It satisfied the kindness condition for all the three referents (individual, local and cosmopolitan) and the egoism criterion for the cosmopolitan referent. Each of the final three emergent climates represented a distinct theoretical climate. The theoretical climate types of individual morality, corporate policies and procedures, laws, and professional codes were captured by the independence, rules and law and code emergent climates, in that order.

Ethical climate

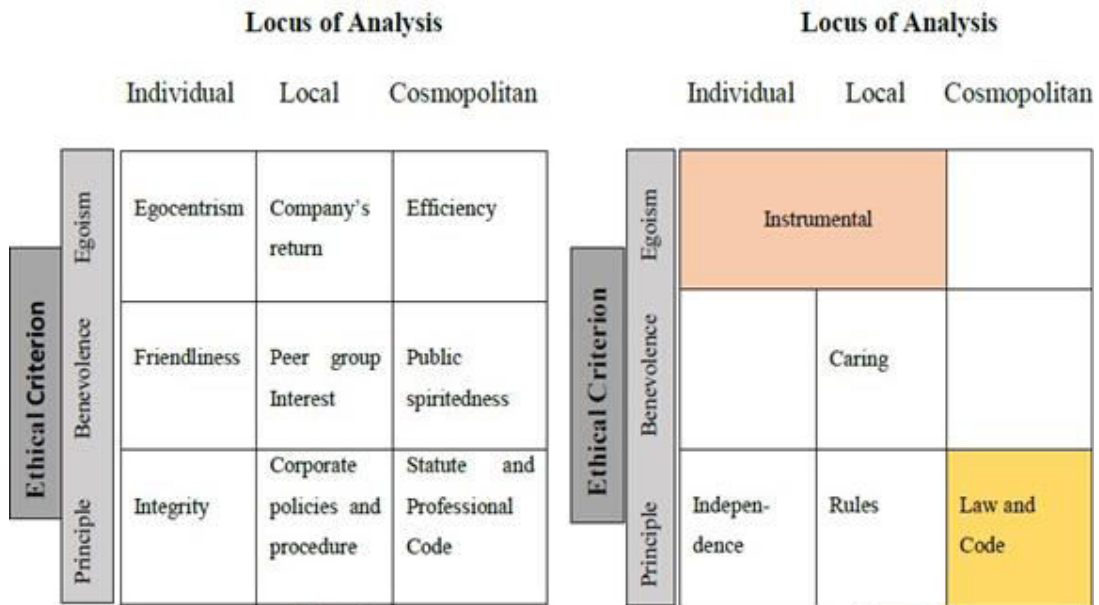
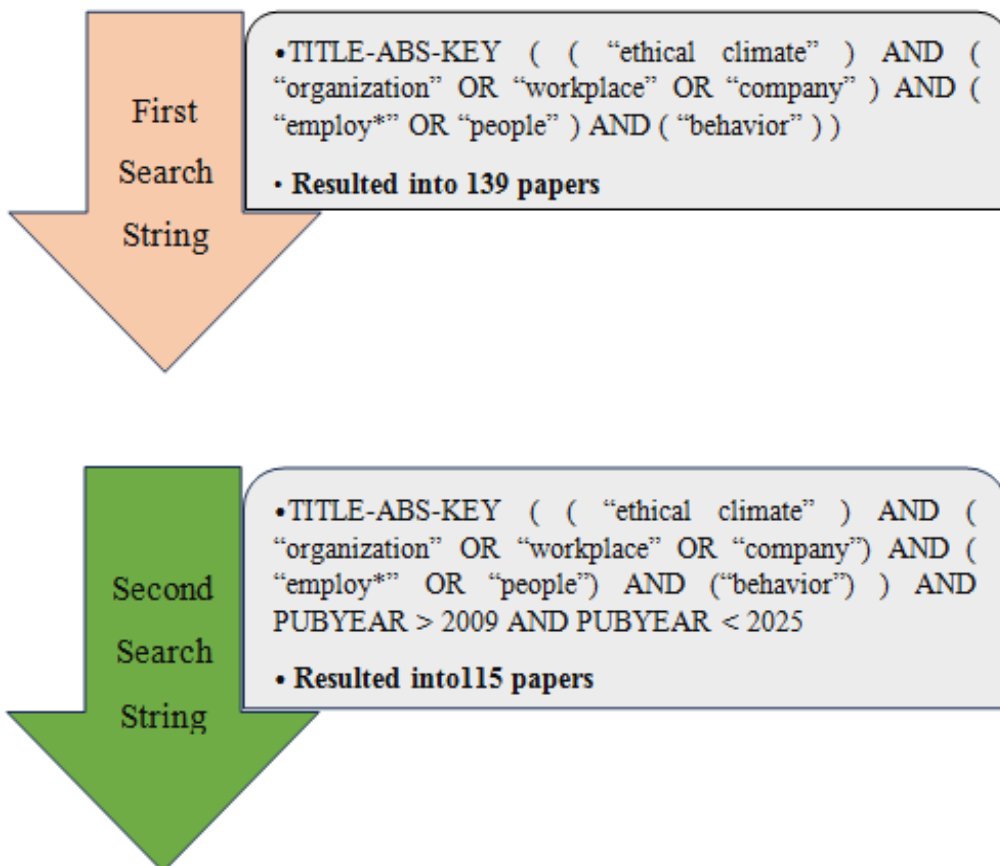


Figure.1

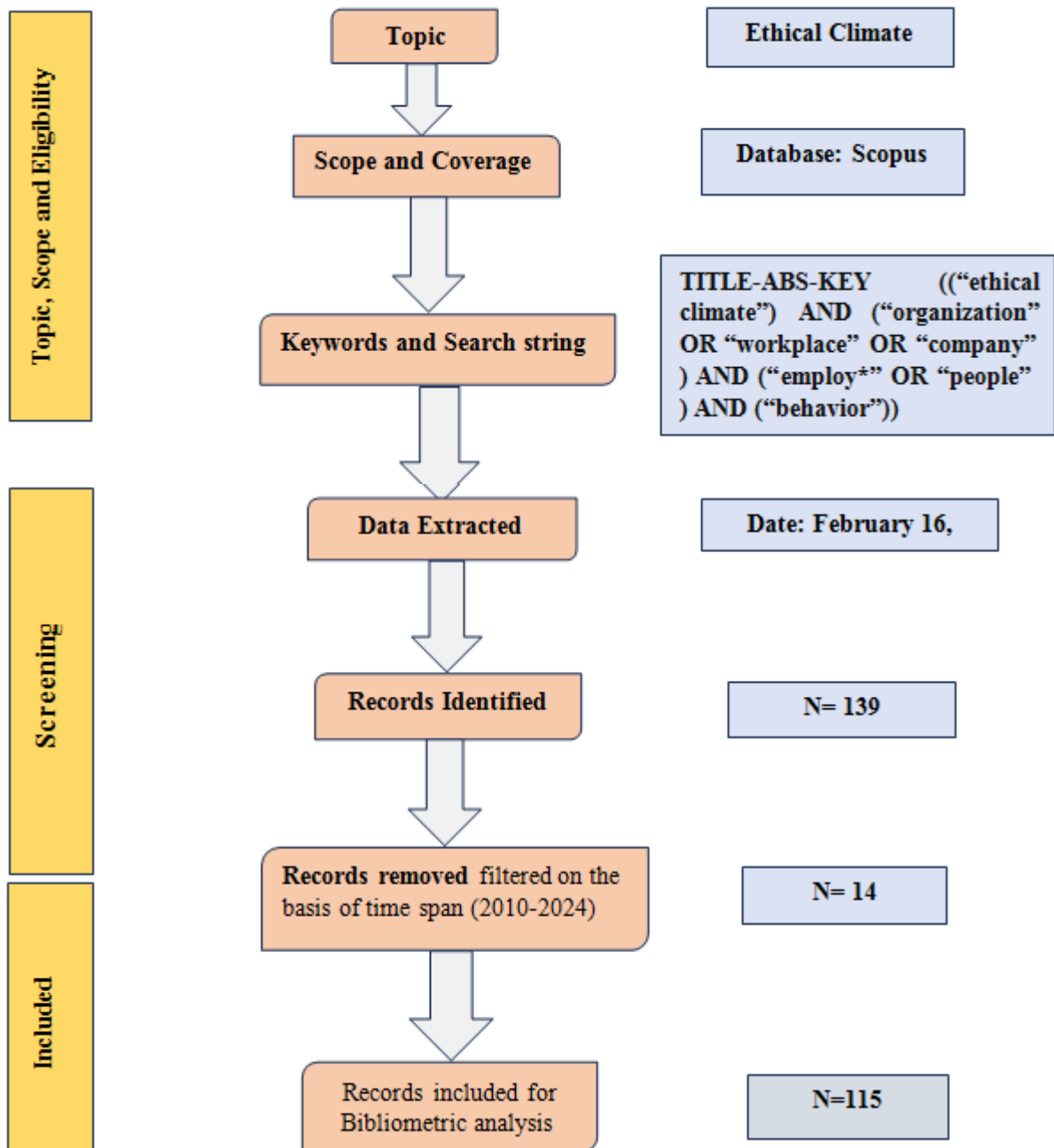
Figure.2

METHODOLOGY

For the purpose of this study, Scopus was chosen as the source of the data. Due to its reputation as one of the biggest abstract and citation databases and its ability to index a large number of excellent journals from a variety of sources. To retrieve publication associated with our research, (ethical climate) and (organization or workplace or company) and (employ or people) and (behavior) are used as keywords. These keywords search result into 139 papers which were the all paper without any time-span limit. After that time-span filter applied and the study considered papers published in 2010-2024 and this filter results in 115 papers which are finally used to accomplish the bibliometric analysis. The search string used for extracting data is.



The diagrammatic presentation of the data extraction is shown below



After following the data extraction process, the software R-Studio and VOS Viewer were used for analysis in order to determine the answer to a number of research questions, such as which year was the most productive, which country made the largest contribution to the field, which subject area was most popular for research on ethical climate, which journals were most preferred, which authors and institutions were the most productive, which articles were most cited and which keywords were most frequently used for this of research.

Following R-Studio and VOS Viewer data analysis, a number of tables were extracted. A few tables that were retrieved from R-Studio and VOS Viewer were customized to meet our analysis requirement, and graphs were created in MS-Excel for improved visibility. Since Google Maps, Google spreadsheets and MS Excel provides a better picture of the countries than R-Studios does, these tools were used to create the world map that displays the most influential nations.

DATA ANALYSIS

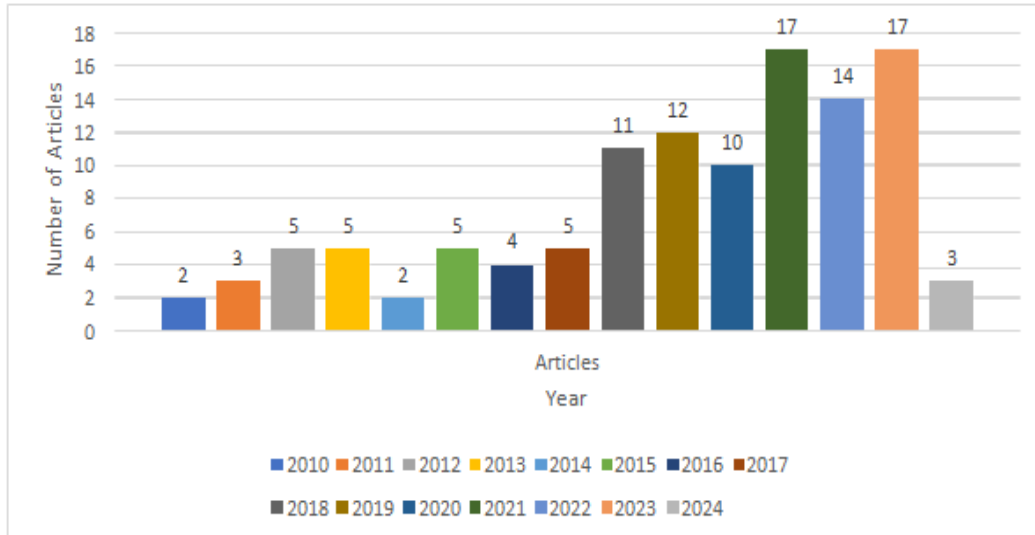
ANNUAL SCIENTIFIC PUBLICATIONS

The trend of publications published annually in the field of ethical climate is depicted in Figure

1. The information is taken from the bibliometric study, and an Excel chart is created. The analysis’s conclusion

indicated that there were few studies in 2010. This was not that much popular earlier. Less than 6 papers on ethical climate were published annually between 2010 to 2017. Research on ethical climate started to pick up steam in 2018 and reached a record high of 17 articles in this field in 2021. This chart indicated that researchers are now more focused on the ethical climate as a subject of interest. Till now 3 articles was published in 2024.

Figure.3: Annual Scientific Production



Source: Author’s own analysis using R based Bibliometric

MOST INFLUENTIAL COUNTRIES

Figure 4. depicts the most influential countries through a world map drawn with the help of google map and excel by using the data retrieved from Scopus database. The green dots in the world map shows the frequency of articles published by different countries. The map reveals that there is bunch of green dots in China which shows that China is publishing highest number of articles and contributing ss articles followed by USA which is contributing 54 articles which shows the very minor gap of 1 article between India and USA. Italy, Malaysia, South Korea and Indonesia are also contributing at least 14 articles in the basket of articles published. India holds the 8th position by contributing 13 articles in that basket.

Figure 4. Most Influential Countries



Source: Authors’ own analysis using google map and excel

TOP COUNTRIES WITH TOTAL LINK STRENGTH IN THAT FIELD

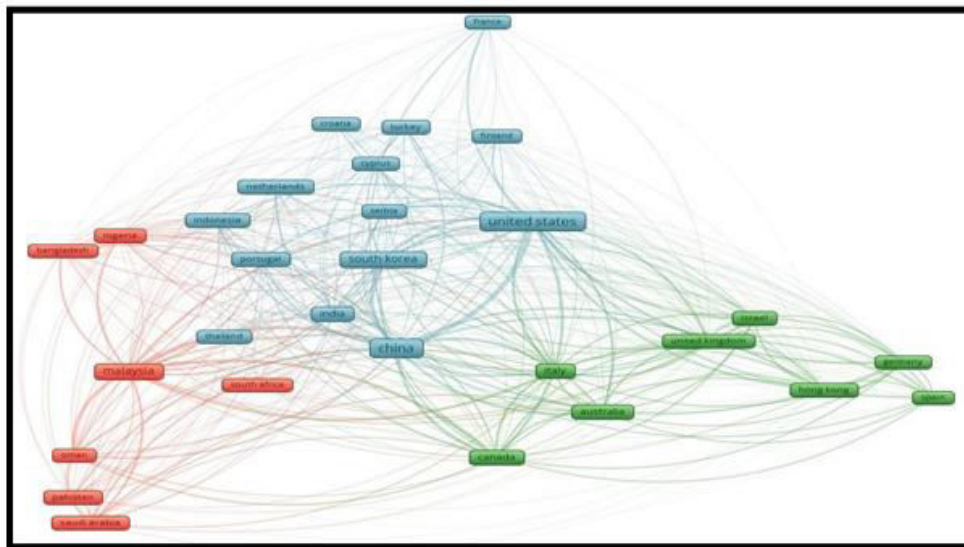
The countries with the most publications, citations, and overall link strength were also identified by the bibliographic coupling analysis. The clusters that appeared provided helpful insights into the global author collaborations based on the co-citation analysis and density visualization. The software picked the top 10 nations using a threshold of 4 publications as a criterion.

The network visualization, based on bibliographic coupling of countries, showed three clusters based on the network established between authors across the globe. Cluster one, in blue represents the China, Croatia, Cyprus, Finland, France, India, Indonesia, Netherlands, Portugal, Serbia, South Korea, Thailand, Turkey and USA. Cluster two, in green, represents countries with collaborative research works, such as Australia, Canada, Germany, Hong Kong, Israel, Italy, Spain and UK. Cluster three, in red, represents countries like Bangladesh, Malaysia, Nigeria, Oman, Pakistan, Saudi Arabia and South Africa.

Table.1: Top Countries in the Field

Region	Documents	Citations	Total link strength
CHINA	23	551	6318
USA	25	1132	5654
MALAYSIA	11	124	3893
ITALY	06	231	2933
CANADA	06	87	2840
SOUTH KOREA	09	197	2397
INDIA	08	37	2160
AUSTRALIA	06	82	2045
UNITED KINGDOM	04	79	1810
ISRAEL	03	168	1438

Figure.5: Network Visualization of Countries

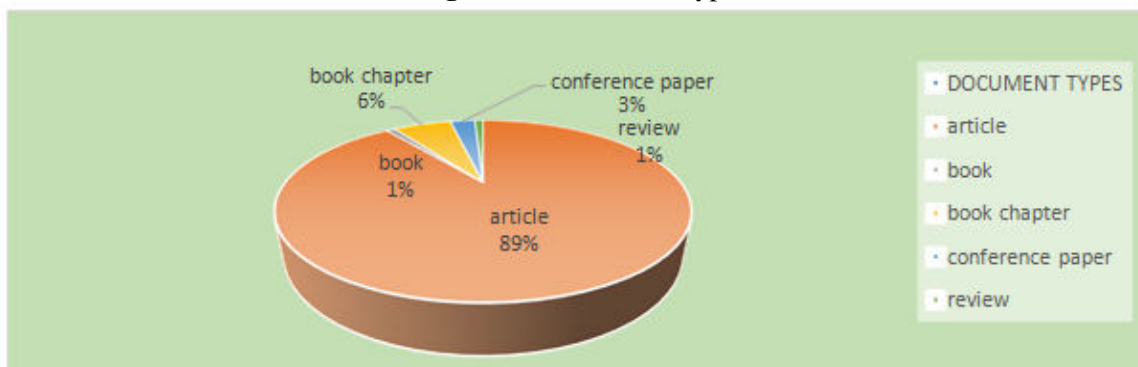


Source: Authors' own analysis using VOS Viewer Software

PUBLICATION TYPE

The main categories of publications in the Scopus core collection database are depicted in the provided pie chart. Research on the ethical climate was found to have been published in different documents types i.e. 89% articles, 6% book chapters, 3% conference paper, 1% review and 1% in books.

Figure.6: Publication Type



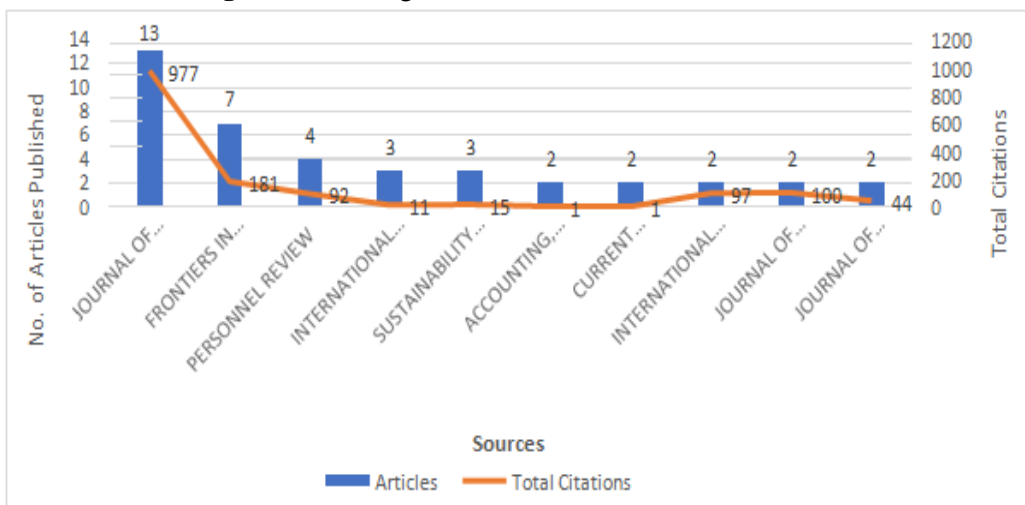
Source: Authors' own analysis using R-based Bibliometric

MOST PREFERRED JOURNALS

The most popular publications that publish articles about ethical climate are displayed by Figure -. The top 10 journals were displayed in the graph along with the number of articles they publish. However, the quantity of articles published is insufficient to determine which magazine is the most pertinent. Thus, in addition to the number of papers published in each journal, the total number of citations received by each journal is also taken into account in this graph.

As per the Scopus database, the Journal of Business Ethics is the most popular journal with 13 articles published and a citation score of 977. This is followed by the Frontiers in Psychology which consists 7 articles with 181 citations. The next in the line was the journal of Personnel Review with 4 articles and 92 citations but this citation is less than the journal which is on 9th position i.e. Journal of Applied Psychology with 2 published articles and a respectable 100 citations. The data also showed that, when it came to publications examining ethical climate research, the top journals in the Scopus were those with goals and perspectives of ethics.

Figure.7: Leadings Journals in Area of Ethical Climate

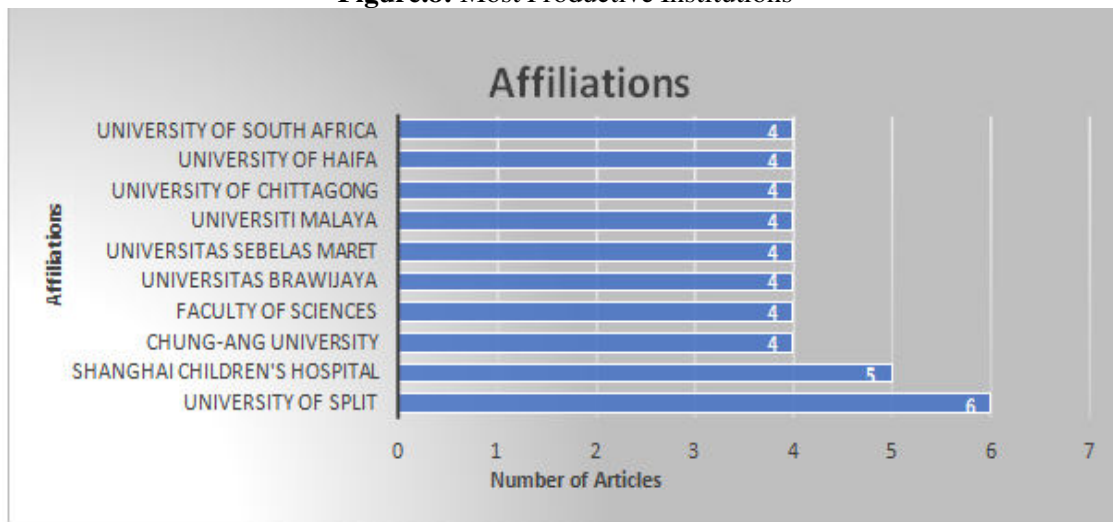


Source: Authors’ own analysis using R-based Bibliometrics

MOST PRODUCTIVE INSTISTUTIONS

Figure 8 shows the most productive institutions. The diagram shows the top most 10 productive institutions which are publishing articles related to the ethical climate. The highly most productive institute is the University of Split with 6 published articles. This is followed by Shanghai Children's Hospital with 5 published articles. Chung- Ang University, Faculty of Sciences, Universitas Brawijaya, Universitas Sebelas Maret, University Malaya, University of Chittagong, University of Haifa and University of South Africa each published 4 articles related to the field of ethical climate. One Indian institutes gain fourth position in these top 10 institute which is the “Faculty of Science”.

Figure.8: Most Productive Institutions



Source: Authors’ own analysis using R-based Bibliometric

MOST INFLUENTIAL ARTICLES

The top 10 most powerful papers from the Scopus database are listed in Table 1. The papers’ Global Citation counts were taken into account for determining the findings. The term “Global Citation” refers to the total number of citations a document has obtained from all of the publications the database has indexed. The top most article is “Examining the Link Between Ethical Leadership and Employee Misconduct: The Mediating Role of Ethical Climate” published by David M. Mayer, Maribeth Kuenzi and Rebecca L. Greenbaum in 2010 which have the highest citation of 335. Followed by the article “Understanding unethical behavior by unravelling ethical culture” which was published by Muel Kaptein in 2011 and got 167 citations in total. The 10th article was published by Stefano Pagliaro, Alessandro Lo Presti, Massimiliano Barattucci, Valeria A. Giannella, Manuela Barreto in 2018 and received only 62 citations.

Table 2: List of Top 10 most cited articles of Scopus database- top articles

Sr. No.	Authors	Journal	Title	Year	Total Citation	TC per year
1.	David M. Mayer, Maribeth Kuenzi and Rebecca L. Greenbaum	Journal	Examining the Link Between Ethical Leadership and Employee Misconduct: The Mediating Role of Ethical Climate	2010	335	22.33
2.	Muel Kaptein	Human Relations	Understanding unethical behavior by unraveling ethical culture	2011	167	11.93
3.	Yuhung Shin, Sun Young Sung, Jin Nam Choi and Min Soo Kim	Journal Ethics	Top Management Ethical Leadership and Firm Performance: Mediating Role of Ethical and Procedural Justice Climate	2015	156	15.60
4.	Roland E. Kidwell, Franze W. Kellermanns and Kimberly A. Eddleston	Journal	Harmony, Justice, Confusion, and Conflict in Family Firms: Implications for Ethical Climate and the “Fredo Effect”	2012	128	9.85
5.	Robert Steward, Sabrina D. Volpone, Derek R. Avery and Patrick McKay	Journal	You Support Diversity, But Are You Ethical? Examining the Interactive Effects of Diversity and Ethical Climate Perception on Turnover Intentions	2011	116	8.29
6.	Kavitha Haldorai, Woo Gon Kimal Howook (Sean) Chang, Jun (Justin) Li.	International Journal	Workplace spirituality as a mediator between ethical climate and workplace deviant behavior.	2020	94	18.80
7.	Itai Beerli, Rachel Dayan, Eran Vigoda-Gadot and Simcha B. Werner.	Journal	Advancing Ethics in Public Organisations: The Impact of an Ethics Program on Employees’ Perceptions and Behavior in a	2013	90	7.50

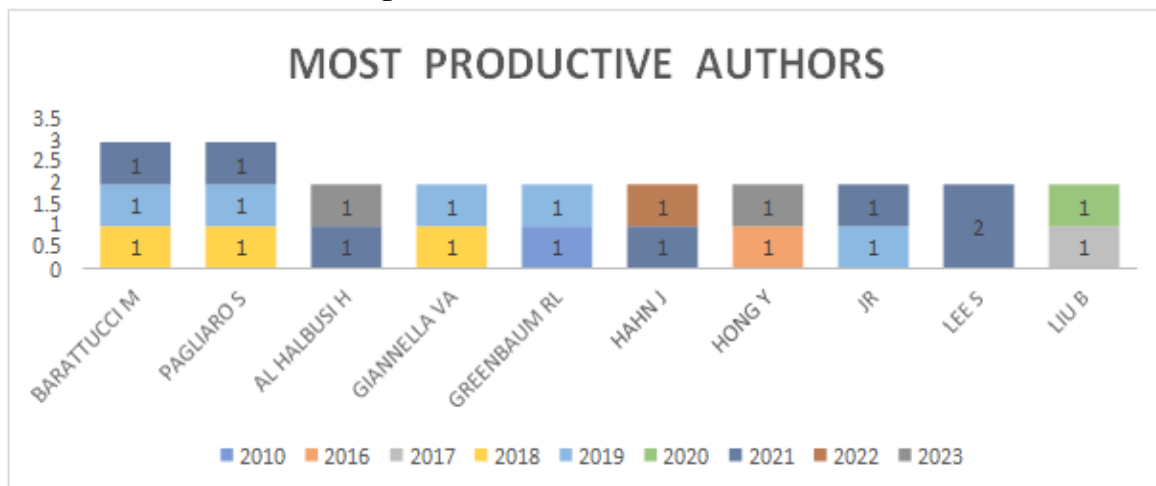
			Regional Council.			
8.	Adel Yazdanmehr, Jingguo Wang	Decision Support Systems	Employees' information security policy compliance: A norm activation perspective.	2016	89	9.89
9.	Lily Chernyak-Hai, Aharon Tziner	Journal Work Organizational Psychology	Relationships between counterproductive work behavior, perceived justice and climate, occupational status, and leader-member exchange	2014	70	6.36
10.	Stefano Pagliaro, Alessandro Lo Presti, Massimiliano Barattucci, Valeria A. Giannella, Manuela Barreto	Frontiers	On the Effects of Ethical Climate(S) on Employees' Behavior: A Social Identity Approach.	2018	62	8.86

Source: Authors' own analysis using R-based Bibliometric

AUTHORSHIP

The number of articles provided, broken down by author, is shown in the table. The top ten authors are included in this figure. The top authors are Barattucci M published 3 articles in year 2018, 2019 and 2021 while Pagliaro S also published 3 articles in the same year and the other author published 2 articles. It appears that there is no difference (in numerical terms) for the articles that have been written by the top author and the runner up author.

Figure.9: Author's Production Per Year

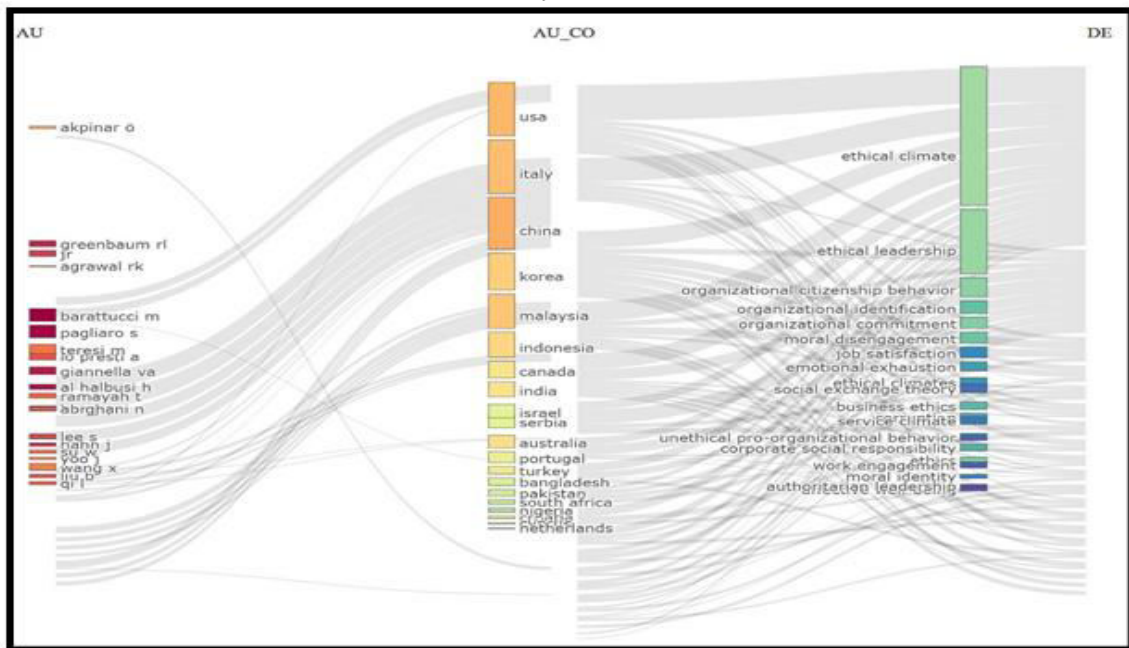


Source: Authors' own analysis using R-based Bibliometric

THREE FIELDS PLOTS- AUTHORS, COUNTRIES AND KEYWORDS

A Sankey diagram depicting the progression of authors, countries, and research topics/keywords is represented in figure. The data on the most prolific authors from each country and the primary study themes associated with each country are displayed in this tripartite map. The left side of the figure depicts the correlation between authors and their respective nations. The USA has the greatest affiliation rate, followed by the Italy and China as seen in figure. The two most active writers for the USA are Rebecca Greenbaum and Charles H Schwepker jr, according to the thickness of the line that connects the countries. The prolific writers in Italy are Massimiliano Barattucci, Manuel Teresi, Valeria Amata Giannella and Stefano Pagliaro. The figure's right side depicts the correlation between countries and the keywords. The data indicates that the topic of the Ethical climate has received significant attention in academic research, with a particular focus on USA, Italy, China and Korea. Research on affective computing has been conducted extensively in several nation, with most studies being carried out in the USA and Italy.

Figure.10: A Sanky diagram with three fields plots shows the relationships between authors, nations, and keywords

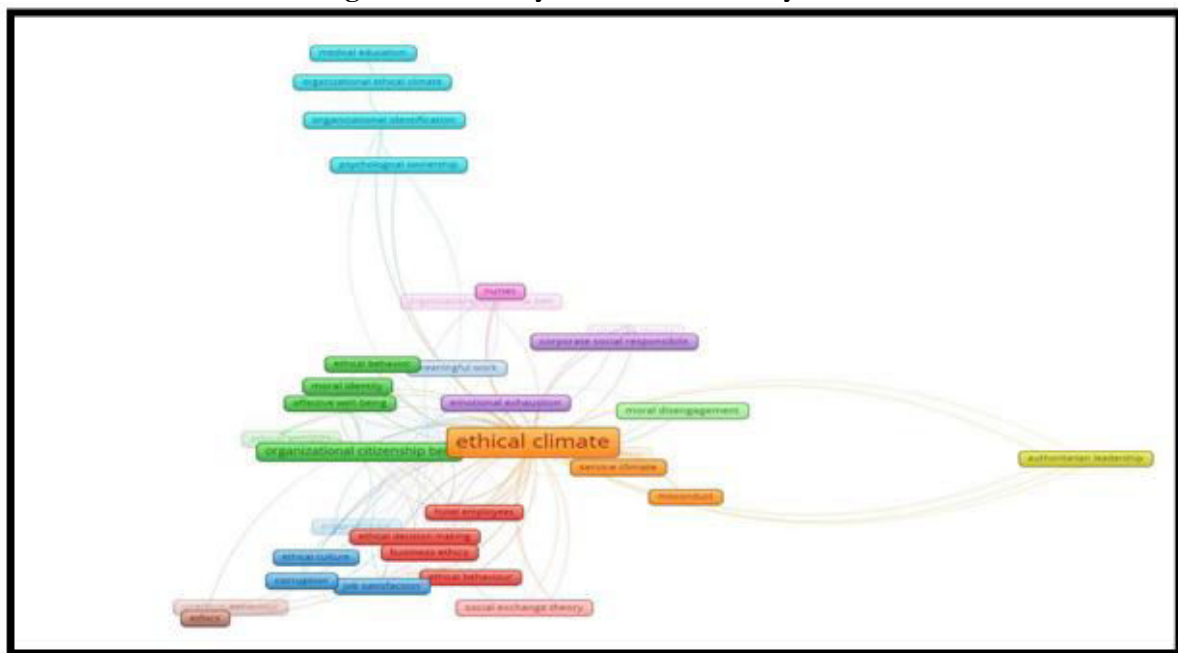


Source: Authors’ own analysis using R-based Bibliometric

KEYWORDS ANALYSIS

The most popular terms used by authors were found using Co-occurrence method. By default, the author keyword occurrence minimum value was set at 2. The study revealed distinct cluster emerging among the 375 keywords, 54 met the threshold. The idea of co-occurrences from the study of the ethical climate served as the foundation for this. Keywords like “ethical climate”, which also seems to be the strongest term found in the current research, made up the most noticeable cluster. Another buzzword that came after this included service climate and misconduct. Another strong cluster had emerged under other keywords which were represented in the green showing in the following figure. It includes organizational citizenship behavior, ethical behavior, moral identity and affective well-being. In totality, 12 clusters were made in this analysis.

Figure.11: Overlay Visualization of Keywords



Source: Authors’ own analysis using VOS Viewer Software

DISCUSSION

This bibliometric analysis shows the patterns that are currently emerging in articles about how ethical climate impacts employee behavior. The findings indicate that academics and writers are becoming more interested in

ethical climate, as evidenced by the growing number of articles on the topic that are published each year across several countries. The review's finding shows that there haven't been many studies done on the ethical climate, despite the area's sensible expansion. According to the results, only 115 papers were written between 2010 to till 2024. The most productive year was 2021 and 2023, with 17 articles published. China is the most influential country, having published 23 articles till 2024. While India placed at 6th position with 08 articles published. The most preferred domain area by the researchers in the form of document type is articles section which is 89% of the total. So, researches can be conducted in other form also i.e. review paper, conference paper and in book chapter. Journal of business ethics is the top most journal publishing articles related to ethical climate. The study also included the top 10 articles as per the Scopus database. Ethical climate, ethical leadership, organizational citizenship behavior and organizational commitment are the most frequently used keywords by the author.

This study shows that ethical climate became the timely topic in current scenario but this area of research is less explored by the researchers since India got 6th place in ethical climate research. The limitation of the present study is that it only considered the articles published in the time span of 2010 to till 2024 whereas research showed that Victor and Cullen gave theory of ethical climate in 1987. So further researches can be conducted on bibliometric analysis by considering paper from 1987.

IMPLICATION OF THE STUDY

The study emphasizes the most important discoveries on the issue of ethical climate and contribute to the body of knowledge on ethical climate impact on employee's behavior by examining the publication pattern of the published papers. Researchers will find value in this study since it provides a number of insights that will enable them to identify research gaps and fill them with more research. Researcher collaboration with esteemed institutions and authors who are producing excellent work in this field can be facilitated by the result of the most pertinent journals, which will assist researchers in identifying the most cited journals to publish their articles in. the domain's top-published articles will be helpful for researchers in making the base for further researches.

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INDIA'S DIRECTION TOWARDS SUSTAINABLE ENERGY ALTERNATIVES**¹Dr Sachin Sabharwal, ²Pushan Sethi and ³Raghav Lakhotia**¹Professor and ^{2,3}Student, Jagan Institute of Management Studies, Rohini, Delhi**ABSTRACT**

Fossil fuels are limited but our current dependability on them and their potency to vandalize and jeopardize India as a nation is very high. Climate change is being caused and India is one of the most affected nations. Human health issues and animal species extinction rate because of pollution of all kinds is very high. India is a developing nation and a major economy. In addition to this some countries are exploiting fuel prices making it unfair for certain countries. As well as how to achieve the goal of atma-nirbhar Bharat efficiently? One of the best alternatives is hydrogen fuel. If a country is a human body, fuel is like blood. Whereas, hydrogen is a man-made fuel with no harm to nature's balance and would help us as a nation to meet our green goals. In this paper major events have been highlighted and connected to disinter out the pattern that does torch us in the direction to adopt hydrogen as fast as possible and reconcile economical, geographical, technological, and political elements of India.

Keywords: sustainability, G20 goals, India, AtmaNirbhar Bharat, Optimization, green energy.



Image source - Columbia Global Centers

OBJECTIVE

- To understand the current situation and analyze potential factors, which would help us to find the best alternative as per our situation in India.
- To evaluate future potential and condition for sustainable growth and minimize risk as per India's capabilities.

LITERATURE REVIEW

Energy is a pervasive phenomenon and therefore a good factor to conclude out how an economy is performing. Electric vehicles are the latest modern transportation initiatives to tackle multiple problems in several dimensions that are caused by conventional vehicles. The major issue in new motor vehicles was regarding batteries but now because of the introduction of latest technology and use of fuel cells enables them to ride smoothly in the latest automobiles. This paper deeply compares and deduces about the difference between battery electric vehicle and a fuel cell vehicle and concludes that major difference is among the refueling style and driving range. Moreover, this paper helps us understand the segment which is ready to change their existing lifestyle and open to sustainable options of the global environment at large. It provides brief segmentation detail over California, Europe, and Asia. Lastly it talks about types of fuel cells and the ways to store its respective fuel in (Manoharan, et al [1]).

Types of storage in fuel cell vehicles

- Pressurized hydrogen tanks
- Cryogenic Liquid Hydrogen Storage
- hydrogen Uptake in Metal-Based Compounds

Types of fuel cells

- Solid Oxide Fuel Cell (SOFC)
- Direct Methanol Fuel Cell (DMFC)
- Phosphoric Acid Fuel Cell (PAFC)
- Polymer Electrolyte Membrane Fuel Cell (PEMFC)
- Alkaline Fuel Cells (AFC)
- Unitized Reversible Fuel Cell

Inevitable, deduce, measurement factor

This paper deeply discusses, describes the “why” whole world scientists are so much fascinated in this fuel type and “why” is it being labeled as the future fuel. Then majorly it pours emphasis on the potency of hydrogen, about how much richest it is to energy per unit mass (**Jain, et al [2]**). Even being a man-made fuel, it is cleanest of all natural fuels and that it is abundantly available on earth. This paper then discusses the structure of hydrogen and the easiness to store and use it. Innovative concepts like those of metal hydrides have also been deciphered in this research paper and provides example of solar powered hydrogen run water pumps.

This paper talks about the change we would witness by completely shifting to cars based on hydrogen fuel cells from fossil fuel based vehicles. This paper majorly lays emphasis on the US economy and the negative impacts fossil fuel is causing and jeopardizing their economy’s climate and about the chronic health problems. And how by shifting to a hydrogen based economy these troubles would disappear. It also lights the fact that shifting to new fuel will see many technological and infrastructure hurdles, but it would be worth it (Jacobson, et al [3]).

This paper portrays the production cycle of hydrogen in a loop. Like one of the illustrations for this concept is given on, production threw water. Where no gasses like carbon monoxide, carbon dioxide or other acidic gasses like sulfur and nitrogen oxides are also not the end result. This then further deciphers other production processes as well and deduces that even if carbon like substances are produced then it could be captured immediately through CCS (**carbon capture and storage**) facility (Koroneos ,et al [4]).

Problem

Fuel is a resource which comes in those categories of subjects which are not available with everyone. There are only a few countries who have complete control and ownership of the same. So this does lead to manipulation, exploitation and malpractices.

Major current problems associated with such are as follows to the global consumers.

1. Fossil fuels harm the environment, they contain a huge amount of carbon footprints. Which further causes distress and imbalance in nature and situations like climate change come into picture.
2. European countries are facing a crisis, because their economy solely runs on oil, after sanctioning Russia their economy did not have any other source, as Arabian countries shot up the prices. Hence, even after choosing the right road - the UK had to face a crisis which has almost dilapidated their economy.
3. OPEC prices skyrocket. These countries have humongous oil and fuel naturally available, like water. They supply oil to the overall world. As Russia was boycotted, these counties were the only other source.

The phenomena of fuel and energy:

Fuel in simple terms could be stated as a dense repository of energy. It does further get utilized for the purpose of heating, transportation and electricity generation. Nowadays life is not possible without energy- economies, businesses and industries could default and fall in crisis. Energy is derived from 2 sources: Renewable energy source and non renewable energy source.



Image Source - dictionary.com

Non renewable sources

These are the ones which are being devoured rapidly and we are not left out of much stock. For example, fossil fuels. They are obtained under high pressure and after millions of years. These are being charged at exorbitant prices with the correlation to the supply falling short.

Dependence on such sources did cause an energy crisis in Europe. Moreover, these sources do also cause a lot of pollution and contain humongous carbon footprints. Carbon footprint refers to the Emission of greenhouse gasses (carbon dioxide, methane, and few more) which does foster and invite doomy natural vandalistic endings such as climate change.



Image Source - watchwire

Renewable sources

These refer to those sources which are replenish-able and have negligible carbon footprint. For illustration the solar panel, wind mill. These are innocuous, therefore admonished by the government as well as subsidy is available on installation and utilization.

India is a good country, benisoned and blessed with regular sunlight, wind energy. But still the installation cost is very high. Moreover, maintenance expenses are also inordinate. In addition to this storing the energy procured from these sources is quite a big challenge. So it can be deduced that it is not economical, especially for developing countries.

What is the emerging “Hydrogen fuel”?

Image Source - istock

Hydrogen as a fuel, or rather i would say as a resource is not a new subject. It was utilized as an explosive in World War II. Its potential was used to vandalize the country (Japan) as the US wanted.

Hydrogen is in abundance, its features are like it is lighter than air and not available in its pure form. To procure hydrogen we need to separate it from the compounds that contain it.

Moreover, if hydrogen is the fuel then electricity, water and heat are the elements emitted. Hydrogen is converted into electricity and heat by the fuel cells. As waste, only and solely water is produced.

Hydrogen has also been used in rocket ships, it acts as an apt fuel for the very purpose. It reacts with oxygen which produces humongous steam and propels the rocket out from earth’s atmosphere.



Image Source - Clean winconsin

Is it the future?

The problem with non renewable energy is that when combustion happens then so much carbon dioxide is produced with other jeopardizing gasses like nitrogen oxide, sulfur dioxide. Hydrogen is a perfect choice to be used as a fuel. Only water is the waste released.

On the other hand, renewable energy sources set up are super expensive and further it is a big challenge to store the energy. With hydrogen as a fuel, fuel cells are utilized which could be installed in a size a giant plant or as a small machine also.

So hydrogen seems to be a good fuel as per analyzing its features and properties. It will not foster grave climate change and keep the atmospheric disturbance under control. No pollution would be caused, hence the end to smog, air pollution and other related diseases. Electric vehicles are smooth like butter and also do not emit any jarring noise as regular vehicles. Soon fossil fuel would become extinct, then the combination of hydrogen and fossil fuel would only be available.

Types of Hydrogen

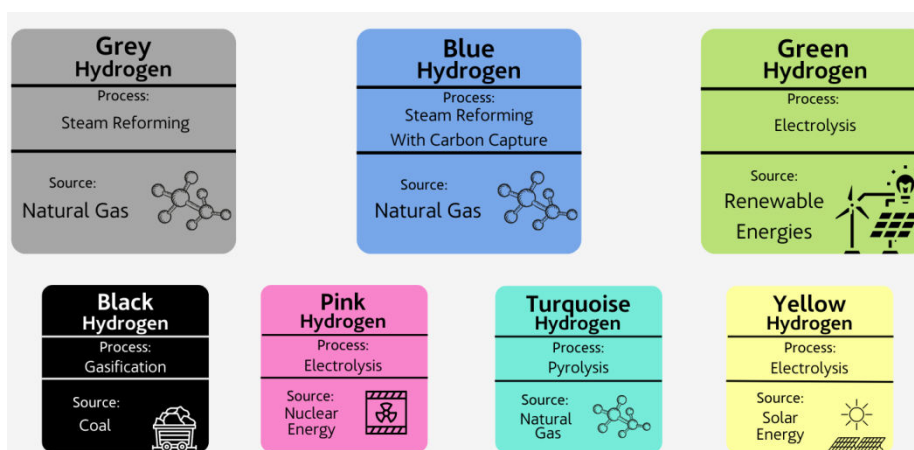


Image Source - acciona

➤ Green Hydrogen

➤ Smooth meaning of green hydrogen is when water is passed through an electrolysis process, where the electricity was fetched out from renewable resources like solar, wind etc. In this process carbon emission is zero.

➤ Blue Hydrogen

➤ When natural gas is fused with heated water in the form of steam, then hydrogen is produced and carbon dioxide is also released as a by-product. Here CCS (carbon capture and storage) is used to trap the carbon, and prevent its release in the atmosphere. Blue hydrogen is also known as “low carbon hydrogen”.

➤ Black and Brown Hydrogen

➤ Black or brown hydrogen process is completely opposite to green hydrogen. Here fossil fuels are passed through gasification and hydrogen, carbon monoxide and carbon dioxide are produced. This is the worst way to pull hydrogen out. As a direct consequence, this procedure is off the table.

➤ Grey Hydrogen

➤ If the blue hydrogen process is replicated, but without the use of CSS (carbon capture and storage) and carbon is released in the air, then this process is acknowledged as Grey hydrogen.

➤ Pink Hydrogen

➤ In this method, nuclear fission or fusion is used to generate energy for the electrolysis of hydrogen. Huge energy is produced and it must be cautiously handled to avoid any form of disaster or jeopardy.

Hydrogen is a colorless and odorless gas, then why does this colorless gas have so many vibrant types?

These names and classifications are man made, on the basis of from which group of source hydrogen has been extracted or procured.

Green hydrogen is the best alternative available to us. Pink hydrogen may look fascinating, but nuclear powers released in the form of energies are complex and arduous to handle. Even a single mistake or carelessness could replicate the “Bhopal Gas Tragedy” or even worse.

But the challenge is that only surplus electricity is used, which is seldom. Additionally these renewable sources are very expensive to set up and later maintenance cost. Another major hurdle is - like solar panels needs consistent exposure to sunlight to generate reasonable electricity, windmills need 40 - 50 kilometer per hour speed of the wind at least to initiate electricity generation and hydro-plants also need a hefty intensity of water stream to spin the turbine and induce the electricity.

Current Indian market

India with the world’s largest population is a humongous consumer of energy. Moreover, India is transforming to a manufacturing oriented industrial hub now, as the decades pass we are reducing the agriculture activities. Cherry on the cake, the government is fostering the latest technology to grapple up the time barrier and reduce the cost, where energy consumption would increase as fast as it is adapted to hydrogen based, electricity driven fuel.



Image Source – moneycontrol.com

Nitin Gadkari, our Minister of road transport and highways of India, does come in hydrogen car to spread awareness and inspire the citizens to imitate the same. It is India's first car which runs on hydrogen fuel only, Moreover, he does foster his idea for the generation and production of green hydrogen from sewage water and organic waste merely in the short run..

Electric railway Trains - India as a nation is exploring and adopting innovations, spreading its roots in all the way possible to achieve its “Green Goals”. India is largely dependent on railways, so the government did sprinkle hydrogen plans there as well. Slowly and gradually the plan is to replace the Diesel based engines with hydrogen fuel cells. And pre independence period to today, the railway sector is about to make a revolution. New trains and new infrastructure is being hammered for a new India.

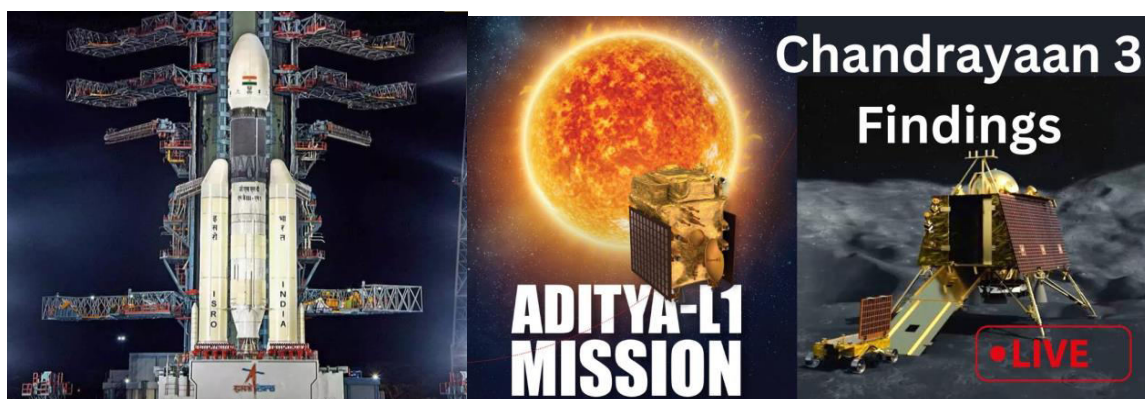


Image Source - DNA India

India is now actively exploring space with its own - independent and efficient space missions. ISRO (Indian Space Research Organisation) is making history by being so efficient that it is able to land on the unexplored and dark side of the moon at such a low cost, less than the budget of sci-fiction hollywood movies. Such space be it “Chandrayan-3” or “Aditya L-1” crafts do use cryogenic engines which use liquid hydrogen as fuel and liquid oxygen as an oxidizer. Other similar powerful chemical fuels. Here the problem is that we import a few resources - lavishly, but the hydrogen production set-up will relieve us off a little burden here as well. Moreover, the way we have conducted our missions have been mind boggling, so how efficiently and optimally, the way our engineers and scientists could devise for hydrogen industry plants is a mystery.

India’s Future potential:

1. India is a growing economy, according to a report by the International Monetary Fund (IMF), India is not only immune to global recession but also it is progressing and accelerating robustly as a nation. Which is a good sign and a symbol of opportunity. India is a strong nation because of being in the leadership of our “Prime Minister - Narendra Modi”. We did act diplomatically and made us booked as being a fuel buyer at a reasonable price from Russia during the “Russia - Ukraine” conflict.

Other nations acted aggressively and without provisions and plans sanctioned Russia heavily. Now this situation has led the whole European Union into an energy crisis and the same with the US. Moreover the US economy collapsed because of the failure of the Silicon Valley Bank. Leading to the breach of their debt ceiling limit.

This was brief to the current situation, now India is strategically devising its green goals and has a plan to supply green hydrogen to the world. India did spot its strength, now it is focusing to come in power and to become the energy hub. Because of the natural bensions that India does have the resource for all major renewable energy sources. Let it be solar, hydro or wind. With it being in the focus, India plans to commence these goals by 2025 with the goal to supply more than 11 million metric tons.

- India's precise and determined call to make India a zero carbon emission nation by 2070 has been a great news for the hydrogen fuel industry, by the formation of ISA (International Solar Alliance). Still for green hydrogen to be in the practice is a long way to go, as the industry set-up would be completely different. Huge capital would be invested to devise the optimal hydrogen infrastructure. Moreover, for such major changes we need to start putting a little effort towards this direction.

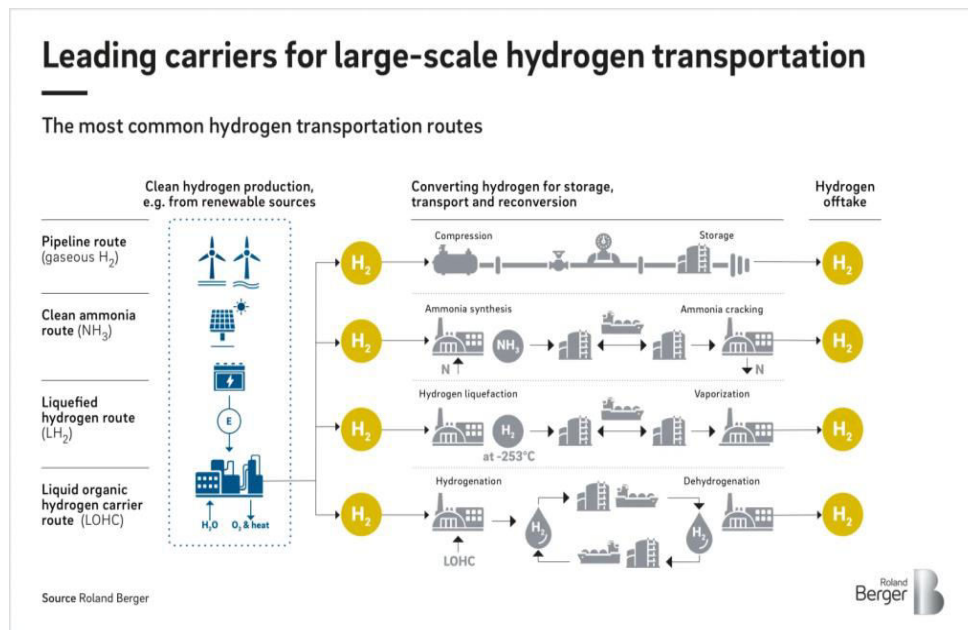


Image Source - rolandberger

- The Indian Government with companies like Reliance Industries, Indian oil and Adani enterprises did set goals to produce green hydrogen by the end of the year 2023. For both domestic consumption and foreign exports. Also India aims to construct a policy for corporates to at least consume 50 percent green energy.

CONCLUSION

Lastly, now after defining the problem and analyzing the present and future situation, now after deeply deciphering Hydrogen fuel characteristics and its procurement to production resources available with us we can deduce that the main resource hydrogen is present in abundance. We are not capable of setting up a 100% industry for green hydrogen, it is the best alternative available but still we do not have that much funds and infrastructure. This does not mean we wait for the perfect infrastructure to exist, to be built and then only use the best source. Strategic use of other fuels and blue hydrogen could be used to at least promote the electricity driven instruments like electric cars.

For hydrogen to move in the country, the best source possible could be the pipelines. If we envision it, for the long run. Fuel cells could be installed at various places. This sounds expensive but ironically is cheaper. Electricity is lost multifold times when it is transferred. Moving it through the current logistics plan would make it super expensive, hence demand would fall.

Hydrogen fuel is going to be a clean fuel, as in terms of waste only water is released. Hence it would share an amicable relationship with the environment and humans. Noise, air and land pollution is being increased because cars cause a lot of disease and distress. Hydrogen enabled equipments are tidy and silent hence providing tangible and intangible harmony..

Crisis situations faced by a very large number of countries but exploited by a pinch of countries, because of the power of fuel in a few hands, such grave issues could also be decimated and forever their roots decapitated, as hydrogen would be available with everyone and then all could be independent in terms of energy.

The 1991 economic crisis in India was majorly because of fuel imports during that period. Because of the gulf war, the fuel prices did shoot up and made it difficult for us to reconcile our balance of payment. Fuel imports

was not a sole cause but a major factor. And as Indians this is what we have been pushing ourselves forward to since independence. In addition to this, energy is a core factor for every economy. So it would be a win-win situation.

Hydrogen is the future, it is safe for the environment and would meet all the required human needs. Climate change is a big grave danger, and this source of energy would definitely boost the adaptability and grapple the threats to destruction of regions and extinction of species.

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BUSINESS GROWTH THROUGH DIGITAL TRANSFORMATION

¹Prof. Rahul Tripathi and ²Dr. Sachin Sabharwal¹Assistant Professor (College Dekho), Jagannath University, Delhi²Associate Professor, Jagan Institute of Management Studies, Rohini, Delhi**ABSTRACT**

In the contemporary landscape, digital transformation has emerged as a fundamental catalyst for driving business growth and sustainability across various industries. This abstract explores the strategic implications and benefits of embracing digital transformation initiatives within organizations. It delves into the transformative potential of digitization in enhancing operational efficiency, optimizing customer experiences, and fostering innovation.

Digital transformation encompasses a multifaceted approach that involves leveraging advanced technologies such as artificial intelligence, big data analytics, cloud computing, and the Internet of Things (IoT) to streamline processes, gain actionable insights, and adapt to evolving market dynamics. By embracing digital technologies, organizations can unlock new opportunities for growth, gain competitive advantage, and stay relevant in an increasingly digital-centric marketplace.

Key areas of focus in this abstract include:

- 1. Enhanced Operational Efficiency:** Digital transformation enables organizations to automate routine tasks, optimize workflows, and improve decision-making processes. By leveraging data-driven insights, businesses can identify inefficiencies, eliminate bottlenecks, and enhance productivity across the value chain.
- 2. Strategic Partnerships and Ecosystem Collaboration:** Collaboration with external partners, startups, and industry ecosystems plays a pivotal role in driving digital transformation initiatives. By forging strategic partnerships and leveraging external expertise, organizations can access new technologies, expand market reach, and co-create innovative solutions that address evolving customer needs.

Keywords: Operational Efficiency, Innovation, Ecosystem Collaboration, Risk Management.

1. INTRODUCTION**Definition of digital transformation**

Digital transformation is the integration of digital technologies into all aspects of a business. This fundamentally changes how the business operates and delivers value to customers. It involves using cutting-edge technologies like artificial intelligence, cloud computing, big data analytics, the Internet of Things (IoT), and automation. These help streamline processes, enhance customer experiences, and drive innovation. Digital transformation goes beyond just adopting new technologies. It requires a shift in mindset, culture, and operations within the organization. It means rethinking traditional business models, processes, and strategies to fully utilize digital tools and data-driven insights. This allows companies to adapt to rapidly changing market conditions, stay ahead of competitors, and meet the evolving needs and expectations of customers in the digital age.

Importance of digital transformation for business growth

In today's increasingly digital and competitive market, the value of digital transformation for business success cannot be emphasized. Businesses can now provide customers with smooth and customized experiences across a variety of touchpoints, such as social media, mobile applications, websites, and more, thanks to digital transformation. Businesses may boost customer happiness, loyalty, and retention by using data analytics and customer insights to better understand consumer preferences and behaviour, predict their requirements, and customize products and services. Businesses now have more chances to reach customers around the world and enter undiscovered sectors thanks to the digital transformation. By use of e-commerce platforms, digital marketing channels, and online marketplaces, businesses can expand their consumer base, draw in new clients, and diversify their sources of income.

Furthermore, digital transformation makes it possible to create cutting-edge goods and services that address the demands and preferences of developing markets, which promotes company expansion and competitive advantage. Large volumes of data are produced by digital transformation, which can be used to gain practical insights and guide strategic decision-making.

2. RESEARCH OBJECTIVES

Research objectives for a paper on Business Growth through Digital Transformation, Here are some potential research objectives for such a paper:

- To investigate the drivers behind Digital Transformation Initiatives.
- To examine the challenges faced by organizations in Digital Transformation.
- To evaluate strategies for Successful Digital Transformation.
- To analyze case studies of Companies That Have Leveraged Digital Transformation for Growth.

3. LITERATURE REVIEW

In order to achieve sustainable growth and a competitive advantage in the digital age, firms from a variety of industries are finding that digital transformation is an essential strategic endeavour. By synthesizing previous studies and academic viewpoints on the topic, this review of the literature seeks to shed light on important topics such the influence of digital transformation on organizational performance as well as its drivers, obstacles, and success factors.

3.1. Digital Transformation: Westerman (2014) Digital transformation is frequently sparked by a variety of internal and external forces. The main forces behind this are technological developments, such as cloud computing, AI, and data analytics, which allow businesses to improve consumer experiences, innovate products and services, and increase operational efficiency.

3.2 Volatile Market Conditions: LaValle (2017) has discovered that, in order for firms to remain relevant and competitive in the market, they must adapt to shifting consumer preferences, competitive challenges, and regulatory obligations.

3.3 Challenges in Digital Transformation: According to Lacity (2020) To succeed, organizations need to effectively navigate the numerous challenges posed by digital transformation initiatives. A number of major barriers, including infrastructure and legacy systems, make it difficult for digital innovation to be agile and flexible.

3.4 Organizational resistance to change: Bughin and Gupta (2018) has established Digital transformation initiatives are further complicated by organizational resistance to change, talent shortages, and cultural inertia, necessitating the use of effective change management techniques and strong leadership.

3.5. Increase Productivity: As per Kane (2019) Organizations can experiment with new digital solutions, iterate quickly, and react to changes in the market by implementing agile approaches.

3.6 Digital strategy formulation: Marr (2016) concentrated on Developing talent, prioritizing customer-centricity, and forming strategic alliances are all crucial tactics for spearheading effective digital revolutions.#

3.7 Digital impact in company growth: Brynjolfsson and McAfee (2014) higher levels of productivity, profitability, and innovation among digitally mature firms, as demonstrated by their study on the transformative impact of digital technology on organizational performance.

3.8 Positive correlation between digital maturity and revenue growth: Capgemini's (2020) study showed that companies with cutting-edge digital skills see higher rates of market valuation and business growth.

4. METHODOLOGY

4.1 Data Collection

Secondary data has been collected from magazine, books, newspaper & internet. The main focus of this research paper is to find out the relationship between business growth and digital transformation across different countries or regions.

5. Drivers of Digital Transformation

Technological Advancements: Digital transformation is mostly driven by the quick developments in fields like artificial intelligence (AI), machine learning (ML), cloud computing, Internet of Things (IoT), and big data analytics. Automation, data-driven decision-making, and creative business models are made possible by these technologies.

Changing Consumer Expectations: Today's consumers want smooth, customized, and convenient interactions with brands at every touchpoint. In order to improve consumer experiences, businesses need to adjust to these changing expectations by spearheading digital transformation projects.

Competitive Pressures: In today's fiercely competitive market, companies are always under pressure to innovate and set themselves apart. Organizations may maintain their competitive edge through digital transformation, which streamlines operations, lowers expenses, and produces better goods and services.

Globalization and Market Expansion: Global connectedness has been made easier by the digital economy, which has given enterprises access to new markets and opportunities. Organizations can expand into new markets, service a variety of clientele groups, and scale effectively with the help of digital transformation.

Data Explosion: The abundance of data from diverse sources brings opportunities as well as obstacles. Initiatives aimed at achieving digital transformation are concentrated on efficiently using data to obtain insights, enhance decision-making, and spur innovation.

Regulatory Changes: Particularly in sectors like banking, healthcare, and cybersecurity, regulatory regulations and compliance standards are always changing. Organizations can more effectively adjust to regulatory changes while upholding security and compliance standards thanks to digital transformation.

Employee Expectations and Empowerment: Contemporary workers anticipate adaptable work settings, electronic resources, and chances for professional growth. The goal of digital transformation projects is to provide staff members with the instruments and resources they need to work together efficiently, boost output, and stimulate creativity.

Risk Management and Resilience: By diversifying revenue streams, streamlining processes, and reducing risks related to market disruptions, cyber threats, and other uncertainties, digital transformation strengthens organizational resilience.

Emerging Business Models: New business models including outcome-based pricing, platform-based ecosystems, and subscription-based services are made possible by digital technologies. Businesses use digital transformation to take advantage of these fresh prospects and maintain their relevance in dynamic marketplaces.

Environmental and Sustainability Concerns: Growing consciousness of environmental concerns and sustainability encourages companies to implement digital solutions that minimize carbon emissions, maximize resource efficiency, and encourage environmentally sustainable behaviors.

6. Challenges in Digital Transformation

Legacy Systems and Infrastructure: The infrastructure and out-of-date legacy systems that many companies struggle with are not built to support contemporary digital activities. The process of integrating new technologies with legacy systems may be costly and difficult, requiring careful preparation and investment.

Resistance to Change: Digital transformation initiatives may be hampered by employee, stakeholder, or corporate culture resistance to change. In order to overcome opposition and promote an innovative and collaborative culture, it is necessary to implement efficient change management techniques, communicate clearly, and include stakeholders.

Skills Gap and Talent Shortage: Specialized knowledge in fields like cloud computing, artificial intelligence, cybersecurity, and data analytics is needed for digital transformation. Unfortunately, hiring and retaining people with these talents might be difficult due to a lack of talent. To close the skills gap, organizations must fund upskilling and training programs.

Data Privacy and Security Concerns: Organizations now have more reasons to be concerned about data privacy, cybersecurity, and regulatory compliance as they depend more and more on data-driven solutions. Maintaining confidence and reducing risks requires ensuring strong data protection procedures and compliance with laws like the CCPA and GDPR.

Interoperability and Integration: It can be challenging to integrate many digital platforms, apps, and systems, particularly when working in heterogeneous IT settings.

Careful planning, standardization, and the adoption of integrating technologies and protocols are necessary to achieve seamless interoperability.

Lack of Clear Strategy and Vision: Organizations may find it difficult to set priorities for initiatives, distribute resources efficiently, and gauge performance in the absence of a defined digital strategy and vision that is in line

with business objectives. Creating a thorough digital roadmap with well-defined objectives and benchmarks is crucial for directing transformation initiatives.

Budget and Resource Constraints: Initiatives for digital transformation frequently need for large resource and financial commitments. Resource shortages, conflicting priorities, and limited funding can impede development and delay implementation. Getting sufficient money and support for digital initiatives requires securing executive sponsorship and proving their return on investment.

Vendor Lock-in and Ecosystem Dependencies: Reliance on particular suppliers, networks, or environments can reduce adaptability and stifle creativity. To reduce the danger of vendor lock-in and guarantee future scalability and interoperability, organizations must thoroughly assess vendor relationships, contracts, and dependencies.

Cultural and Organizational Silos: Digital transformation initiatives may be hampered by siloed organizational structures and a lack of cross-functional cooperation. A culture of creativity and agility, teamwork, and the dismantling of organizational silos are all necessary for effective transformation.

Sustainability and Environmental Impact: Digital transformation presents issues with e-waste, carbon footprint, and sustainability in addition to advantages for the environment including decreased paper use and energy efficiency. Businesses must take into account how digital activities may affect the environment and, when feasible, implement sustainable practices.

7. Strategies for Successful Digital Transformation

Develop a Clear Vision and Strategy: Establish a distinct digital transformation vision and plan that are in line with corporate goals. Establish quantifiable objectives and metrics to monitor progress, rank projects according to importance, and identify critical areas for improvement.

Leadership and Culture Change: Establish a culture of creativity, cooperation, and ongoing learning while cultivating strong leadership support. It is important for leaders to support digital projects, share the vision, and provide staff members the freedom to accept change.

Customer-Centric Approach: Throughout the digital transformation process, give the requirements and preferences of your customers first priority. Make decisions based on consumer insights and feedback, create experiences that are focused on the needs of the customer, and stimulate innovation in products and services.

Agile and Iterative Approach: Adopt iterative development processes and agile approaches to speed up innovation and react swiftly to shifting market conditions. Divide larger tasks into smaller, more manageable parts, then refine them in response to input and lessons learned.

Data-Driven Decision Making: Make decisions based on data analytics and insights, streamline procedures, and achieve corporate objectives. Invest in analytics tools, capabilities, and data governance to fully utilize data for a competitive edge.

Technology Modernization: In order to support digital objectives, evaluate the current IT infrastructure, apps, and systems and make investments in updating the technological stack. For agility, scalability, and flexibility, embrace cloud computing, microservices architecture, and scalable platforms.

Talent Development and Upskilling: Make an investment in acquiring, keeping, and upskilling personnel with the essential digital competencies. Offer professional development opportunities, mentorship, and training programs to enable staff members to support digital transformation initiatives.

Partnerships and Ecosystem Collaboration: Work together with entrepreneurs, industry ecosystem participants, and technology partners to gain access to resources, knowledge, and creative solutions. Form strategic alliances to boost ecosystem growth, increase market penetration, and speed up innovation.

Change Management and Communication: Put in place strong change management procedures to handle opposition, reduce risks, and guarantee a seamless shift to digital working practices. Throughout the transformation process, involve stakeholders, communicate openly, and offer continuous support and direction.

Continuous Improvement and Adaptation: Encourage an environment that values experimentation, flexibility, and constant progress. In order to improve tactics and promote long-term, sustainable growth, foster innovation, recognize accomplishments, and draw lessons from mistakes.

8. Case study of Amazon: Revolutionizing e-commerce through digital innovation

One of the best examples of how digital innovation can transform e-commerce is Amazon. Since its founding as an online bookshop in 1994, Amazon has grown into the biggest online retailer in the world and expanded into a number of industries, such as artificial intelligence, cloud computing, and digital streaming. This case study illustrates Amazon's journey:

Background:

Amazon is among the best illustrations of how digital innovation can revolutionize e-commerce. Amazon began as an online bookstore in 1994 and has since developed into the world's largest online retailer, branching out into a variety of markets including digital streaming, cloud computing, and artificial intelligence. This case study demonstrates the path of Amazon:

Digital Innovation:

Customer-Centric Approach: Amazon put convenience and consumer pleasure first from the beginning. By utilizing digital technology, the company created a new benchmark for online shopping experiences with its user-friendly interface, tailored recommendations, and quick shipping alternatives.

Big Data and Analytics: Amazon's advanced data analytics capabilities are what propel its success. To improve product suggestions, pricing tactics, and inventory management, the corporation gathers and analyzes enormous volumes of data on client behavior, preferences, and purchasing history.

Supply Chain Optimization: The e-commerce supply chain was transformed by Amazon through the use of cutting-edge fulfillment and logistics technology. Fast and dependable order fulfillment is made possible by the company's effective distribution network, which includes robotics, delivery drones, and fulfillment centers. This is true even during periods of high demand.

Marketplace Model: By enabling independent sellers to post and sell goods on its marketplace, Amazon is able to increase its product range and spur growth. By utilizing digital tools and services such as Amazon Web Services (AWS) and Fulfillment by Amazon (FBA), sellers may effectively expand their enterprises and reach a worldwide client base.

Amazon Prime: Since its introduction in 2005, Amazon Prime has revolutionized the business. Amazon Prime has increased consumer loyalty and recurring income streams by providing limitless quick shipping, access to Prime Video, Prime Music, and other digital services.

Amazon Web Services (AWS): Since its introduction in 2006, AWS has grown to become a major player in the cloud computing space, offering organizations all over the world scalable, dependable, and reasonably priced infrastructure services. From startups to large corporations, a variety of digital applications are powered by AWS's cutting-edge cloud technologies.

Artificial Intelligence and Machine Learning: Amazon uses artificial intelligence (AI) and machine learning algorithms to improve a number of parts of the business, including as fraud detection, inventory forecasting, product suggestions, and voice-activated assistants like Alexa. These technologies enhance client experiences, promote organizational creativity, and increase operational effectiveness.

Continuous Innovation: Amazon continuously experiments and innovates, investigating new concepts, tools, and business strategies. The business makes significant investments in R&D, buys up creative startups, and pursues big-picture initiatives like drone delivery and cashierless retail (Amazon Go). By remaining at the forefront of digital innovation, Amazon keeps upsetting established markets and influencing how e-commerce will develop in the future.

8. CASE STUDY OF NETFLIX:**Disrupting the entertainment industry with data-driven insights**

One notable example of how data-driven insights have upended the entertainment sector is Netflix. This case study examines how Netflix has changed how people consume video by using data analytics: Context: When it was first established in 1997 as a DVD rental service by mail, Netflix saw right away how digital technology could change the entertainment industry. When the business introduced its streaming service in 2007, it drastically altered how consumers could obtain and consume films and television series.

Data-Driven Insights:

- 1. Content Recommendation Algorithms:** To tailor content recommendations for each subscriber, Netflix's recommendation engine examines a tonne of user data, including viewing history, ratings, and preferences. Netflix increases customer engagement and retention by using machine learning algorithms to give personalized suggestions.
- 2. Content Acquisition and Production:** Netflix makes use of data analytics to guide its creation and acquisition strategy for content. Netflix finds chances for original programming and fills in content gaps by examining audience preferences and consumption trends. With the use of data, Netflix is able to create popular television series and films that appeal to a wide range of viewers worldwide, such "Stranger Things," "The Crown," and "House of Cards."
- 3. Viewer Behavior Analysis:** Real-time user activity tracking is used by Netflix to learn how their audience uses the service. Netflix can continuously improve its content library and user experience by evaluating metrics such as viewing length, pause rates, and search queries. This allows Netflix to obtain insights into viewer preferences and content trends.

Personalization and User Experience:

- 1. Personalized Content Recommendations:** Based on their viewing preferences and interests, Netflix's recommendation engine facilitates personalized content discovery for its viewers by directing them toward relevant films and TV series. By improving customer happiness and retention, this tailored strategy eventually boosts subscription growth and income.
- 2. Dynamic User Interface:** To improve usability and engagement, Netflix regularly adjusts its user interface using data insights. Netflix enhances user experience, content discovery, and navigation by experimenting and refining interface designs, which keeps viewers interested and coming back for more.

Impact and Success:

- 1. Global Reach:** Netflix's rapid global expansion has been made possible by its data-driven strategy. With over 200 million subscribers across more than 190 countries, Netflix has established itself as a major participant in the global streaming market by creating content that appeals to a wide range of people.
- 2. Original Content Strategy:** The money Netflix spent on original content has yielded impressive results. Netflix has created highly regarded and financially successful original series and films by using data analytics to pinpoint consumer preferences and content prospects. This has helped the streaming service draw new customers and increase subscriber retention.

9. Key Considerations for Organizations for digital transformation

The process of digital transformation is intricate and varied, requiring careful preparation, a clear strategic direction, and organizational alignment. The following are important things to think about when a business starts a digital transformation initiative

Clear Vision and Strategy: Establish a well-defined vision and strategy for digital transformation that is in line with the aims and goals of the company. Set objectives, checkpoints, and success indicators to track development and guarantee coordination throughout the company

Leadership and Organizational Culture: Encourage a collaborative, flexible, and innovative culture and cultivate strong leadership support. Encourage staff members to accept change, take calculated chances, and participate in digital projects.

Customer-Centric Approach: Throughout the digital transformation process, give the requirements and preferences of your customers first priority. To improve customer satisfaction and provide individualized experiences, invest in understanding customer insights, feedback, and habits.

Data-Driven Decision Making: Make decisions based on data analytics and insights, streamline procedures, and achieve corporate objectives. Invest in analytics tools, capabilities, and data governance to fully utilize data for a competitive edge.

Technology Modernization: In order to support digital objectives, evaluate the current IT infrastructure, apps, and systems and make investments in updating the technological stack. For agility, scalability, and flexibility, embrace cloud computing, agile development approaches, and scalable platforms.

Talent Development and Upskilling: Make an investment in acquiring, keeping, and upskilling personnel with the essential digital competencies. To enable staff to spearhead digital transformation, offer training courses, professional development possibilities, and mentorship.

Partnerships and Ecosystem Collaboration: Work together with entrepreneurs, industry ecosystem participants, and technology partners to gain access to resources, knowledge, and creative solutions. Form strategic alliances to boost ecosystem growth, increase market penetration, and speed up innovation.

Change Management and Communication: Put in place strong change management procedures to handle opposition, reduce risks, and guarantee a seamless shift to digital working practices. Throughout the transformation process, involve stakeholders, communicate openly, and offer continuous support and direction.

Security and Compliance: During the digital transformation process, give cybersecurity and data protection top priority. Put in place strong risk management procedures, compliance frameworks, and security measures to safeguard confidential information and lessen cyberattacks.

Continuous Improvement and Adaptation: Encourage an environment that values experimentation, flexibility, and constant progress. In order to improve tactics and promote long-term, sustainable growth, foster innovation, recognize accomplishments, and draw lessons from mistakes.

11: LIMITATION

Even if "Business Growth Through Digital Transformation" is a broad and pertinent issue in today's business environment, it's critical to recognize certain potential study limitations:

Generalizability: The results of research on digital transformation projects can differ depending on the industry, size of the firm, and location. It is important to exercise caution when extrapolating case study or survey results to other contexts since variables like market maturity, industry dynamics, and corporate culture can have a big impact on the results.

Availability of Data: It can be difficult to obtain thorough and current statistics on digital transformation activities, particularly for privately held businesses or those who are reluctant to reveal sensitive information. Accurate data on key performance indicators, investment amounts, or success measures associated with digital transformation initiatives may be difficult to come by for researchers.

Longitudinal Analysis: The process of digital transformation is dynamic and continuous, and it takes time to complete. It takes a lot of resources and potential obstacles to conduct longitudinal studies to monitor the long-term effects of digital initiatives on business growth and performance, such as attrition rates and shifting external factors and data availability.

Measurement Challenges: Given the complexity of business growth, defining and gauging the effectiveness of digital transformation programs can be difficult. Certain components of success can be measured with standard metrics like market share, cost savings, and revenue growth, but other intangible results like increased staff productivity, customer happiness, or organizational agility may be more difficult to measure.

Bias and Interpretation: Potential biases in data collection, analysis, and interpretation should be considered by researchers. The impartiality and validity of study findings can be impacted by confirmation bias, in which researchers preferentially focus on data that supports their hypotheses, and publication bias, in which good results are more likely to be reported.

Ethical Considerations: In digital transformation research, ethical considerations pertaining to permission, security, and privacy of data are crucial. When gathering, evaluating, and disseminating data, researchers must follow ethical standards and secure the required authorizations, particularly when working with sensitive data or human beings.

External Factors: Organizations may not be able to manage all external elements that impact business growth through digital transformation, including competitive dynamics, technology upheavals, economic conditions, and changes in regulations. Researchers must consider these outside variables and how they might affect the conclusions and findings of their work.

12. SUGGESTION & RECOMMENDATION

When discussing "Business Growth Through Digital Transformation," it's critical to offer suggestions and recommendations that businesses may put into practice if they want to use digital technology to spur growth. The following are some crucial ideas and advice:

Develop a Clear Digital Strategy: Create a thorough digital strategy that complements your company's aims and objectives first. Determine which business divisions, including marketing, sales, operations, and customer service, stand to gain from a digital transformation. Establish precise objectives, deadlines, and success measures to gauge how digital activities affect company expansion.

Prioritize Customer Experience: Prioritize the needs of your customers when implementing digital transformation. Invest in data analytics, market research, and consumer feedback to better understand the wants, needs, and pain points of your customers. Leverage digital technology to enhance customer pleasure and loyalty by personalizing interactions, optimizing workflows, and providing seamless omnichannel experiences.

Embrace Agile and Iterative Approaches: Accelerate digital transformation activities by implementing iterative development processes and agile approaches. Divide larger tasks into smaller, more manageable parts, then refine them in response to input and lessons learned. This strategy enables improved alignment with company needs, a quicker time to market, and ongoing development over time.

Invest in Talent and Skills Development: Create a workforce that is knowledgeable and flexible enough to propel digital innovation and expansion. Invest in initiatives for upskilling, talent acquisition strategies, and training programs to build competence in fields including cybersecurity, digital marketing, artificial intelligence, and data analytics. Encourage a culture of ongoing experimentation and learning to enable staff members to adopt digital technologies and spearhead organizational transformation.

Leverage Data Analytics and Insights: Use data analytics to your advantage to obtain practical understanding of consumer behavior, industry trends, and company success. Invest in strong analytics platforms, tools, and capabilities to efficiently gather, process, and present data. Utilize data-driven insights to find new opportunities for growth and innovation, optimize operations, and inform strategic decision-making.

Forge Strategic Partnerships and Ecosystem Collaboration: Work together with entrepreneurs, industry ecosystem participants, and technology partners to gain access to resources, knowledge, and creative solutions. Form strategic alliances to share best practices, capitalize on complementary skills, and jointly create value. Organizations may create mutual growth and success and expedite digital transformation initiatives by partnering with external stakeholders.

Focus on Scalability and Flexibility: Provide future-proof, scalable, and adaptable digital capabilities and infrastructure. Accept cloud computing, modular architectures, and flexible technologies that can adjust to changing market situations and corporate requirements. Organizations may swiftly scale operations, adapt to shifting client needs, and seize new growth possibilities because to this flexibility.

Measure and Iterate: Create measurements and key performance indicators (KPIs) to monitor how the digital transformation is affecting company expansion. Regularly check on progress, evaluate performance information, and tweak tactics in light of new information and results. Optimize digital projects continuously to reduce risks, increase return on investment, and promote long-term, sustainable growth.

Organizations can successfully leverage the revolutionary power of digital technology to generate corporate growth, acquire a competitive advantage, and survive in the digital age by putting these tips and recommendations into practice.

13. CONCLUSION

The study "Business Growth Through Digital Transformation" concludes by emphasizing how vital it is to embrace digital technology in order to spur competitiveness, growth, and innovation in the quickly changing business environment of today. Several important insights have been revealed by a thorough examination of the motivations behind, tactics used, constraints faced, and suggestions made in relation to digital transformation projects. The study "Business Growth Through Digital Transformation" came to the conclusion that digital technologies have the ability to significantly impact organizational growth, competitiveness, and innovation. Organizations can take advantage of new opportunities, increase operational effectiveness, and provide better customer experiences by embracing digital transformation efforts. However, a culture of creativity, leadership dedication, and strategic vision are necessary for a successful digital transition. Through the application of suggested tactics and the resolution of significant obstacles, entities can set themselves up for long-term expansion and prosperity in the digital age.

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SUSTAINABILITY, DIGITALISATION: A NEW TUNE IN HUMAN RESOURCE MANAGEMENT

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Any kind of disruption adds a new dimension to any field. In recent years the world has changed immensely. Globalization has made the world a global village. Development has been rapid with the technological advancement. Digitalization has impacted HRM functions profoundly. There are two big problems that businesses face currently which are sustainability and digital transformation in society as well as in the organisation. For the organization human resources are a key function because it addresses the objectives of the employees as well as for the organisation. In the present era achieving sustainable strategy in business is the most important aspect in the issue of sustainable human resource management.

In the wake of production and development organisations forgot about the damage caused to the environment, climate and nature. It overlooked the perils of reckless development and its aftereffects on the society. Today after the pandemic world has realised the impact of ecological disturbances and now it has become imperative to protect Mother Earth in every possible way.

Sustainability means taking care of profits along with the concern of all stakeholders. At this onset of the changing corporate scenario, the objective of HRM has become manifold, whereby it focuses at multidimensional levels. Ehnert (2014) observed that HR is going through a transition and the new HRM model focuses on its impact on the environment, climate, workforce demographics and societal issues rather than on financial issues. So, sustainable HRM evolved as people management practices which develop social, and environmental issues along with human capital.

Along with that, rapid digitalization has brought humankind to a crossroads of artificial intelligence and Blockchain which is a threat as well as an opportunity for Sustainable human resource Management for the organisation

Traditionally corporate social responsibility and Human resource functions have been studied separately, however, the two functions started mingling due to the overlap of outcomes. CSR is now related to the good employee culture and wellbeing of the employees and HRM is being connected with the good and ethical culture of the organisation, wherein the organisation is concerned for all the stakeholders. Jamali et al. (2015) suggested that both are connected as they are concerned with the positive outcomes for the internal and external stakeholders. Over the last decade, there have been many researches (Ehnert, 2009; Hartog et al. 2008; Pfeffer, 2010) which focused on how HRM systems can become sustainable HRM systems and how sustainable HRM (Ehnert et al. 2014; Taylor et al. 2012) system can help organisations attain their corporate sustainability goals. Renwick et al. (2016) and Rothenberg et al. (2017) analysed that the human resource system impacts not only employees but the human, social and environmental context of the organisation. Cohen et al. (2012), and Opoku et al. (2018) observed that employees of an organisation play a crucial role in a corporation's sustainability objective.

Initially, the HRM model, which was the Hard model was focused mainly on economic results only, later on, a soft approach was developed which tilted towards softer human values such as commitment, flexibility and quality (Kaufman, 2015). HRM started engaging employees through high-involvement relationship management through the work environment, culture, trust and reward policies. It was a step ahead as it involved not only the shareholder's concerns and customers but also employees, but it was still not addressing other wider concerns of multiple stakeholders – such as society, environment and suppliers. Beer et al. (2015) said that recently human resource management has included multi-stakeholders in its domain. Along with soft and hard HRM context-based literature talks about a broader Human resource, stating that employees will have many partners in an organisation such as supervisors, subordinates, peers in organisational boundaries; clients and customers and family and society outside the organization.

Sustainable HRM Classification:

Sustainable HRM is classified into four types. The first one is Socially responsible HRM, the second is Green HRM, the third is Triple Bottom line HRM and the fourth is Common Good HRM. There are four dimensions applied to these types of HRM.

Dimension I - The first dimension puts light on the Organisational perspective. It distinguishes between an inside-out and outside-in perspective. The Inside-out perspective focuses on the business itself and the outside

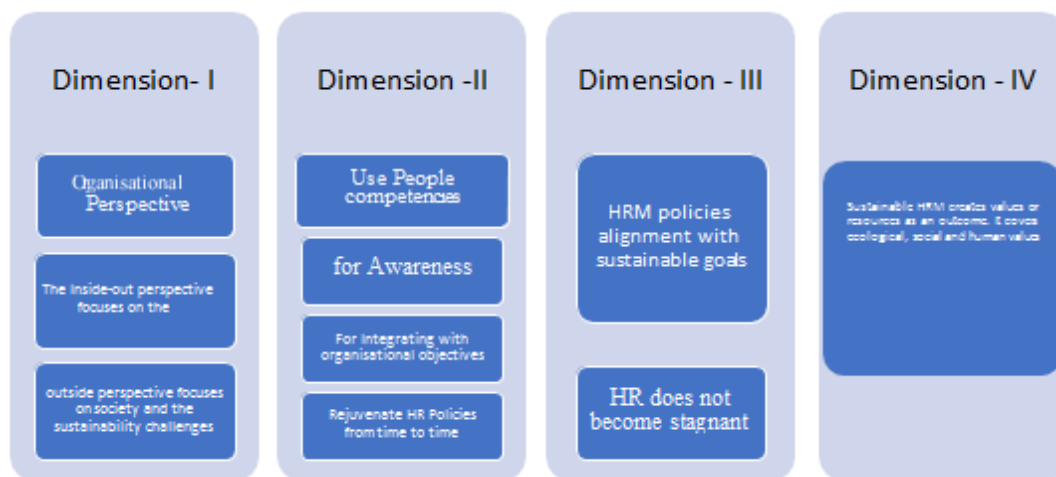
perspective focuses on society and the sustainability challenges (Dyllick & Muff, 2016). From an inside perspective, the organisation focuses on maximising shareholders' value while minimising business risk. It works with organisational identity and enhanced performance. In the outside-in approach, organisations focus on sustainability challenges and serve the common good. It tries to find answers to the question of improved climate, environment and society.

Dimension II – In the second dimension people competencies consisting of knowledge, skills and attitudes became a tool for Sustainable HRM. These competencies increased awareness about the responsibility of HR management towards everyone. There is accountability for every HR decision, for integrating HR policies with short- and long-term goals and for regenerating the organisation's and HR policies from time to time for stakeholders.

Dimension -III – The third dimension talks about how HRM policies reconstruct organisational policies and practices in tandem with sustainable HRM and how HR does not become stagnant in its journey.

Dimension IV- The fourth dimension analyses Sustainable HRM creating values or resources as an outcome. It covers ecological, social and human values.

Sustainable HRM Dimension



These dimensions create four types of classification for Sustainable HRM

- a) Socially Responsible HRM
- b) Green HRM
- c) Triple Bottom Line HRM
- d) Common Good HRM

1. Socially Responsible HRM – Socially responsible HRM has a soft, humanistic approach towards employees. It works to reduce business risks, and negative impacts and optimize human capital. Dupont et al. (2013) opined that SR-HRM encompasses policies and practices which improve employees' work and life quality. However, Paauwe & Farndale (2017) found that SR-HRM is not restricted to creating organisational value but societal value too. They said that it created value for the individual, as employees are satisfied they perform to their maximum thus it increased organisation performance and in turn, organisational value contributed to society's development. So, it works at individual, organisational and societal levels. Diaz-Carrion et al. (2018) observed that SRHRM focuses on staffing, training, performance appraisal and career management, compensation, work-family balance and diversity promotion, and occupational health and safety. Shen and Benson (2016) said that SR-HRM is a tool to achieve organisations' sustainability and CSR strategy. SR HRM is also mentioned in the CSR reports.

2. Green HRM – Green HRM's focus is towards making employees aware of the environment. It tries to integrate HRM with the environment wherein every HR practice makes employees aware of the environment and contributes to the environment. Renwick, Redman, & Maguire (2013) analysed that Green HRM is mainly concerned with improvement in employees' ecological behaviour and the organisation's contributions to environmentally friendly policies. Renwick et al.(2016) said that green HRM practices such as green hiring which means hiring employees having green attitudes and involving green tasks, green training which

gives training on environmental issues and green compensation which links bonuses with environmental objectives have a measure impact on sustainable success. However, there is still a debate about whether green HRM could be linked to HR practices or whether it could be used to address other stakeholders' concerns.

3. **Triple Bottom Line HRM** – HRM involvement is necessary for the Triple bottom line model. Colbert (2004) rightly observed that through HRM processes company can achieve triple bottom-line objectives in economic, social and environmental areas. There has always been debate on business objectives. Some relate it to societal benefits and others relate it to economic gains. TBL is one concept which brings together these concepts and links profit maximisation with social and environmental concerns. Sustainability means different things to different companies. HR's role becomes vital as it tries to generate dialogue and consensus on the sustainability intent building alignment capabilities to realise that intent. HR works through Change management, strategic human resource planning, talent management staffing and training and development. Elkington (2004) observed that three components must be included in the performance evaluation to see the social, environmental and financial value addition to the organisation. Emerson (2003) referred to them as the 3 Ps of people, planet and profit.
4. **Common Good HRM** – Hollensbe et al. (2014) think that business models need a new shift with regard to organisation objectives. It needs to move from the organization's objectives to common good objectives. Common good HRM values emerge from this thought where HR contributes to the good of common. Dyllick & Muff (2016) opined that all three previous types had an external pressure to align HR policies with social and environmental issues but Common Good HRM takes it as a business responsibility to face the challenges collectively.

Common Good HRM has changed the present definition of the purpose, concerns, and output of HR. Instead, its main purpose is to support business leaders and employees in attaining ecological and social progress objectives for the world. This contribution is a fundamental shift from Sustainable HRM types 1-3, which are guided by a neutral approach wherein they do not harm the society and environment but you are not concerned with trying to contribute to the betterment of the society, or you aim to limit external negativities and, or at your best effort you try to have a win-win situation. In this approach, HRM uses employees' competencies for greater challenges. Every policy and structure is embedded with values for the common good (Hoffman & Shipper, 2018). Common Good HRM emphasizes the global and local context of organizations and recognizes the reciprocal, individual, and collective elements of business activity. Common good HRM ensures equal opportunities, builds trusting relations, provides all stakeholders with opportunities for participation and a democratic workplace and upholds psychological contracts in protecting human needs for employment, security, safety, and meaningful work.

Sustainable human Resource Management in the era of digitalization

SHRM stands for sustainable human resource management, which blends the notion of sustainability with a soft approach to human resources. Soft HRM focuses on human aspects of HRM which include communication, motivation, employee engagement, learning and leadership (Martin and Hterick, 2006). This method advocates for building an HRM strategy on cultivating a culture of trust and collaboration, as well as encouraging employee engagement, which includes employee loyalty. The soft approach to HRM strives to generate appropriate financial outcomes while also emphasizing the need to foster a positive "employer-employee relationship." According to the research, a soft approach helps maintain an employee for a longer amount of time in an organization and encourages them to share information, work more productively, act with devotion and drive, and offer innovative ideas to help the company accomplish its goals (Piwowar-Sulej, 2021; Ogbeibu, et al., 2020). Society for Human Resource Management (SHRM) in April 2011 reported in 'Advancing Sustainability: HR's Role' that "The use of sustainability programs in organizations is growing rapidly. Organizations are becoming increasingly aware of the benefits of sustainability both to society and to their bottom lines" (Mark Schmitt). The responsibility for addressing social and environmental concerns is steadily drifting from the corporate periphery to a fundamental business role as the concept of sustainable development enters the mainstream. Sustainable development professionals (and others with similar roles or duties) are now in charge of more than merely humanitarian projects, community involvement programs, and environmental impact assessments. Instead, these managers are expected to act as change agents in leading organizations, developing the structures, procedures, methods of working, and personal values that will support the organization's long-term growth goals, and encourage others in the firm to do the same (WBCSD 2022).

There is an increasing public awareness about the role of business organizations in environmental, social, and economic problems, which has forced businesses to demonstrate their commitment towards corporate

sustainability. In this context, the companies are adopting a stakeholder approach and increasing their efforts to achieve sustainability in economic, social, and ecological terms. The focus has shifted from the economic profits of the shareholders to the gains of all the stakeholders of a business. Traditionally corporate governance had been focused on shareholders and managing the agent-principal conflicts and agency costs. However, contemporarily the focus is now to ensure that investors and all other key stakeholders get a fair return on the contribution that they have made to the financial, human, and social capital of a company. Scholars have now shifted their attention “to ensure that executives respect the rights and interests of company stakeholders and that those stakeholders are held accountable for acting morally and responsibly for the generation, protection and distribution of wealth invested in the firm” (Aguilera, et al., 2008, p. 475). The primary reason for this shift lies in the various cases of failure of corporate governance which has highlighted that senior executives and board of directors have failed to act responsibly and ethically. They have failed to fulfil their duties of protecting the interests of stakeholders (Agrawal and Cooper, 2017; Davis, 2009). Trends in executive pay and wealth generation by senior executives have resulted in debates over the issues of distribution (Skott and Guy, 2013). Thus, how the board of directors runs their companies and internal systems for protecting and rewarding the stakeholders, clearly impacts how the various types of capital-human, social and financial capital of a company are managed.

The recent thrust of corporate governance research has been in two areas- human capital and stakeholder theory. However, the mainstream SHRM literature has not paid attention to these governance-related topics. SHRM is a recent addition to the broader sustainability agenda. There is an increasing interest of scholars in SHRM, who have tried to connect the idea of corporate sustainability with HRM practices. Various scholars and practitioners have also explored the role of HRM in integrating sustainability practices and strategies in various organizations (Ehnert, Harry and Zink, 2014; Cohen, Taylor and Muller-Camen, 2012; Ehnert, 2009). These scholars have observed that there are two main roles of SHRM, firstly to contribute to the development of sustainable business organizations in economic, social, and ecological terms, and secondly to make the HRM systems themselves more sustainable. According to Harris & Tregidga (2012) alignment of business strategy with HRM practices consistently was a very important aspect to ensure the successful performance of the firm. They also stated that HR practitioners have failed to identify environmental sustainability as an important strategic lever and failed to give adequate attention to the same.

Corporate governance and SHRM have one thing in common stakeholder theory, which applies to both these concepts. Stakeholder theory helps in conceptualizing the organizational performance of HRM beyond the financial gains (Ehnert, Harry and Brewster, 2014; Guerci, Shani and Solari, 2014). Developing relationships with multiple stakeholders is also the key objective behind corporate governance in the contemporary business environment. The choices of an organization are identified based on the interests of the different stakeholders (Reynolds and Yuthas, 2008). Corporate governance is concerned with the issues relating to ownership and control within a company (Berle and Means, 1932). It establishes the terms and conditions of legal allocation of property rights among various stakeholders of an organisation and their incentives and rewards. It has been noted by various scholars that organizational performance is improved with the cooperation of different stakeholder groups and their commitment and experience in meeting the organizational objectives. Thus corporate governance has an important role to play in the ability of organizations to perform effectively in the long run (Konzelmann, 2003). As per Martin and McGoldrick (2009), the relationship between HRM and corporate governance has been little researched. However, some theorists have discussed HRM from a governance perspective (Gospel and Pendelton, 2005; Sisson, 2007). Some authors such as Boxall and Wilkinson (2007) have attempted to explain the linkage between corporate governance and HRM. Scholars have said that the objective of HRM is to enhance the performance of an organization and in turn, HRM is affected by the adoption of corporate governance practices at the firm level. Thus, the stakeholder demands that affect the implementation of corporate governance practices can also indirectly impact HRM. As corporate governance practices are moving towards the inclusion of sustainability agenda into their domain, thus HRM is also required to shift towards being more sustainable, in the form of SHRM. Both corporate governance and SHRM are directed towards stakeholder interests.

Digitalization and sustainable Human Resource Management

Industry 4.0 is responsible for bringing a paradigm shift into a whole new world. All the industries are witnessing the adversities due to this ongoing revolution, and bringing about exceptional change for consumers, employees and businesses. A report by McKinsey stated that the world is moving ahead and becoming closely connected and networked with the ongoing automation and introduction of smart technologies. (The Internet of Things and the Future of Manufacturing (McKinsey) At present, the world is interlinked with the help of advanced technologies. The paper by Malik (2019) stated that automation brought by Industry 4.0 is causing

phenomenal deviations in the business world. These changes will disrupt and change the functioning of businesses across the globe. Businesses need to be prepared for these changes and regularly upskill the workforce to adapt efficiently. In addition, the eighth Sustainable Development Goal (SDG) – “decent work and economic growth” defines its purpose to instil and accelerate economic growth across the globe by increasing production with the help of advanced technologies. SDG 8 stated its goal of enhancing productivity and providing decent work and employment to all with the help of technological innovations. Thus, alignment of Industry 4.0 and HRM is essential.

Organizations and employees should embrace technological advancements and develop strategies to adopt them, instead of considering them as a replacement for human capabilities. Technological advancements may have a massive impact on an organization’s human resources department. It enables the business to strengthen its internal processes, key competencies, target markets, and overall organizational structure (Singh and Vig, 2020). As emerging technologies like blockchain, artificial intelligence, etc are extremely automated; the fourth industrial revolution is a necessary innovation for economies that is bringing disruption along. It is an indispensable evil from the perspective of employees. HR managers need to focus on curbing these challenges to manage the disruptions in recruitment, performance appraisal, training, and other functions. These technologies are advantageous in terms of cost, flexibility, y, and sustainability. Bilan et al. (2020) stated that the fourth industrial revolution and technology transformation would lead us to job creation.

It also has challenges; organizations are recruiting new employees with upgraded skills from the market and replacing the existing employees. Instead of helping employees to be suitable to shift their competencies and upskill to organizations with recent processes and technologies and ensure the preservation of jobs amidst the industrial revolution, employees are rapidly losing jobs (Scavarda et al. 2020). This stands against the goal of sustainable development of economies. Keeping in view, the necessity for sustainable development along with technological developments and the requisite to help employees to upskill themselves (Rana and Sharma, 2021), there is an urge to develop an understanding of changing business scenarios. Organizations do not exist without employees. New technologies are not only bringing major changes in the field of technology implementation but Industry 4.0 is also affecting generations of employees currently working in these organizations. Artificial intelligence (AI) and fast-emerging digital technologies are presently putting nearly every area of society, economy, and environment to the test. Machine and AI-equipped with deep learning capabilities are already tackling cognitive difficulties associated with human intelligence (Goralski and Tan, 2020). Chowdhury et al (2023) state that though AI is increasingly being adopted within human resource management organisations need to look beyond technical resources and put their emphasis on developing non-technical ones such as human skills and competencies, leadership, team coordination, organisational culture and innovation mindset, governance strategy, and AI-employee integration strategies, to benefit from AI adoption.

Yi et propound (2020) Blockchain technologies play a very important role in reducing costs and delays, increasing hiring automation and increasing confidence. the most important advantage of Globalization is worldwide awareness and cross-border technology dissemination in two respects to enable nations to readily access foreign expertise and the second is enhancing international competition from the increased market companies as well as introduction of foreign innovation. Nowadays HRM faces difficulties in the world internet era spends a lot of time connecting, screening and verifying the resumes of applicants, conducting credentials verifications, and checking backgrounds to reduce poor recruitment. For example, recruiters can easily connect the profile of candidates from different channels such as direct application and this will also help recruitment agencies, and social media, and hiring verifications is a bottleneck. Now through blockchains individual behaviour related to sustainability is being identified. The blockchain framework plays a very important role in corporate training material. Now organizations are facing problems in fulfilling the needs of the workforce by the quality needed. In the end, we can say this will help all the parties to create a consensus between the needs of the industry with the labour market as a result, in the long run, the need for the workforce with the qualifications required by the organizations will always fit the current salvations. Blockchain helps to process the information and data needed by each party so that the connection between parties will be made efficiently and effectively.

In the evolving landscape of Human Resources (HR), the intersection of Blockchain and Artificial Intelligence (AI) stands as a beacon of transformative potential. Today where we are talking about suitability a lot of AIs and Blockchain play an important role in digitalization on the HR practices, industry is moving towards making the entire process digitalize and automatic which will be only possible when AI and blockchain will be into the picture. Many companies have started using AI and blockchain in their different processes, for example Amazon, IBM, Paradox. Companies like Accenture uses AI to train their employees. Facebook, Microsoft, JP

Morgan, etc. Fortune 500 companies use Blockchain as to manage their data which provides a better security to them. With Blockchain hailed as a disruptive force (Recent Advances in Blockchain Technology: Real-World Applications, 2023, Panda et al.) and AI emerging as a key driver of digitalized HR ecosystems (Employee experience –the missing link for engaging employees: Insights from an MNE's AI-based HR ecosystem, 2022, Malik et al.), the amalgamation of these technologies promises to revolutionize HR practices. Blockchain's decentralized ledger offers unprecedented transparency and security, addressing issues of credential verification and job history authentication in recruitment processes (Recent Advances in Blockchain Technology: Real-World Applications, 2023, Panda et al.). Simultaneously, AI-powered HR analytics (Trends in the thematic landscape of HR analytics research: a structural topic modeling approach, 2023, Thakral et al.) not only provide insights into organizational outcomes and employee characteristics but also pave the way for enhanced decision-making in talent acquisition and management. The synergistic potential of Blockchain and AI is further underscored by their ability to streamline payroll systems, automate contractual agreements, and incentivize employee performance through cryptocurrency tokens (Recent Advances in Blockchain Technology: Real-World Applications, 2023, Panda et al.). As organizations navigate the complexities of digital transformation, the convergence of Blockchain and AI emerges as a catalyst for redefining HR paradigms, driving efficiency, transparency, and trust across HR functions (Employee experience –the missing link for engaging employees: Insights from an MNE's AI-based HR ecosystem, 2022, Malik et al.).

Digitalisation for Sustaining Green Human Resource Management

As V. Garg, S. Srivastav and A. Gupta (2018) explain every organization is moving toward building a smart and environmentally friendly environment. Nowadays green HRM play a fundamental role towards the integration of corporate environment management into human resource management. Artificial intelligence is an emerging technology which is enhancing the effectiveness of green human resource management processes. Organizations can use artificial intelligence for candidate screening, employee engagement, employee re-engagement and career development without too much use of resources and thus this process is helping to decrease overall environmental impact. it's a process that can be applied in HR policies, procedures and HR perspective and enhance the effectiveness of green human resource management.

CONCLUSION

The chapter focuses on the disruptions, transitions and new order in Human Resource Development. It also throws light on the relationship between corporate governance and Sustainable HRM and how technology supports the business to smoothen its internal processes, key competencies, target markets, and overall organizational structure.

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A STUDY ON WOMEN PIONEERING IN MALE DOMINATED IN INDIAN IT INDUSTRY**¹Ms. Sanjana Kaushik and ²Kanika and ³Neha**¹Assistant Professor in SDIET^{2,3}Student in SDIET**ABSTRACT**

In the traditionally male-dominated landscape of the IT industry, women pioneers are forging new paths, challenging stereotypes, and reshaping the narrative of success. This abstract develops into the experiences of women who are breaking barriers and leading in various capacities within the male-dominated IT sector. Through a combination of qualitative interviews, case studies, and analysis of industry trends, this research explores the strategies, resilience, and innovation exhibited by women in navigating and excelling in IT careers. It examines the impact of mentorship and organizational support structures on women's ability to thrive in environments where they are often underrepresented. Furthermore, this study investigates the intersectionality of gender with other factors such as race, ethnicity, and socioeconomic background, shedding light on the complex dynamics shaping women's experiences in IT leadership roles. By highlighting the stories and strategies of women pioneers, this research contributes to a more nuanced understanding of gender diversity and inclusion in the IT industry, offering insights for organizations striving to create more equitable and supportive workplaces.

Keyword: women, challenge, male-dominate, Strategy, leadership role, IT industry

OBJECTIVE OF THE STUDY

1. To determine the factors influence women pioneering in male-dominated IT industries.
2. To explore the opportunities faced by the women.

REVIEW OF LITERATURE

Women pouring into male dominated IT industry refers to the increasing trend of women entering and participating in field within the information. Breaking the glass ceiling; women pioneers in IT industry by (Jane smith and sarahjohnson 2023)

This review examines their challenges faced by women in the IT industry including gender bias, unequal opportunities, and lack of representation in leadership role it highlight the experience of pioneering women who have successfully navigated these barriers and insights into strategies for promoting gender diversity in the IT sector.

Women leaders in IT by (Rachel lee and Michelle chen)-this review provide a qualitative analysis of the experience of women leader in IT sector. Drawing on interviews and case studies, it identifies common challenges faced by women in male dominated industry and examines the strategies used by successful women pioneers to overcome these obstacles and achieve career success .

Several factors contribute to this trend. Firstly, advancements in technology have led to greater accessibility and democratization of IT education and training, providing women with opportunities to develop the skills needed to succeed in the field. Additionally, awareness campaigns, diversity initiatives, and advocacy efforts have helped to challenge stereotypes and create more inclusive environments within the IT industry, encouraging women to pursue careers in traditionally male-dominated roles.

The Gendering organizational culture; A Feminist perspective by (Judith Lorber and susan A farrell.) published in the organizational dynamics journal in 1991. This review explore how organizational cultures can perpetuate gender inequality and challenges in male dominated in IT industry

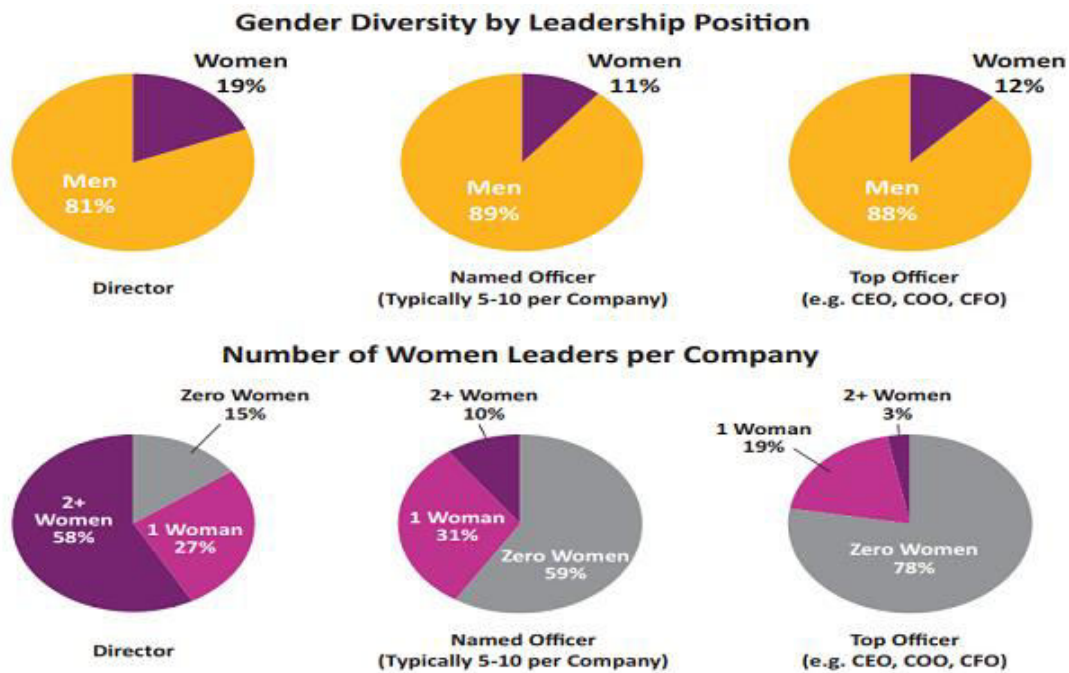
Despite this progress, challenges persist for women pouring into the male-dominated IT industry. Gender bias, discrimination, and stereotypes can create barriers to entry and advancement for women in tech, affecting hiring practices, promotion opportunities, and workplace culture. Moreover, the lack of female role models and mentors in leadership positions can hinder women's career development and contribute to feelings of isolation and imposter syndrome.

To address these challenges and support the continued influx of women into the IT industry, organizations and policymakers must prioritize initiatives aimed at promoting gender diversity, equity, and inclusion. This includes implementing inclusive hiring practices, providing mentorship and sponsorship programs for women, fostering supportive workplace cultures, and actively addressing gender bias and discrimination.

Overall, the trend of women pouring into male-dominated IT industries represents an important step towards greater gender diversity and equality in the tech sector. By creating opportunities and breaking down barriers, organizations can harness the full potential of a diverse workforce and drive innovation and success in the digital age.

A comprehensive literature review on women pioneering in male-dominated IT industries provides a nuanced understanding of the challenges, strategies, and outcomes associated with women's participation and leadership in this sector. Research consistently highlights the prevalence of gender bias and stereotypes, which perpetuate a culture of exclusion and marginalization for women in IT. Studies document the impact of bias on various aspects of women's careers, from recruitment and promotion to salary negotiations and access to leadership positions. Moreover, scholars delve into the intersectional nature of these challenges, exploring how factors such as race, ethnicity, age, and socio-economic status intersect with gender to shape women's experiences in the IT workforce.

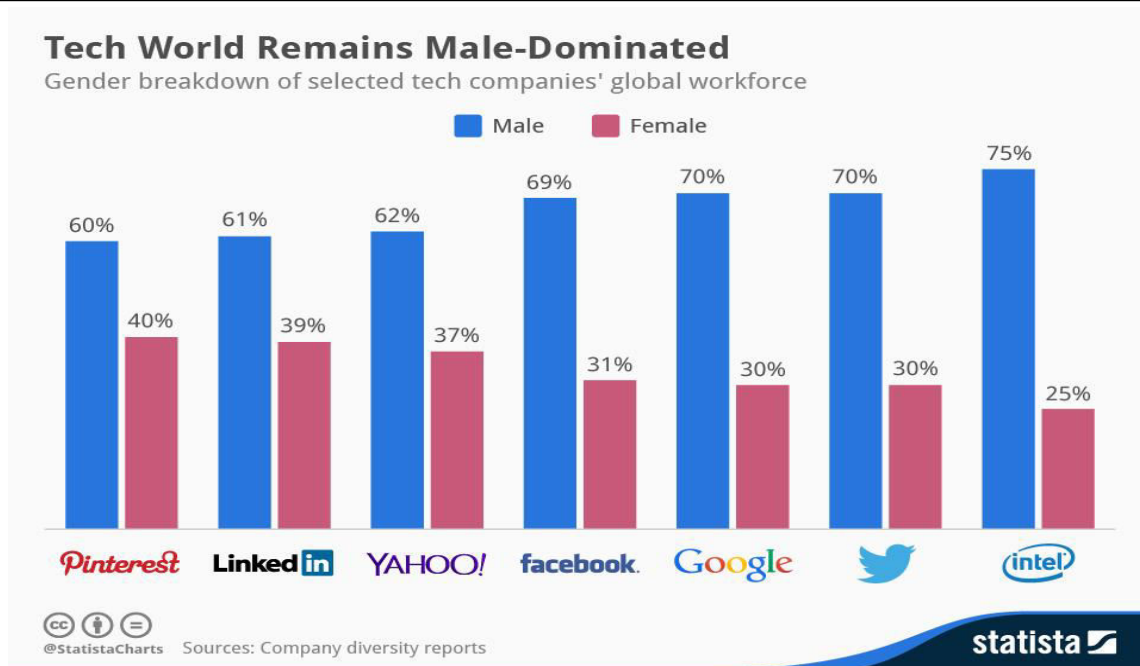
In response to these barriers, women pioneers in IT employ a variety of strategies to navigate and succeed in male-dominated environments. These strategies range from individual-level tactics, such as developing technical expertise and assertive communication skills, to collective actions, such as forming support networks and advocating for organizational change. Research also highlights the importance of mentorship and sponsorship in facilitating women's career advancement, as well as the role of organizational policies and practices in creating inclusive work environments.



Source: - Property casualty 360

Furthermore, the literature underscores the transformative impact of women's leadership on organizational dynamics and outcomes in the IT industry. Studies demonstrate that gender-diverse leadership teams are associated with greater innovation, creativity, and financial performance, challenging traditional notions of leadership effectiveness. Moreover, women leaders often bring unique perspectives and skills to their roles, fostering collaborative decision-making processes and nurturing diverse talent within their teams.

Overall, the literature on women powering in male-dominated IT industries provides valuable insights for practitioners, policymakers, and scholars alike. By deepening our understanding of the challenges and opportunities faced by women pioneers, this body of research informs efforts to promote gender diversity, inclusion, and equity in the IT workforce, ultimately contributing to more vibrant and innovative organizations.



Introduction

In recent years, there has been a notable shift in the gender composition of the information technology (IT) industry, with increasing numbers of women entering and participating in traditionally male-dominated roles. This phenomenon often referred to as "women pouring into male-dominated IT industries," represents a significant departure from historical trends and reflects changing attitudes, opportunities, and dynamics within the tech sector. As technology continues to play an ever-expanding role in virtually every aspect of modern life, the demand for skilled IT professionals has soared, creating new avenues for women to pursue rewarding and impactful careers in fields such as software development, cyber security, data analytics, and IT management. This introduction will explore the factors driving this trend, the challenges and opportunities it presents, and the implications for the future of the IT industry and beyond. By examining the phenomenon of women pouring into male-dominated IT industries, we gain valuable insights into the evolving landscape of gender diversity and inclusion in one of the most dynamic and influential sectors of the global economy.

Factors:

Several factors influence women pioneering in male-dominated IT industries, including:

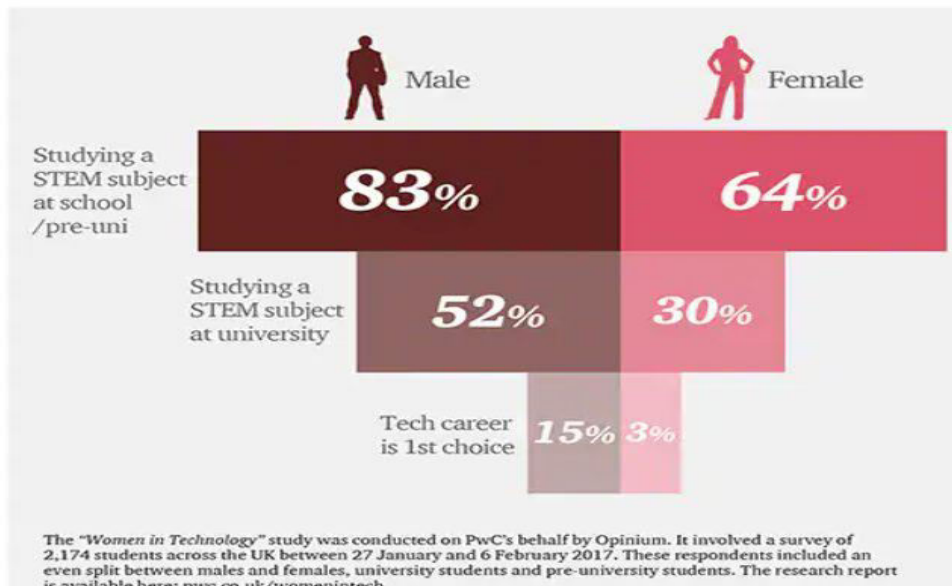
- 1. Gender Bias and Stereotypes:** Persistent gender bias and stereotypes within the IT industry can create significant barriers for women, affecting hiring decisions, promotion opportunities, and workplace dynamics. Stereotypes that portray women as less competent or suited for technical roles can undermine their confidence and limit their career advancement.
- 2. Workplace Culture:** The prevailing workplace culture within many IT organizations may be unwelcoming or hostile to women, contributing to feelings of isolation, imposter syndrome, and a lack of belonging. A culture that prioritizes long hours, a competitive environment, and limited work-life balance can disproportionately impact women, particularly those with caregiving responsibilities.
- 3. Lack of Representation:** The underrepresentation of women in leadership positions and technical roles within the IT industry can serve as a deterrent for aspiring women professionals. The absence of visible female role models and mentors can limit women's access to support networks and opportunities for career development and advancement.
- 4. Educational Opportunities:** Disparities in access to quality education and training in STEM fields can hinder women's entry into the IT industry. Societal stereotypes and cultural norms may discourage girls and women from pursuing careers in technology from an early age, resulting in a smaller pool of female talent entering the field.
- 5. Implicit Bias and Discrimination:** Implicit biases and discriminatory practices in recruitment, hiring, and performance evaluations can disadvantage women in male-dominated IT environments. Biases that favor male candidates or prioritize masculine traits and communication styles can perpetuate gender inequality and limit women's opportunities for success.

6. Workplace Policies and Practices: Organizational policies and practices, such as maternity leave policies, flexible work arrangements, and diversity initiatives, can significantly impact women's experiences in the IT industry. Companies that prioritize diversity, equity, and inclusion are more likely to attract and retain talented women professionals.

7. Intersectionality: Intersectional factors, such as race, ethnicity, age, sexual orientation, and socio-economic status, intersect with gender to shape women's experiences in the IT industry. Women from marginalized or underrepresented groups may face compounded barriers and unique challenges that require tailored interventions and support.

Addressing these factors requires concerted efforts from both organizations and society as a whole to promote gender diversity, equity, and inclusion in the IT industry. This includes implementing inclusive policies and practices, challenging stereotypes and biases, providing mentorship and sponsorship opportunities, and fostering supportive workplace cultures that value and empower women professionals.

Girls are less likely to study STEM subjects at school and this continues through university and into their careers



Source: - Adzooma

Opportunity: Women in the IT sector have a wide range of opportunities available to them, including:

1. Career advancement: Women can pursue various career paths within the IT sector, including software development, data analysis, cybersecurity, project management, and more. With the right skills and experience, women can advance to leadership positions and have a significant impact on the direction of technology companies.

2. Flexibility: Many IT roles offer flexible work arrangements, such as remote work options or flexible hours, allowing women to better balance their professional and personal lives.

3. Skills development: The IT sector is constantly evolving, providing women with opportunities to continuously learn and develop new skills. Whether through formal education, online courses, or on-the-job training, women can enhance their skill sets and stay competitive in the field.

4. Networking and mentorship: Women in IT can benefit from networking opportunities and mentorship programs that provide guidance, support, and career advice. Building strong professional relationships can open doors to new opportunities and help women navigate their career paths more effectively.

5. Entrepreneurship: Women have the opportunity to start their own IT companies or pursue entrepreneurship within the technology sector. With the right idea, skills, and determination, women can launch successful tech startups and make a significant impact in the industry.

6 Advocacy and Leadership: Women in IT can become advocates for diversity, equity, and inclusion in the workplace, championing initiatives that promote gender equality and create more supportive environments for women in technology. Additionally, women can take on leadership roles within professional organizations and industry groups, influencing policies and practices that affect women in the IT sector.

Overall, the IT sector offers a wealth of opportunities for women to thrive, innovate, and make meaningful contributions to the field of technology. With determination, perseverance, and support, women can succeed and excel in various roles within the IT industry.

FINDINGS

Feedback of women's about working in IT industry- Feedback from a woman working in a male-dominated IT industry can provide valuable insights into the challenges and opportunities she faces.

"As a woman working in a male-dominated IT industry, I have encountered both challenges and opportunities. On one hand, I often feel the pressure to prove myself and overcome gender biases and stereotypes that persist in the workplace. It can be challenging to assert myself in meetings and projects, particularly when my contributions are sometimes overlooked or dismissed. Additionally, the lack of female role models and mentors can make it difficult to navigate career development and advancement opportunities.

However, there are also opportunities for growth and impact in this environment. I've found that by leveraging my unique perspectives and skills, I can contribute valuable insights and solutions to team projects. Building strong relationships with supportive colleagues, both male and female, has been instrumental in my success. Additionally, I've sought out mentorship opportunities and professional development initiatives to further my career aspirations.

Overall, while working in a male-dominated IT industry presents its challenges, it has also allowed me to develop resilience, assertiveness, and leadership skills. By advocating for myself and supporting other women in the industry, I believe we can continue to challenge stereotypes and create more inclusive and equitable workplaces for all.

Several factors contribute to the male-dominated nature of the cyber security industry. These include long-standing gender biases and stereotypes that portray cyber security as a masculine domain requiring technical expertise and assertiveness. Additionally, the lack of female representation in STEM (Science, Technology, Engineering, and Mathematics) education and training programs has resulted in fewer women pursuing careers in cyber security.

Despite these challenges, efforts are being made to increase gender diversity and inclusion in the cyber security industry. Organizations and advocacy groups are implementing initiatives to attract and retain more women in cyber security roles, including mentorship programs, scholarships, and awareness campaigns highlighting the importance of diversity in the field.

While progress has been made, there is still work to be done to achieve gender parity in the cyber security industry and create a more inclusive and diverse workforce. Increasing representation of women in cyber security not only fosters innovation and creativity but also helps address the growing demand for cyber security professionals in an increasingly digital world.

CONCLUSION

In conclusion, the phenomenon of women pioneering in male-dominated IT industries represents a significant shift towards greater gender diversity and inclusion in the tech sector. Despite facing persistent challenges such as bias and stereotypes, women are increasingly breaking barriers and making significant contributions to innovation and success in traditionally male-dominated roles. Their resilience, determination, and ability to leverage their unique perspectives highlight the transformative potential of diversity in driving progress and shaping the future of the IT industry. Continued efforts to support and empower women pioneers are essential for building more equitable and inclusive workplaces, ultimately benefiting organizations, industries, and society as a whole.

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INDIA’S RISING DEFENCE EXPORTS: A CRITICAL ANALYSIS

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ABSTRACT

India, since its becoming independent, had heavily depended on the imports of the defence equipments, for ensuring security to its teeming millions of its denizens. As per SIPRI Report (2014), India was the highest importer of weapons in the world. However, since the 2014, the entire scenario tilted in favour of self reliant India under “Atmanirbhar Bharat” initiative and today setting the high export goals of INR 25,000 crores worth of exports. The present research paper dwells on this crucial aspect of exploring the policy initiatives like ‘Make in India’, Defence Industrial Corridor, Defence Investor Cell, Innovations for Defence Excellence (iDEX), Defence Procurement Policy, developing Artificial Intelligence (AI) based capabilities, undertaken by Indian Government to usher big change i.e - to emerge as one of the fastest growing defence weapon exporting country in the world.

Keywords: Atmanirbhar Bharat, Defence Industrial Corridor, SIPRI, iDEX, Defence Exports & Imports.

1.0 INTRODUCTION

According to Stockholm International Peace Research Institute (SIPRI) report of 2012, India was the world’s largest arms importer with country spending on defence hovering between 2.3 % and 3 % of GDP. India imported about 70 percent of its defence equipments. The policy of the Ministry of Defence is to equip India with the capability to produce 70 percent of its required military equipment domestically in coming years. Former Defence Minister Mr. A.K.Antony was a votary of the Indian defence self-reliance. In his view, “ A country like India cannot indefinitely depend upon foreign weapons”. He further pointed out that India’s image as global leader in IT should be reflected in the national defence domain too.

2.0 RESEARCH OBJECTIVES

A qualitative study was undertaken to study the changing trend of India’s defense production in the country.

- 2.1 To analyze the ‘production of defense weapons’ by Defense PSUs since past & present years
- 2.2 To examine the ‘policy initiatives’ which propelled the defense PSUs towards production & exports in the country.
- 2.3 To focus on the ‘Defense Industrial Corridor’. in the country
- 2.4 To highlight the ‘emerging trend’ of export of Defense items.

3.0 GLOBAL ARMS PRODUCTION

As per the SIPRI Report (2022), the US companies lead in terms of numbers. There are 43 US companies which are in top 100 arms production companies globally. The top five companies , in terms of arms revenue are US companies. They are (in order): Lockheed Martin Corp, Raytheon Technologies, Norththrop Grumman Corp, Boeing and General Dynamics Corp. However, Britain’s BAE Systems, followed by China’s three companies-NORINCO, AVIC,and CASC and Russia’s Rostec, figure in the top 10 companies in arms revenue generation. *India’s Hindustan Aeronautics Limited(HAL) , Bharat electronics Limited (BEL) and Mazgaon Dock Shipbuilders (MDS) rank 41, 63 & 89* respectively , in the top 100 global arms revenue generation companies.

Table-1: Global Arms Revenue Generation Countries & Companies (In Top 100)

Sn	Country	No Of Companies
1	Usa	43
2	China	8
3	Uk	7
4	France	5
5	Germany	4
6	Japan	4
7	South Korea	4
8	Turkiye	4
9	India	3

10	Trans European	3
11	Israel	3
12	Russia	2
13	Canada	1
14	Poland	1
15	Spain	1
6	Italy	1
17	Taiwan	1
18	Australia	1
19	Ukraine	1
20	Norway	1
21	Singapore	1
22	Sweden	1
Total Companies		100
Source: Compiled By The Author From Sipri Report		

4.0 India’s Defence Import Scenario

The partitioned India, in 1947, was economically weak and had its own share of burdens too. The unprovoked wars , from across the borders, put tremendous pressure on its defence security and economy. In order to face such eventualities in future, the Indian Government imported arms and ammunitions from different countries. As per the SIPRI Report (2012), between 1950 & 2010, India had imported arms and ammunitions from USSR/Russia, Britain, France, Germany, and Netherlands. The USA was the late entrant in the emerging Indian Defence market, when India’s defence procurement budget increased to 2,00,000 crores, in year 2012-13. Despite all, *India had to face US imposed technology denial regimes, which were specifically India targeted, so that India could not progress in the area of nuclear, space and defence technologies.*

Ussr/ Russia	64.84
Britain	15.3
France	4.0
Germany	1.9
Netherlands	1.5
Israel	1.0 +

Source: SIPRI Reports

The **US Congressional Research Report 2002**, which was also referred by the same SIPRI Report highlighted that between 1995-1999, India was the fourth largest arms importing country among the developing nations, while it came one notch up by securing third rank between 1999-2002, importing worth \$ 8000 millions USD. India’s collectively rank was 3rd in between 1995-2002.

Rank	Year	In Million Us Dollar
4	1995-1998	6100
3	1999-2002	8000

Source- Us Congressional Research Report 2002

The imported weapon items between 1995-2002, included Tanks & self –propelled guns, Artillery, Armoured Personal Carriers (APC) & Armoured Cars(AC), Major Surface Combatants (includes aircraft carriers, cruisers, destroyers & frigates), Submarines, guided Missile patrol Boats, Supersonic Combat Aircraft, and Anti Ship Missiles.

In a significant development, India became largest importer in the world , between 2017-2021, amounting to 11 percent of the global share. Whereas arms exporting countries like USA (39%), Russia (19%), France (11%)

, China(4.6%) and Germany (4.5%) accounted for the top five global exporters of arms in the world. (SIPRI2022). In a similar vein, India also emerged as third largest military spender in the world, by spending \$ 72.9 billion, an increase of 2.1 percent in 2020. (SIPRI 2021)

The SIPRI 2022 Report also estimated that global value of arms trade was at least **\$112 billion in 2020 compared to \$ 87 billion in 2011. It is also highlighted that the total value of the arms trade in 2020 was 0.5 percent of the total value of global international trade in 2020.**

5.0 INDIA’S DEFENCE PRODUCTION PSUs

The Department of Defence production was set up in November 1962 with the objective of developing a comprehensive production infrastructure for the defence of the nation. Following are the main organizations under the Department of Defence production.

1	Ordnance Factory Board (OFB)
2	Hindustan Aeronautics Limited
3	Bharat Electronics Limited
4	Garden Reach Shipbuilders & Engineers Limited
5	Goa Shipyard Limited
6	Hindustan Shipyard Limited
7	Mazagaon Dock Limited
8	Bharat Earth Movers Limited(BEML)
9	Bharat Dynamics Limited (BDL)
10	Mishra Dhatu Nigam Limited
11	National Institute for Research & Development in Defence Ship Building

Source: Mod Annual Report 2011-12

Indian Ordnance factory trace their history to 1801, when the first factory to produce guns was established at Cossipore, Kolkata. The real boost to the growth of ordnance factories came after the Indo-China war in 1962. Today organization consists of 39 factories.

As per the SIPRI Report (2023), three Indian Defence PSU figure in Top 100 Arms producing companies in the world, whereas, India is the fourth largest Arms producer in the Asia and the Oceania region.

Rank		Company	Country	Arms Revenue		Total Arms Revenue (million US Dollars)
2022	2021			2022	2021	
41	42	Hindustan Aeronautics (HAL)	India	3460	3317	3643
63	62	Bharat Electronics(BEL)	India	1920	1839	2208
89	102	Mazagon Dock Shipbuilders	India	1000	784	997

Source: Sipri Report 2023

Country	No. of companies	Arms revenue	Change in arms	Share of total Top 100
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				revenue	arms revenue
		2022	2021	2021-22	2021-22
Japan	4	7140	7068	1.00%	1.20%
South Korea	4	6870	6934	-0.90%	1.20%
India	3	6380	5940	7.40%	1.10%
Australia	1	980	925	6.00%	0,20%
Singapore	1	2180	2221	-1.80%	0.40%
Taiwan	1	2590	1904	36.00%	0.40%
Total	22	1340	1,30,047	3.1	22.40%

Source: Sipri Year Book 2023

5.1 GOIPOLICY INITIATIVES

In order to promote “self reliance” in the Defence Sector, continuous efforts were being made to indigenize defence equipments wherever technologically feasible & economically viable. (MOD AR2011-12). According to the Annual Report, in May 2001, the Defence sector, which was reserved for the public sector, was opened for 100 % Indian private sector participation, with Foreign Direct Investment (FDI) upto 26%, both subject to licensing. The FDI limit was later increased to 49 percent via Government route, and above 49 percent through Cabinet Committee on Security Affairs (CCSA), on case to case basis. (ARMOD 2014-15)

By the end of financial year March 31, 2014, 126 companies were allowed to manufacture wide range of defence items. During this period, major export destinations for defence products were-Italy, Israel, Ecuador, Russia, USA, UAE, Namibia, Srilanka, Malaysia, Seychelles, France, Germany, Romania, UK, Indonesia, Mauritius, Netherlands, Surinam, Kenya, Nepal, Botswana, and Oman.(MOD AR 2013-14).

A security manual for private sector was brought out by Defence Ministry, which provides elaborate guidelines for physical documentation & IT security for the companies. Safety Manual comprises three categories:

Category A- Highly classified and sensitive, manufacturing requires highest security

Category B- includes semi-finished products, sub-assemblies, sub-systems of main equipments, platforms, and some finished goods of lesser sensitivity,

Category-C: product under this category is of generic nature, and doesn't involve classified or secret information. (AR MOD 2014-15)

The Department of Defence production finalised the 'Defence Product List', for the purpose of Licensing under Industries (Development & Regulation) Act 1951. As per the notification initial validity of industrial license was fixed for 15 years, later extendable to 18 years. (AR MOD 2015-16)

In a significant development during 2017-18, "Make-II" procedure was launched in January 2018, for simplification of collaboration between Government and Private Indian Industry, for indigenous design, development and manufacture of defence equipment. (AR MOD 2017-18). Also, in 2018 a "Defence Investor Cell", became functional, acting as *one stop solution to all defence production related queries*.

The Standard Operating Procedure (SOP) for the issue of Export Authorisation for export of Munitions List has been revised. Military aircraft and avionics has been included in the Munitions List (April 2017) and DDP is authorized to issue export license for the same. The "Make in India" initiative by the GOI has pushed OFB to go for indigenisation efforts and reduced imports of defence equipments.

Launch of Vision 2022-23 for Defence PSUs: On April 9, 2018, **five action plans** were initiated. **First**, In order to maximize Geo-strategic reach of Defence PSUs, a 25 percent of annual turnover of respective DPSUs should be from exports, so that India becomes a significant exporter instead of being an importer; **Second**, import substitution amounting to INR 15,000 Crores by 2022-23, through indigenisation of products/ process is targeted; **Third**, to develop roadmap for developing Artificial Intelligence (AI) based technologies for their platforms/ equipment and use them; **Fourth**, ease of doing business in exports through end-to-end online portal. New export offices have been opened by the Defence PSU BEL, in Hanoi(Vietnam) on June 2018 and another in Myanmar. This gives a tremendous boost to "Make in India in Defence" (AR MOD 2018)

The US imposed 'technology denial regimes' came out as a boon to India because Indian scientists had to design and develop "Critical & Dual use technologies", for the sake of self reliance. Because of which , more than 300-400 industries started working with India's strategic sectors- defence, nuclear & space. It is heartening to note that more than 60- 70 percent of missile components are made by Indian industries.

5.2. MAKE IN INDIA INITIATIVE

In absence of a Indian world class, medium, multi-role combat aircraft (MMRCA) India had to shell out INR 75,000 crores to purchase 126 French Rafale. On the other hand, the indigenously designed and develop, TEJAS project since 1983, is merely 10,000 crores, which required to develop 20 Tejas prototypes.

As per policy initiatives 'weapon categories' have been identified, where imports have been almost replaced by 'domestic products' that include warships, artillery guns, LCA, basic trainer aircraft, a variety of helicopters, radars and different types of ammunitions.

In order to encourage domestic production, the GOI has Under " Make in India" initiative, approved(in March2024) indigenous production worth INR 32,100 Crores, which include warships, supersonic missiles for the navy and surface to air missiles and weapon locating radars for the army.

MOD, has, in total signed contracts worth INR 52,000 Crores , for locally made military hardware, including basic trainer aircraft, a satellite for army, training ships, medium-power radars, radar warning receivers, air defence systems and Dornier aircraft.

5.3 DEFENCE PROCUREMENT BUDGET

GOI has notified hundreds of weapons and systems that cannot be imported, a move aimed to boost indigineous defence manufacturing. However, as per latest SIPRI Report, India is still a largest importer of military hardware in the world.

GOI has announce a policy of minimum 20 percent defence procurement from MSMEs of India, under Defence Procurement Policy, which will help large numbers of Micro, Small, and Medium Enterprises.

India has recently earmarked 75% of the FY 2024-25 , defence capital procurement budget for locally made weapons and systems.

Table-7. Share of Indigeneous Product In Military's Capital Acquisition Budget	
2020-21	58%
2021-22	64%

2022-23

68%

In the current FY 2024-25, INR 1 lakh crore has been set aside for procurement of local products.

Table -8 Procurement of Local Products (In Inr Crores)	
FY 2024-25	1,00,000
FY 2023-24	84,598
FY 2022-23	51,000

5.4 Defence Industrial Corridors

On February 1, 2018, Finance Minister announced setting up of two Defence Corridors in the country. These were in Uttar Pradesh & Tamil Nadu. The six nodal points in Uttar Pradesh & five nodal points in Tamil Nadu are as follows:

5.4.1 Uttar Pradesh Defence Corridor

It comprises cities of *Aligarh, Agra, Kanpur, Lucknow, Chitrakoot, & Jhansi*.

Total of 46 MOUs were signed during **DefExpo 2020** in Lucknow between UPEIDA and private players, start ups and industry giants. Similarly, during Aero India 2021, 22 MOUs were signed, which led to 68 MOUs signed by UPEIDA. The major partners are : Ordnance factories, Hindustan Aeronautics Limited (HAL), Bharat Electronics Limited (BEL), Bharat Dynamics Limited (BDL), and Brahmos Aerospace who have shown interest in investment in Defence manufacturing.

5.4.2 Tamil Nadu Defence Corridor

It comprises *Chennai, Coimbatore, Hosur, Salem, & Trichurapalli* industrial cities

So far, five industry interactions in Uttar Pradesh and six industry interactions in Tamil Nadu has taken place in order to elicit stakeholders views. Based on such interactions, on August 11, 2018, investments of over INR 3700 crores were announced for UP Defence Corridor in an event at Aligarh. In a similar event held in Trichurapalli on January 20, 2019, investments of over INR 3100 were announced for Tamil Nadu Defence Corridor. A Committee under chairmanship of Additional Secretary, DDP has been formed to monitor the implementation of these projects announced for two corridors.

A Joint Venture between OFB & Concern Kalashnikov, Russia along with **Rosonboron Export (ROE) Russia** has been approved in Korwa (UP) for the manufacture of AK- 203 rifles, which will boost the UP Defence Corridor. Similarly, “**Defence Innovation Hub**” has been approved for Coimbatore, Tamil Nadu and being developed with Coimbatore District Small Industries Association, which will also boost the Tamil Nadu Defence Corridor.

5.5 Innovations for Defence Excellence (IDEX)

iDEX has been operationalised to provide necessary incubation and infrastructure support to the start-ups in defence area. More than 50 start-ups are currently developing new “ fit-for-military-use” technologies/ products. The next target for iDEX would be to engage more than 300 start ups and developing 60 new technologies/ products during the next five years, and their procurement under Make-II route of DPP.

Under the iDEX scheme, a maximum of INR 1.5 Crore funding is available to the participant for development of the prototype. iDEX is being implemented by Defence Innovation Organization, a SPV floated for this purpose with INR 50 Crore support each from BEL and HAL. (AR MOD 2018-19)

5.6 Mission Raksha Gyan Shakti promotes greater culture of innovation and technology development and file greater number of patents in Defence PSUs and OFB.

5.7 NEW TECHNOLOGIES DEVELOPMENT: DEVELOPING ARTIFICIAL INTELLIGENCE BASED CAPABILITIES

A Task Force under the chairmanship of **Shri N. Chandrasekaran, Chairman, Tata Sons**, to study the strategic implications of Artificial Intelligence in National Security & Defence needs and to make appropriate recommendations in this regard. (AR 2018-19)

6.0 INDIA’S DEFENCE EXPORTS

HAL along with seven other defence PSUs, 40 units of Ordnance Factory Board (OFB) and 50 laboratories under defence research & development constitute the mainstay of defence production scenario in the country.

Earlier HAL’s 85 percent orders were Government driven and lacked much needed quality. However, HAL has its collaborations with world class aerospace enterprise like Boeing, Honeywell, Airbus, Pratt & Whitney, Rolls Royce and Israel Space Industry (ISI). The current high profile projects are Jet Trainer SITARA and Light Combat Helicopter.

In a recently awarded Indian defence contracts worth INR 5400 crores, for three contracts, covering advance communication satellite, GSAT 7B for the army, an automated air defence control and reporting system for the army’s defence units and Sarang electronic support measure systems for navy helicopters

A defence contract for domestic shipyards worth INR 19,600 crores with domestic shipyard, 11 next generation patrol vessels and six next generation missile vessels was floated by the Ministry of Defence.

Presently, as per reports, 85 countries are currently importing military hardware from India. These include missiles, advanced light helicopter, offshore patrol vessels, personal protective gear, and surveillance systems.

Table-9 : Indian Psus Companies Getting Defence Contract	
Indian Psu	Defence Contract
Bharat Electronics Limited (BEL)	INR 1700 crore for fire control system, to boost the navy’s capability
Bharat Dynamics Limited (BDL)	INR 8,160 crore for improved Akash surface-to-air missiles for the army and another INR 990 crores with BEL for Swathi weapon locating radars, for the army
Source: Compiled by the Author	

As per recent GOI order placed to HAL, worth INR 67, 000 Crores worth of LCA- Tejas production, for revamping its own ageing MIGs squadron by Tejas-Mark-II, IN COMING YEARS.

Table-10 India's Defence Exports Orders			
Indian Psu	Defence Item	Importing Country	Comment
HAL	LCA TEJAS	Egypt & Argentina	Egypt requires 20 aircraft for its Air Force, while Argentina proposed 15 Tejas new fighters
BRAHMOS AEROSPACE	Brahmos Cruise Missile	Phillipines	Signed a deal worth \$ 375 million for the Phillipine Marines, to buy three batteries of BrahMos supersonic cruise missiles.
KALYANI STRATEGIC SYSTEMS LIMITED	155 mm Military Guns	Phillipines	Won an export order worth \$ 155.5 million for supplying 155 mm artillery guns.
Source: Compiled by the Author			

As per the Annual Report (MOD 2011-12), exports by Indian Defence Industry for 2012-13 was INR 460.97 Crores, and in 2013-14 was INR 613.45 Crores. The export destinations covered 22 countries globally.

The value of defence exports, for the financial year 2015-16, was INR 1379.42 Crores compared to previous year 2014-15, INR 994.04 Crores. During this period, 12-14 private companies contributed to defence exports. (AR MOD 2015-16).

Till June 2016, 342 Industrial Licenses (ILs) were issued by Department of Industrial Policy & Promotion (DIPP), covering 205 companies, for manufacturing of wide range of defence items. The Defence exports for the FY 2016-17 were INR 1105.20 Crores (provisional) against INR 2059 Crores for the FY 2015-16.

Table-11 India's Edefence Export Till 21 Feb, 2024	
FY	EXPORT VALUE IN (INR CRORES)
2014-15	1941
2015-16	2059
2016-17	1522
2017-18	4682
2018-19	10746
2019-20	9116
2020-21	8435
2021-22	12815
2022-23	15,920
Source: Compiled by the Author	

6.1 EXPORT PROMOTION

Defence exports have grown manifold over the last few years. In order to achieve the target of INR 35,000 Crores (US \$ 5 Billion) by 2025, certain initiatives have been taken by the GOI. These are:

- Defence attaches posted at Indian embassies abroad have been mandated and are supported to promote export of indigenous defence equipment abroad;
- To be promoted through Govt. to Govt. agreements and Lines of Credit/ Funding;
- Export Promotion Cell to be set up
- Defence Expo and Aero India will be positioned as major global events to showcase India's capabilities in defence manufacturing and encourage exports

7.0 CONCLUSION

According to Former Defence Secretary, Mr. Ajay Kumar, today analysts foresee a rapid expansion of the global defence and aerospace industry, from \$750 billion in 2022, to \$ 1.38 Trillion by 2030. Defence exports offer economic gains and substantial strategic advantages. As per assessment, India's defence exports surged to a record INR 16,000 crores in 2022-23, registering a whopping 800 percent growth in five years and reaching 85 countries across continents. As per report, India has emerged as one of the top 25 defence exporters globally. The 80% of this growth is attributable to private industry. India's defence exports encompasses missiles, rockets, torpedoes, artillery –guns and drones among others. It has also helped Indian MSMEs to integrate into global defence original equipment manufacturers (OEMs) supply chains, and subsequently surge in growth can ensure India favourable growth.

GOI led Innovation for defence excellence (IDEX) programme led to development of hundreds of startups , serving the Indian armed forces, in areas of wireless communication, image sensors, quantum communication, image sensors, AI, and swarming. These are also poised to get global license for their technologies in such critical areas. The rising importance of software and artificial intelligence(AI) in defence platforms align with India's strengths. Indo- Pacific region gaining increased significance (owing to QUAD), opens up opportunities for Indian shipyards for servicing of US & European naval fleet.

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EXPLORING THE DYNAMICS OF COLLABORATION BETWEEN PR PROFESSIONALS AND AI SYSTEMS IN DEVELOPING AND EXECUTING COMMUNICATION STRATEGIES

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ABSTRACT

This research paper aims to delve into the evolving landscape of Public Relations (PR) and its dynamic collaboration with Artificial Intelligence (AI) systems in the development and execution of communication strategies. As AI technologies continue to advance, their integration into various professional domains, including PR, has become increasingly prevalent. This study seeks to understand the synergies and challenges arising from the interaction between human PR professionals and AI systems in shaping effective communication campaigns. This paper explores the intricacies of the collaboration between PR professionals and AI, focusing on how this partnership influences the strategic development and execution of communication plans.

Keywords: Artificial intelligence, Digital innovation, Public relations, Strategic disruption

INTRODUCTION

In the very last decade, there has been digital modernization in the fields of marketing exchange of information. Now, with AI (artificial intelligence), computers and machinery can perform everyday jobs that typically required individual human intelligence. One such purpose in the field of marketing communications that is being witnessed by the growing application and is at the edge of the AI revolution is public relations (PR). PR, as a function, makes sure that the organizations interact the right message at the right time and in the right place to the right audience. Many organizations are focusing a lot on imparting smart solutions to its stakeholders to attain organizational goals. With the implementation and application of AI technologies and tools, organizations can compute the value of PR hard work and ensure alliance with their business' overall operations and goals.

In the context of PR, AI has the probable potential to automate and carry out various responsibilities. These tasks include lettering data-driven stories, organizing and updating media lists, aiding in crisis management, exchanging and transcribing audio into manuscript, following and predicting media inclination and monitoring and running social media. AI has an impact and it is transforming our society, commerce and daily personal life, decrypting them unrecognizable from just a decade ago. Most of the industries are being able to witness a significant revolutionize in working and carrying out due to the adoption of AI in working processes and systems. The PR industry having numerous small and big agencies is at the brink of undergoing several AI-powered makeovers. Experts think that there is a need of PR industry to rediscover itself in the era of Artificial Intelligence. Smart phone technology and Social media have shaped several opportunities and challenges in the framework of data management and its usage. AI being with its self-learning capabilities provides the PR professionals a tool not only to connect insights from this enormous data but also a method and system to respond separately to tweets, queries, grievances, posts and different other messages on the social media.

The routine work of PR professionals includes compiling and making strategies, designing for campaigns, writing and distributing various press releases, handling different PR crisis and creating dossiers. As some of these activities are monotonous and time-consuming, dealing and working with data on regular basis for multiple clients consume much of the time of these PR professionals.

The technological development in the last decade has altered aspects of work and relations between stakeholders within the PR industry. Experts say that the PR industry is witnessing significant changes due to technological developments in the past few years. AI as a new technology, although still in its early stages, is grabbing headlines in the mainstream media due to the changes it is bringing in the functionality, systems, management and workflow processes in the PR industry. Few of the PR agencies use AI to accomplish some of the daily tasks. Some of the PR tools already use AI and machine learning to capture and deliver quality information. The AI-powered tools are aiding in finding, scheduling, managing and reporting on social media content more feasible for PR professionals. To maintain a positive brand image and a healthy relationship with stakeholders, a PR professional draws out a specific communication plan and uses direct and indirect media to reach out to the target audience. PR professionals are also typically involved in analysing, interpreting, understanding and influencing public opinion about the brand and the company. In future, AI will do more of mundane work like creating media lists, scheduling meetings, and sending follow-up emails and, in turn, save the valuable time of PR professionals. With AI, the PR professionals can use their precious time more creatively for relationship building, strategy development, trust building and storytelling.

AI by its inherent traits of associated smartness and intelligence helps in adding context, specificity, relevance and personalization to the necessary process and methods in the PR industry. AI has overcome significant challenges like the delivery of customized solutions at mass and individual levels. AI also facilitates the measurement of the effectiveness of the campaigns and helps in overcoming the possible hindrances or challenges. This article throws light on the concept and benefits of AI, its related application, impact and future challenges in the PR industry in the AI-powered age. It helps in assessing the effects of AI in the PR industry. It tries to explore the possibility of strategic disruption by specialist agencies with AI-powered solutions of the existing large PR agencies and agency networks. It also explores the potential of AI assistants in developing smart, engaging and productive work solutions in the PR industry.

The convergence of technology and communication has ushered in a new era for Public Relations, transforming traditional practices and introducing innovative tools powered by Artificial Intelligence. As organizations strive to navigate the complexities of a rapidly changing media landscape, PR professionals are embracing AI systems to augment their capabilities. Artificial intelligence (AI) has revolutionized various industries, including public relations (PR). With AI, PR agencies can gather insights, automate tedious tasks, and analyze data to develop more effective strategies. In this article, we will explore the innovative applications of AI in PR agencies and their future implications. In recent years, PR agencies have started adopting AI to improve their services. AI can help PR professionals automate repetitive tasks and provide insights to develop better strategies. By using AI-powered tools, PR agencies can save time, reduce costs, and increase efficiency. In addition, AI can help PR agencies better understand their audience and target them more effectively.

LITERATURE REVIEW

Gregory (2004) talked about that the Web and electronic communication had changed PR. Instead of focussing on the current practice, PR experts got to consider social and social issues while understanding a modern innovation (Kent & Saffer, 2014). AI is drawing in consideration within the communication industry (PRs and promoting) as specialists, and recently, researchers have begun recognizing AI's beneficial potential. AI's rise is driving to concerns related to its affect on employments. All sorts of organizations, counting their in-house PR groups or PR organization, are progressively utilizing AI to upgrade their capabilities (Galloway & Swiatek, 2018). PR professionals battle in managing with the application of social media and the Web on PR hone (Robson & James, 2012). Social media has gained conspicuousness within the field of PR as a channel for communicating with open and partners conjointly for feeding connections with them (Verhoeven, Tench, Zeffass, Moreno, & Verčič, 2012). It is basic for PR experts to get it how technologies are changing open practices for giving ethical and capable exhortation to their organizations. PR experts ought to maintain a strategic distance from flooding the online environment with substance that's unimportant for open (Valentini, 2015). There's a need of gifted individuals to bargain with the challenges emerging due to unused media (Tench, Zeffass, Verhoeven, Vercic, Moreno, & Affirm, 2013).

Few papers talk about the part, application and AI within the PR calling. Within the past, the ponders have focussed on the part and application of data and communication innovations (ICTs) within the PR field. A few of the audits have examined the challenges confronted by PR experts in adjusting to rising advanced innovations such as social media (Wigley & Zhang, 2011). The breadth and profundity of data accessible on the Web and the speed with which unused information is produced is coming about in recently discovered challenges. Macnamara, Zeffass, Adi, and Lwin (2018) concluded that in spite of the fundamental significance joined to computerized stages and social media, PR specialists have moo to direct capabilities in unused media utilization. Navarro, Moreno, and Al-Sumait, (2017) affirmed that PR experts choose the substance to be distributed and exercises to be carried out on social media in arrangement with their recognitions instead of partner needs.

Researches have inquired about the illustrations that the utilize of computerized media is critical for get it ing the desires of diverse publics and for making strides the adequacy of communication (Kent & Saffer, 2014; Moreno, Navarro, Tench, & Zeffass, 2015). The advancements in advanced, coming about from hyper-connectivity, rise of smartphones and interconnected gadgets is changing the life of PR experts. In today's environment, a few of the center abilities required for a PR proficient incorporate composing, problem-solving, basic considering and modern media aptitudes (Tench et al., 2013). AI is anticipated to challenge the foundational concept of PR, counting the ethical compass of PR (Tilson, 2017). Chartered Founded of Open Relations came up with a report recommending that mechanization will take absent as it were many PR assignments (Valin, 2018). The rise of AI has raised issues like work misfortunes, moral issues and machines controlling people. AI is anticipated to influence a portion of occupations to higher or less degrees depending on the sort of work (Chui, Manyika, & Miremadi, 2016). A few of the PR experts have created AI anxiety. AI

uneasiness is one of long haul impacts of AI on PR. AI uneasiness alludes to the 'fear of the solidness and the capabilities of AI' (Johnson & Verdicchio, 2017).

Communication pros are beneath weight to unlearn ancient manual aptitudes and learn unused advanced capabilities to outlive within the modern work environment. Past investigates have attempted to highlight the significance of advanced aptitudes (Van Deursen & Van Dijk, 2010). AI can free up practitioners' time, permitting them to center on significant vital work (Yaxley, 2018). Few ponders have investigated the particular computerized aptitudes communication professionals have to be learn in today's AI period. Great news is that instead of getting to be AI specialists, PR specialists have to be utilize AI to offer PR solutions to clients (Galloway & Swiatek, 2018). Pandaetal. 199 None of the considers has attempted to discover out whether PR experts are arranged and gifted sufficient to outlive and thrive within the AI-powered environment within the future. None of the papers has explored how advanced or AI is progressing to affect the agency–client relationship, and whether AI has the potential to disturb the PR industry or not. To communicate with the more youthful open, more seasoned era PR experts got to obtain computerized education (Cismaru, Gazzola, Ciochina, & Leovaridis, 2018).

Till date, the AI-enabled errand mechanization has been given unmistakable quality within the writing (Galloway & Swiatek, 2018). Some time recently 2018, not much insightful fabric related to AI and PR was created and examined at the PR bodies like Open Relations Foundation, but since 2018, the number of conferences focussed on the application of AI in PR has expanded multifold. Pavlik (2007) briefly examines AI's utilize for checking news media scope by utilizing characteristic dialect handling. In a audit paper distributed in 2015 which has looked into the nexus between PR and ICTs, and advanced, social and portable (DSM) media, over a period of 35 a long time covering 155 distributed articles appeared that 63 different terms were utilized within the setting of DSM, and the beat five by recurrence of utilize are social media, Twitter, websites, the Web and web locales in two-thirds (95) of all titles (Verčič, Tkalac, & Sriramesh, 2015). Interests, none of them utilized AI within the title.

The going before think about too underpins the idea that there are not sufficient distributed peer-reviewed papers accessible on the affect of AI applica tion within the PR industry. In this manner, the current consider points to investigate the benefits, restrictions, challenges, execution and impact of AI selection within the PR industry. It too tries to look at the potential of AI as a key disturbance and affect of AI on an agency–client relationship. This think about points to address the taking after inquire about questions:

RQ1: What is the general awareness and attitude of PR experts towards AI applications?

RQ2: What are the applications of AI are meaningful in the PR industry?

RQ3: How is the acceptance of AI going to affect the job of PR experts and client–agency association?

RQ4: Does AI have the possible to be a tactical disruption in the PR industry?

MATERIALS AND METHODS

This exploratory ponder employments a subjective investigate procedure. Subjective interviews can be categorized into three distinctive sorts: unstructured, semi-structured and organized. In this ponder, semi-structured associate sees have been utilized for collecting subjective experiences from the specialists and experts working within the PR industry. In a semi-structured meet, the questioner inquires a few pre-set but open-ended questions (Ayres, 2008). In this meeting strategy, foreordained questions are inquired efficiently, and necessary probes are utilized to urge profitable bits of knowledge around the issues which the questioner is examining or investigating. A pilot ponder was conducted with 10 respondents to guarantee the legitimacy and appropriateness of questions. A talk direct (Annexure I) with open-ended questions was surrounded and finalized based on the reactions of the pilot ponder. The time term for which meet kept going is approximately 25 minutes. The recording gadget was utilized for capturing the interviews with earlier permission and appropriate explanations. Members The PR experts working within the PR organizations were enlisted for the think about by utilizing purposive and snowball testing. Marshall et al. (2013) recommended that for the subjective investigate based on grounded hypothesis, a test measure between 20 and 30 interviews, and 30 at times is adequate. This contention was 200 Diary of Imaginative Communications 14(3) assist backed by Goulielmos (2004). The presumption of 30 tests is based on the guideline of circularity.

This rule proposes that after a certain number of interviews, one begins getting rehashed reactions and no unused bits of knowledge are created. The analyst found that no modern thoughts were delivered after the twenty-fifth meet, which shown information immersion within the consider. The test estimate was constrained to 31 respondents for this subjective inquire about. In add up to, 31 PR experts from section level (10), mid-

level (14) and senior position (7) were associate seen for this consider as they are the individuals who are in a put to comment on the application of AI within the PR industry. Entry-level PR executives were selected as members since earlier thinks about just like the one conducted by Lee, Sha, Dozier, and Sargent (2015) recommend that youthful specialists are frequently the ones performing social media tasks. The millennial era has the Web and other innovations at its transfer, and, thus, are more comfortable with unused innovation (Bargain, Altman, & Rogelberg, 2010). In addition, the youthful administrators are doing a parcel of advanced courses some time recently joining the work and are more open to learning modern advanced abilities, counting AI-based frameworks and forms.

The instruction and involvement profile of the members is encourage broken down as per the level. At the senior level, out of the seven members, two are graduates, four have a postgraduate degree and one includes a postgraduate confirmation. The normal encounter of the members at senior level is 10.1 a long time. At mid-level, out of the 14 members, 6 are graduates, 6 have a postgraduate degree and 2 have a post graduate confirmation. The normal encounter at mid-level is 4.2 a long time. At entry-level, out of the 10 participants, 5 are graduates and 5 are having a postgraduate degree. At the entry-level, the normal involvement is 1.45 a long time. For this ponder, we have characterized entry-level PR experts as having less than three a long time add up to encounter, mid-level as having between three and eight a long time of involvement and senior level as having more than eight a long time of encounter. We have done this classification based on reactions related to classification amid the pilot consider.

BACKGROUND

Historically, PR has relied on human expertise to navigate the nuances of storytelling, relationship building, and crisis management. However, the advent of AI has introduced unprecedented opportunities for efficiency, data analysis, and targeted communication. Understanding the historical context of PR practices and the emergence of AI in this field is crucial to appreciating the impact of their collaboration on communication strategies. The rapid advancement of technology in recent years has had a profound impact on various aspects of society, economics, and everyday life. This is particularly evident in the field of communications, where Public Relations (PR) has undergone significant changes. With the emergence of the internet and social media, PR professionals have had to adapt to new platforms and channels.

Artificial Intelligence (AI) has also made its mark in the PR industry, with a survey showing that 67.8% of PR professionals are already utilizing AI in their work. This growing link between AI and PR highlights the need to explore how AI is being used in the industry and the impact it has on the landscape. While the introduction of AI in the PR industry will undoubtedly bring about changes, these changes do not necessarily have to be negative. With the right approach, AI can be a valuable tool for PR professionals.

THE ROLE OF AI IN PR

This section provides an impression of the precise roles AI plays in the PR scenery. It examines how AI is working in tasks such as statistics analysis, sentiment tracking, media monitoring, and content age band. By understanding the functionalities of AI in PR, we can distinguish its implications for the decision-making processes of communication experts. AI is taking over recurring and mundane responsibilities that were previously sustained. This means that PR experts need to develop new skills or process existing ones to stay pertinent in this changing site. The importance of significant thinking, flexibility, editing, and storytelling skills is emphasized in The State of PR expertise 2023 report.

AI offers several recompense in the field of PR. With its ability to computerize repetitive tasks, it leads to substantial savings in both time and resources. It also enables quick analysis of large volumes of data, providing valuable insights for decision-making. AI helps identify target audiences accurately, leading to more personalized and effective communication. Additionally, AI plays a crucial role in crisis management by monitoring social media and news platforms in real time, alerting PR experts to potential crises and facilitating prompt responses. AI-powered chatbots and virtual assistants enhance customer engagement by providing personalized responses, improving the overall customer experience.

However, there are also concerns associated with AI in PR. The potential lack of empathy and emotional intelligence in AI systems can hinder the building of strong relationships. Ethical issues surrounding privacy, bias, and misinformation can also arise, affecting public trust. The automation capabilities of AI may lead to job displacement for PR professionals, particularly in tasks that can be easily automated. Moreover, an overreliance on technology can restrict creativity, intuition, and human judgment, which are crucial elements in the field of PR. There is also a risk to a company's reputation as AI algorithms can make mistakes or misinterpret data, potentially resulting in inaccurate or damaging PR campaigns.

ANALYSIS AND RESULTS

The following synopsis has been in print and presented using study questions as a base. From the coded statistics, the emerging themes are recognized and given as follows: RQ1: What is the general opinion and approach of PR professionals towards AI applications? Pandaetal. 201 Majority of the PR experts felt that they are conscious of AI and know regarding the application of AI in the PR industry in wide-ranging. They are of the outlook that AI has remarkably taken over so many stand in marketing, but purposely in the circumstance of the PR industry, still AI submission is in its nascent segment. In general, PR experts feel that they are rather acquainted and uncovered to the new digital technology, and they are doubtful about the dispersion of AI in the PR industry. From the consultation data, it emerges that the PR business is slowly taking steps towards the implementation of the latest expertise, but there are detailed areas where the need for the AI tools is becoming predictable. One of the senior-level PR professionals said, 'I feel, with passing instance, the AI and its need will just augment, and I am looking ahead to it'. A senior-level PR executive said, 'Many western PR agencies are into full-blown use of AI in their day to day activity, and have proved that AI generated content is useable without discrepancies and negligible error'. Cumulatively, the respondents agree on the need for AI adoption in the PR industry, especially when it comes to trade with the mundane task. One of the PR experts said, 'The PR experts, mainly my colleagues in created nations, are truly into AI, we see how much easier it has made our personal lives, and are without a doubt looking ahead to making our work life less complicated as well'. One of the mid-level PR experts said, 'There have been points of notice within the PR through digitization just as the capacity to divide information, churn the data as per your require. Dividing is much simpler presently with higher validity and less utilization of time'. One of the entry-level PR professionals said: 'The Indian PR industry has adapted lovely well through digitization, and the complete unused age of the web and I am positive that indeed with AI, the PR individuals will develop and learn'. One of the mid-level experts said, 'Hard to say around AI, but organizations are attempting their best to lead their way up the range of digitisation'.

PR professionals believe that adoption and penetration of new digital technologies lag due to lack of strategic intent, especially when it comes to technology like AI and its acceptance. RQ2: Which applications of AI are meaningful in the PR industry? Experts believe that AI can assist the PR industry in much needed digital transition for its development in sustaining itself in the digital age. The following applications are useful for building a case for AI adoption in the PR industry. Assist PR Managers in Designing Campaigns With AI, PR managers can take decisions grounded in data and insights.

AI can help supervisors in checking social media and other information focuses within the division of time that people have to be fulfill the work. AI can offer assistance make choices related to beginning of campaign, substance, channels, influencers and focusing on. One of the entry-level PR experts opined that 'as a PR proficient, who should bargain with client's needs and their audience's needs and requests, substance technique is one input that AI can give us to create our lives simpler. Giving us a clear picture of requests and conceivable trending requests can offer assistance us arrange better'. Different social media stages are utilizing AI to customize and personalize newsfeeds and posts. Major e-retailers are utilizing AI to send offers to the clients based on their browsing practices. News and 202 Diary of Imaginative Communications 14(3) proposals are being custom fitted with AI to suit our past buys, needs and inclinations. AI frameworks have moreover made a difference PR offices in making openings for clients with respect to gain media. AI Can Computerize Strategic Errands Regularly, PR experts spend much time on strategic and tedious assignments like planning, planning assembly notes, making and assembly due dates and taking after up with clients as well as influencers. Modest errands such as replying ordinary emails, checking the calendar and defining reports can eat up hours of profitable time. Individual association in these tasks leads to delays, mistakes and dissatisfaction. One senior PR supervisor said, 'The robotization itself will be a blend in so numerous diverse ways. Computerized overhaul of media records, planning overhauls of media rounds and numbers, will have a major affect on the working of the PR professional'.

AI help leads to robotization of ordinary and tedious errands; PR experts can spend more time on key and inventive exercises and be more profitable. AI Can Lead to Current and Pertinent Experiences With AI, it is simple to form sense and draw conclusions out of information coming from a assortment of sources like social media, site activity and other advanced touch focuses. PR experts can make utilize of these insights generated from the information to form educated and dynamic choices. AI frameworks can keep informing to the point, with thoughts based on examination of Enormous Information and other important patterns. A senior PR proficient said, 'Data crunching, information overhauling, follow-ups, drafting nitty gritty client needs and advance are major regions where AI will impact'. One of the mid-level PR specialists said, 'These AI apparatuses may be exceptionally valuable in examining, deciphering the different shapes of communications information that's required to serve the clients with valuable insights'. AI Can Offer assistance Recognize and

Tailor Content for Influencers Utilizing influencers is common these days, but distinguishing them and adjusting fabric for building lock in ment and dependability could be a gigantic challenge.

AI can help in deciding and locks in these influencers and significant partners. One of the senior-level PR specialists said, 'AI empowers PR experts to pitch more viably to the important influencers and particular writers. With AI, PR experts and clients can get the hang of the in general patterns and can select the correct influencers, at the proper time and on fitting channels'. AI Can Make Precise Personas With AI, it is simple to know the choices and inclinations of the buyers. AI these days is being utilized to create buyer personas conjointly to form locks in substance for these buyers. AI makes a difference to know the choices, buying designs, propensities, impacts, torment focuses and point of disappointments. With AI-based personas, companies can make and convey focused on messages. Panda et al. 203 An entry-level PR proficient said, 'The essential objective of PR is to coordinate the word to the target gathering of people, and AI frameworks can disentangle the advanced DNA and center characteristics of the target group'. AI frameworks can make offers and messages to suit the person client in genuine time. AI can be utilized to Distinguish and React to the Emergency AI-driven frameworks can track responses, estimations and comes about.

By checking and locks in in discussions, brands can resolve inquiries and issues of displeased partners and dodge any potential negative buzz or backfire. Negative messages these days spread like fierce blaze and can result in a full-blown emergency. With AI-powered machine included social tuning in, PR experts can get opportune cautions to bargain with a predicament. AI-powered gadgets can indeed react with pertinent messages to control the negative word of mouth and deflect a full-blown emergency. AI-Assisted Estimation and Announcing PR offices and clients can guarantee an exact examination of the scope with AI-assisted apparatuses. AI innovation has made a difference progress announcing with considerable proficiency as a result of its capacity to filter and dissect the social posts and news articles. Another master opined that 'AI will dissect campaigns in distant better; a much better; a higher; a stronger; an improved, a stronger way, ended up more focused on within the communication conjointly degree the affect of any campaign. PR individuals would do way better with AI devices than without it'. One of the senior PR experts said, 'Content filtration, post-campaign analysis, spotting potential patterns may be a few major pointers'. RQ3: How is the appropriation of AI getting to affect the work of PR experts and client–agency relationship? From the survey of articles and the examination of master, interviews taking after current and potential applications of AI within the PR industry risen.

The appropriation of AI in PR run from the substance creation to the computerization of monotonous errands as well as to administration of communications in times of emergency, and estimation of comes about. A senior-level PR master said, 'News following, campaign's efficiency investigation, substance unwavering quality, recognizable proof of patterns can be few of the potential applications'. Substance Creation AI can encourage PR offices and their clients with substance creation. AI can check different information sources and create tall quality and locks in white papers, case thinks about, information sheets and posts. Clients or PR offices can utilize AI-powered frameworks like Scribe, which may be a normal dialect preparing stage. Scholar can make substance on monetary comes about for touchy announcing. These AI-powered programs can recognize the fashion of the distributor and compose stories utilizing pertinent money related data rapidly and dependably. Such robotized profit stories to begin with showed up in 2014, and presently critical players such as Dow Jones, Bloomberg, Reuters and Related Press (AP) have either attempted or utilized AI for monetary 204 Diary of Inventive Communications 14(3) news coverage. With AI, AP's scope of profit discharges has gone up from a normal of 300 per quarter in 2014 to 4,700 within the to begin with quarter of 2018 (Ashwell, 2016).

Automation of Menial and Repetitive Tasks PR professionals waste much time on mundane daily tasks like updating calendars, scheduling meetings, preparing meeting agendas, and on follow-ups. PR executives can use the time saved from these day-to-day activities in conceptualizing campaigns. With AI tools, it is possible to manage and automate several menial and repetitive tasks. To quote a PR professional, 'With the help of AI tools, there can be a huge improvement in work towards tracking, analysing, and monitoring news, at initial stages'. AI assistants can manage calendar and schedule meetings. AI assistants can automatically share the blog post on social channels and save tweets mentioning a particular brand to a spreadsheet. AI can create efficiencies by connecting to various apps to make smart assistants even smarter. Manage PR Crisis Before the dawn of AI, PR teams were monitoring the web and maintaining dossiers, which were tedious and time-consuming. It was challenging to track negative comments and more challenging to predict the potential of a single negative feedback that could escalate into a full-blown PR crisis. A PR professional said, 'Crisis management should not be going to AI. It's a sensitive area to give away to technology. It is too sensitive of an issue for the client to be dealt without any human support or interventions'. Another senior PR professional opined, 'As far as crisis management is concerned, given how sensitive of an issue is, the spotting time and

analysis time can be reduced through AI, but again, human intervention is critical in this case'. A mid-level PR professional said, 'I don't think the clients will be comfortable with AI managing the crisis. The Indian market is too sensitive for a technological response'. In the era of AI, things are a lot easier. TensorFlow, Google's machine learning framework, allows the clients to predict the social media crisis with 80 to 90 per cent accuracy (Cohen, 2017). With this knowledge of crisis management, PR agencies can predict and start doing damage control. There are AI tools like PRISMA Crisis Intelligence that are available in the market for innovative PR crisis management (ClusterTech, n.d.).

These tools monitor conversations on social media and alert the managers in case of a negative mention. These AI-powered systems can track sentiments hidden within comments. These systems are even able to process complex texts in multiple languages. One of the PR professionals said, 'It can help in post-crisis management and evaluation. As to how our crisis management campaign worked, where all it lacked and what could have been done for better and more effective results'. Another senior-level PR expert said, 'Crisis management is still a very controversial area in PR. Only the high-level management gets involved in this, and with experts, because in this area, clients expect zero negligence and highest results. So I don't know how AI will help, but they can come with some tools for predicting a possible failure, that might be helpful. AI first needs to prove its credibility in various areas before it can be implemented in such sensitive areas'. A mid-level PR expert said, 'In crisis management, data crunching and analysis is a major task, so if that can be done through AI, then nothing like it. Analysis and identification of the target audience can be one of the areas in crisis management'. Panda et al. 205 Managing Agency-Client Relationship The client-agency relationship is integral for the success of any campaign. The client-agency relationship begins with the appointment of an agency for managing the PR function for the client. The agency is expected to provide services and meet the communication needs of the client. From the interviews with PR professionals, it has emerged that the client-agency relationship is primarily based on achieving transparency, trust, responsiveness, speed, agility and accuracy. Sincerity and honesty are essential for the success of such a relationship. For a client, it is necessary to disclose all information about the product and the organization. The bills and charges must be paid well in time. For maintaining a good relationship with the agency, the client should approve and monitor the progress on the proposals of the agency.

Overseeing the timeline and budget for a specific campaign is basic. The foremost vital portion is the real-time estimation and checking of the campaign for both the client and office. AI, with its special shrewdly capabilities, can help in overseeing the client-agency relationship. AI makes a difference in being straightforward in following and tending to the issues and issues rapidly and effortlessly. AI helps in collaboration between the office and client with clear lines of communication for open and controlled sharing of data between both the parties for vital arrangement. AI moreover makes a difference in adjusting all groups on the method, timings and basic viewpoints of extend administration. AI makes a difference in assembly due dates and building an compelling group culture for believe, dependability and openness. AI too helps in setting and assembly desires. AI is most valuable in conducting normal audits for distinguishing issues or powerless spots with subjective as well as quantitative inputs. AI can too help in executing key activity focuses and for crediting duty to group individuals as well as assembly due dates. A mid-level PR master said, 'It risen that agency-client relations will alter with the appropriation of AI and will be more productive, straightforward and responsive'. One of the entry-level PR experts said, 'Right presently I figure the clients are more interested in social media, which is totally diverse from AI as of presently. Clients still incline toward conventional PR, at slightest from the corporate point of see. Social media could be a isolated region of center for them'. Another senior-level PR proficient said, 'Client-agency connection, I feel, is continuously execution based. And moreover, the requirement of the client is additionally an awfully tricky commerce. Technology-oriented clients are actively keeping tabs on such developments. So some time recently they begin to form such requests, we are going need to be one step ahead of them in receiving AI'. A senior PR master said, 'We have come over instruments within the west, where the organization has set up a genuine interface where all the dialogs and errands are put up, and the groups from the agency and the groups from the clients can log into it to see the advance of results. Such AI instruments will give more straightforwardness and so much believe. Client-agency connection will for the most part gotten to be more straightforward and smoother, so yes, that can be one of the also points'. Robotized Estimation With AI arrangements capturing and visualizing information within the broad and comprehensive shape leads to speedier report-production prepare. Within the absence of exact estimation, clients and organizations both battle to demonstrate the affect of PR endeavors and ventures. A mid-level PR proficient said, 'AI frameworks are rapidly able to assess the assumptions of social posts and news articles of clients and their competitors, and indeed offer recommendations'. AI-powered examination from TrendKite offers experiences from over 4.7 million publications on the affect of PR, key message pull-through and opinion

investigation of information that was repetitive and time-consuming to 206 Diary of Creative Communications 14(3) analyse manually (TrendKite, n.d.).

AI frameworks can get it and evaluate PR's full impact on web activity to cloth the share of earned media impacts. AI-assisted PR attribution gives concrete, quantifiable execution measurements that offer assistance PR offices and clients. AI and News coverage AI is making swells among writers as programmed news composing and dispersion of the substance, without human intercession is happening. In 2016, the Norwegian News Office propelled a extend to produce robotized football news scope. AI in news coverage is quickly not as it were growing scope but moreover diminishing the time term of the full handle; the Related Press was able to extend the number of companies it detailed to from 300 to 4,000 utilizing AI to create reports on corporate profit inside a constrained sum of time (Ashwell, 2018). AI can immediately respond to real-time information with the traces of a story or any signal given to it. Reuters, one of the biggest news suppliers, has joined forces with Graphiq, a benefit that employments AI to construct and overhaul information visualizations (Reuters, 2016). AI facilitates neighborhood and territorial news companies to make compelling substance.

In future, it is conceivable that more unmistakable news organizations may lose group of onlookers share to a couple of energetic littler new agencies that can utilize AI successfully. Within the time of AI, PR agencies will have to be adjust to the unused flow to reply and meet the wants of the AI-powered news coverage. When a mid-level PR proficient was inquired approximately AI and news coverage, he said, 'Journalist, I feel will have a more troublesome time tolerating the AI angle as they still exceptionally, much into the composing and are utilized to ancient school ways of working, but clients, on the other hand, I feel will be exceptionally proactive and positive as their work will ideally be done speedier and with least human error'. One of the senior PR experts felt that 'Journalist will not acknowledge AI in the blink of an eye. Writers have major issues in trusting the PR proficient; trusting an AI instrument would be like anticipating something impossible'. Another PR proficient said, 'The connection between PR and writers has still been dubious. There are continuously fire and ice kind of relations; I do not think the writers will ever be rationally prepared to allow their work off to the AI'. A senior PR proficient said, 'Journalists will not be able to believe the substance made by AI. Not at slightest till the time a few major groundbreaking progression is unmistakable. This can be since AI can go off-base and will as it were translate on a data basis. They would incline toward a human instead of machine work since of the validity and enthusiastic remainder. Subsequently people cannot be replaced'.

Based on the reactions, it can be concluded that AI experts are cynical approximately the acknowledgment of AI by writers. RQ4: Does AI have the potential to be a key disturbance within the PR industry? To begin with, let us survey what disturbance implies. As per Christensen, Raynor, and McDonald (2015), 'Disruption depicts a prepare whereby a littler company with less assets can effectively challenge built up occupant businesses. When standard clients begin embracing the entrants' offerings in volume, disturbance has occurred'. In this case, for AI to be a disturbance, it is fundamental that the larger part of the PR offices and clients are receiving AI for PR forms, capacities and arrangements. There was a blended reaction to this address amid the interviews. Most of the experts felt that AI is still in its starting development and application stages within the PR industry. Commenting on AI as a vital disturbance is still as well early. But they are positive approximately the prospects of a littler office fueled with AI disturbing major organizations and systems. Panda et al. 207 One of the specialists said, 'There would be a major disturbance in substance advancement, emergency communications and learning the perspective of professionals'. Another master said, 'Every advancement could be a disturbance and causes a move, some place or other. So will be AI, but whether it is in a positive or in a negative move, we may have to hold up and watch'. By and large based on the reactions, it can be concluded that AI has the potential to be a key disturbance without further ado.

IMPLEMENTATION ISSUES

AI could be a key driver and alter operator within the PR industry. Innovation companies like Google, Smaller scale delicate, Amazon and Apple have coordinates AI as an insights layer into their items as well as frameworks. AI-driven frameworks are keen and can open the control of all the social media and other information. Depending on the require, the PR offices can utilize AI for different capacities like mining social information, overseeing media records and influencer database, to lock in influencers, make substance, oversee emergency, and have a driving notoriety. One mid-level PR proficient said, 'Costs of execution will be tall, but so will be the esteem included as a result of usage. I do not think each PR office will be able to manage it'. Another proficient said, 'Cost will be tall but once more, the organization needs, and client profile will direct the appropriation decision'. A senior PR master said, 'Introduction of anything modern in any division, is exorbitant, but we got to focus on the greater picture than fair establishment charges'. From the audit, it has developed that

offices and clients ought to watch out of the taking after usage issues whereas receiving AI-driven frameworks for fruitful integration (Marvin, 2018).

- PR agencies should first develop familiarity with the current AI solutions and developments in the market.
- PR experts within the organization ought to familiarize themselves with fundamental concepts of AI.
- PR organizations ought to make a advanced spine as a base for AI-driven framework.
- PR offices ought to be clear almost the errands that the AI framework can mechanize.
- PR offices ought to be mindful of the accessible AI capabilities and their impact on the existing PR administrations, inside forms and frameworks.
- PR office ought to calculate the potential commerce and budgetary affect of the AI framework.
- The office must include the supervisors and top-level officials in noteworthy AI-related appropriation choices.
- The PR organization ought to evaluate the existing capability of a innovation and commerce handle point some time recently receiving and executing an AI framework.
- Some time recently going for a full-scale AI execution exertion, the PR office ought to attempt to set up a pilot venture with a interview with outside experts.
- The office ought to clean the existing information. A little sum of current information can be utilized for preparing the unused AI framework.
- PR organization ought to orchestrate for neighborhood, quick and optimized capacity amid AI framework plan.
- The PR office ought to utilize the AI framework for every day and schedule assignments.
- The organization ought to keep up a adjust between the AI frameworks operational productivity and imaginative potential of people.
- Office ought to construct adaptability within the unused AI-based framework for future equipment and program changes. 208 Diary of Imaginative Communications 14(3)
- PR organization ought to center on preparing and reskilling the existing workers for making full utilize of the modern AI-powered frameworks.
- PR offices ought to guarantee adherence to the protection and security standards for dealing with individual information as per the law of the arrive.

DISCUSSION

The unused wave of AI innovation is anticipated to disturb numerous basic businesses, counting PR. PR experts and specialists are still in a predicament with different perspectives of AI. Are they confronted with a few questions like will AI supplant people in overseeing press relations? Will AI framework make substance from scratch? Will the modern innovation distinguish and associated with the leading target gatherings of people? How quick can AI anticipate PR emergency? How distant will AI go with respect to customization and upkeep of relations with key partners? Will the stages upheld by AI have the capacity to handle a full-blown emergency? Can the littler PR organizations use AI to adjust, develop and disturb the more unmistakable players? From the exploratory investigate, it has developed that the larger part of the PR experts are mindful and positive approximately the application of AI within the PR industry in common. Within the setting of the PR industry, AI application is still in its early stage. Lion's share of PR experts personally felt that they are very familiar and comfortable with the unused advanced innovation, and this can be in line with the discoveries of past considers. Still, few of the experts are doubtful around the appropriation of AI in the PR industry. From the comes about, it rises that the PR experts are gradually taking steps towards the appropriation of the most recent innovation. With AI, PR supervisors can make choices based on information and experiences. AI contains a imperative part to play in all the stages of a PR campaign beginning from gathering bits of knowledge, creating substance, selecting Panda et al. 209 channels, influencers and dissemination of substance. AI has an basic part to play in news following, campaign examination, reality checking and recognizable proof of patterns as vital applications. In times of emergency, AI can offer assistance with information crunching and investigation.

Assist, AI can offer assistance within the investigation and distinguishing proof of the target audience and make the complete handle of emergency administration more proficient, successful and convenient. Client–agency relationship will be emphatically affected by AI selection. AI devices will bring straightforwardness and

believe. With AI, client–agency relationship is anticipated to be more transparent and smoother. AI-assisted PR estimation gives concrete, quantifiable execution measurements, which is able offer assistance and help both clients and offices. It is curiously to note that writers are not exceptionally eager around the utilize of AI in their calling. Based on the reactions, it is reasonable to conclude that AI can be a vital disturbance in the blink of an eye.

CONTRIBUTION TO THEORY AND PRACTICE

Investigate ought to open bearings for hypothesis improvement and offer rules for professionals. Earlier inquire about has focussed on the application of the Web, computerized, social and versatile within the PR profession and PR industry. There's a deficiency of investigate within the field of AI application in PR. This exploratory inquire about opens modern bearings for insightful inquire about. There's a hole that this research has endeavored to satisfy by investigating the AI applications and their affect within the PR industry. This inquire about opens up unused measurements for experimental investigate related to the application and affect of AI within the PR industry. Till date, as it were exploratory inquire about has been worn out the field of AI application within the PR industry or calling. Comes about from this consider illustrate the benefits related with AI application in PR. Various applications of AI within the PR field have been discussed within the article. Advance, show improvement and testing can be done utilizing experimental industry. AI ought to be utilized deliberately to meet the objectives of PR experts in keeping up a positive relationship with publics within the competitive commercial center. This article has too investigated the potential of AI as a key disturbance and how AI will affect the client–agency relationship within the PR calling and open a modern range for investigate. Analysts can see at the potential impact of AI adoption within the client–agency relationship. In future, researchers can further re-evaluate the potential of AI as a potential key disturbance within the PR industry.

As a commitment to PR hone and industry, this consider opens up roads for PR experts and offices that need to actualize AI to meet the client needs. These organizations can anticipate an increment in ROI, expanded changes, expanded incomes, proficient and faster detailing and exact estimation. The PR experts can spare time went through on modest assignments and utilize them on imaginative conceptualizations of the campaigns. AI saves the organizations with a part of time and assets that can be utilized in building more imaginative, imaginative and customized PR arrangements. This inquire about too talks about the issues that ought to be taken care of amid usage of AI-driven frameworks for effective integration with existing frameworks. This investigate highlights the abilities required by existing workers of PR organizations that can be obtained through learning and advancement or a broader understanding of AI-based cognitive machines. It is significant for workers to realize their potential for up-skilling for the current assignments within the AI age.

FUTURE SCOPE

A few of the dim ranges within the application and selection of AI and the PR industry are however to be revealed. It is anticipated that modern players with imaginative innovation will come up with arrangements that will make new norms and pathways within the PR industry. These unused players with newly discovered adaptability, adaptiveness and contextualization can change the existing PR hones. The rise of AI within the PR 210 Diary of Creative Communications 14(3) industry is guaranteeing the lessening of blunders, which may be ascribed to people, which in turn increments the productivity and adequacy of the work done. AI frameworks with calculations can rapidly examine enormous information and make substance. Specialists think that people and AI within the working environment will coexist. The collaboration between people and AI will lead to more astute, imaginative and imaginative work over time. Information and human supervision are both pertinent for an AI framework for learning, adjustment and proficiency. At long last, to grasp AI's plausibility, it is imperative to get it what AI must offer as of now within the PR industry and how it can be encourage improved for more basic errands without any significant breach of believe and protection. The solid advantageous interaction of human–AI in the PR industry is fundamental for both to coexist effectively.

INNOVATIVE APPLICATIONS OF AI IN PR AGENCIES:

Information Examination:

AI apparatuses can analyze information from different sources to distinguish patterns and designs that can be utilized to create PR methodologies. For occasion, AI-powered instruments can offer assistance PR organizations screen social media discussions to get it open assumption around a specific brand or subject.

Media Observing

PR organizations can utilize AI-powered apparatuses to screen media outlets and recognize potential media scope openings. These devices can moreover offer assistance PR experts track media scope and evaluate the viability of their PR campaigns.

Chatbots: PR agencies can use AI-powered chatbots to engage with their audience and answer their queries. Chatbots can provide instant responses and help PR agencies improve their customer service.

Personalization: AI tools can help PR agencies personalize their messages for different audiences. By analyzing data, PR agencies can create targeted messages that resonate with their target audience.

CHALLENGES AND OPPORTUNITIES

Finding reasonable AI ability with AI compatibility may be a gigantic challenge for PR offices. It is challenging to discover experts with progressed programming and expository abilities having PR space information. Finding talent with both specialized and administration aptitudes may be a gigantic challenge in itself. It is troublesome for PR organizations to degree and foresee the returns on investment (ROI) in AI. Since the ROI on AI leads to person picks up within the long run, it is troublesome to survey the short-term affect on productivity. Beginning buy and support of an AI arrangement at times are costly and broad. AI needs adequate information to choose up on designs, to memorize from them and optimize the creating framework in like manner. Without the accessibility of enormous information, the capacity of AI is constrained and isn't entirely reliable. Need of structured data may be a noteworthy challenge within the advancement and usage of an AI framework. AI moreover has trouble with unstructured information. Organized and organized comes about of sports diversions or profit information can be effectively deciphered into articles by utilizing AI. Need of understanding of the state-of-the-art AI systems and interoperability with different clients are too two of the preventions. Confirming the genuineness of information is additionally a impressive challenge.

AI cannot get it whether the input it gotten is exact or wrong. On the off chance that AI gets fake or incorrect information, the comparing yield will moreover be untrue. With AI, distributors can incorporate metadata and references for checking the realities and sources. A mid-level PR proficient said, 'Most of the PR offices and their clients are still doubtful around the unwavering quality and are not able to believe the standalone AI systems'. With AI ascribing and characterizing copyright and reasonable utilize of the substance created may moreover be a challenge. AI moreover possibly postures a modern strife in cases where learning is from creative works such as articles, works of art or music having individual rights proprietors.

Each collaboration presents its possess set of challenges and openings. This segment distinguishes potential obstacles within the integration of AI into PR workflows, such as moral contemplations, predispositions in calculations, and the require for human oversight. At the same time, it investigates the openings for development, productivity picks up, and made strides decision-making coming about from this collaboration.

CONCLUSION

In conclusion, this ask approximately focuses to contribute to the understanding of the complicated relationship between PR specialists and AI systems inside the space of communication strategies. By examining the stream, challenges, and openings, this consider looks for to supply encounters into the progressing scene of AI-enhanced PR sharpens. Joining AI into the Indian PR promote has brought essential movements and openings. AI propels presents advanced data examination, personalized outreach, emergency organization, and taken a toll and time yield. Be that because it may, tending to challenges such as data assurance, social sensitivities, and inclinations is noteworthy while keeping up ethical measures. Striking a alter between leveraging AI's benefit and keeping up moral sharpens is basic for PR experts to examine the progressing scene effectively. By getting a handle on AI capably and handling its control, Indian PR experts can drive doable communication approach, upgrade gathering of individuals commitment, and accomplish shocking triumph inside the incredible and competitive PR advance.

Key Questions

- What are your views on the use of AI in PR?
- Tell us how AI is going to impact the mundane activities like creation of dossiers, media lists in the PR profession.
- Do you think AI use will simplify the work of a PR professional?
- AI today, has been identified as a powerful tool, how well do you feel it will gel up with the PR industry's work processes?
- Tell us about how the client's requirements are being met in terms of reaching the target audience in a specific campaign with the help of AI.
- Tell us about the likelihood of AI adoption in the PR industry.
- Tell us about the potential areas where AI is going to impact in the PR industry.

- With AI use at the workplace, tell us about the significant shifts in work profiles that are expected shortly (e.g., as artificial intelligence is capable of generating content).
- Do you think AI will replace humans entirely in a PR agency?
- Tell us about the potential work areas where AI is going to impact work in a PR agency.
- Tell us in detail how AI is going to impact the roles of PR professionals shortly.
- Tell us how PR professionals are responding to AI adoption in PR agencies.
- Tell us about the challenges that clients and agencies will face in adapting to learning due to the adoption of AI?
- How open or receptive will the Journalists or clients will be to AI mediated communication?
- How is AI going to impact the agency-client relationship?
- Tell us about the significant challenges like implementation cost and reception during AI adoption.
- Tell us about the role AI will play in managing the PR crisis

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REVIEW OF UTILIZE DATA SCIENCE TOOLS FOR SMALL BUSINESS GROWTH

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ABSTRACT

Running any size business can be challenging in the current business environment. However, running a small business can seem to present an endless array of difficulties, from determining whether to invest in an automated receptionist to putting cybersecurity best practices into action.

our objective is ultimate our business Progress. The vast amount of data called Big Data you gather and utilize every day is one of the main components of your business plan that might spur growth. A large portion of this data is provided in raw format, so you'll need a method for gathering, storing, transforming, and analyzing it. Here I introduce to data science, a very useful field that helps you grow by giving you insightful knowledge about data that you can use to guide your strategy.

Today's scenario many companies collect & store massive amount of data, the need of data scientist to analyze and make sense of that data is only growing.

Data scientist use- Statistical analysis, machine learning, Data visualization tools to help businesses make informed decision based on their data.

Keyword – Big Data, Data visualization, Data analysis, Decision making, Business growth, Data Science tools, R, Python, BI.



Figure: 1

INTRODUCTION -**What is Data Science Technique key points**

Concept - is Analysing Data and Machine learning.

Responsibility- is Understand pattern within data and make decision.

Tools- SAS, R, Python used to write scripts & program that process analyse and visualize data.

Industry- Sales, image recognition, advertisement, risk analytics etc.

To make sense of the massive amounts of data that your company and its clients produce, data science makes use of various statistics, scientific procedures, methodologies, and algorithms.

Your organization can use that data in any sector, and data scientists work to provide you with various tools and solutions to work with that data. Different types of data science exist some we might wish to employ right away, while others would be more beneficial down the road. Nowadays, the majority of the data you get is raw and comes in big, unmanageable data volumes. Converting this unstructured data into knowledge that can be used to guide company strategy and decision-making is a part of data science's job, especially in the field of business intelligence. Accessing and understanding data gets simpler once it is grouped into datasets. You may use that data in a variety of ways to increase the effectiveness of your operations thanks to data science.

Data Science Help Small Business Grow

Tools Used for Data Scientist – Statistical analysis, machine learning, Data visualization tools

Programming like – Python & R

Machine learning framework – Tensorflow & Pytorch used for Data scientists. (Provide set of libraries and APIS & build and train machine learning models.)

Tableau – Data visualization (Create interactive Dashboard and charts just with a few clicks.)

Business Intelligence

BI is one of the main applications of data science for a lot of companies. As previously said, the majority of the data you get is unusable and comes in raw format.

Data scientists assist in the design of procedures and systems that help you store, organize, and modify. we can use different data in different ways within BI. One alternative approach to outperform competitors is to examine their data and devise strategies for doing so. Alternatively, you may examine trends in your own sales to pinpoint weak places or times of high demand.

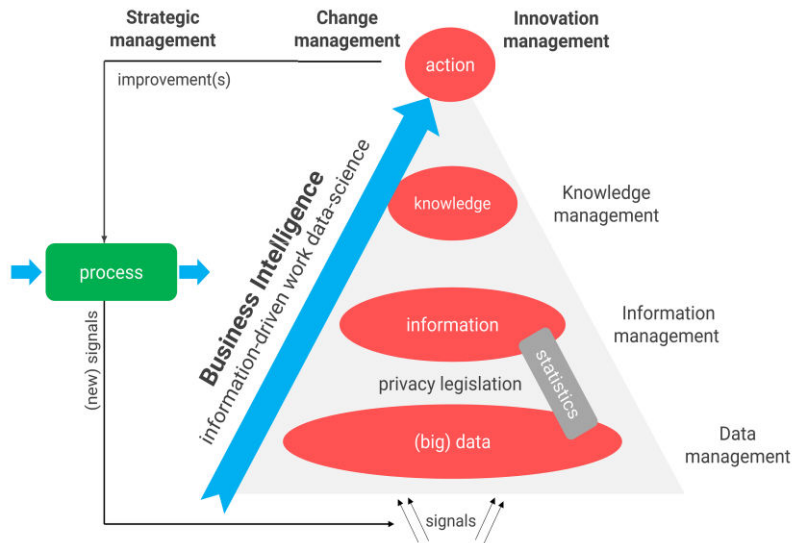


Figure: 2

Improved Efficiency

Costs and, eventually, profitability can be greatly impacted by operational efficiency. You can monitor many company sectors to maximize efficiency through scientific data processing.

This is particularly helpful for manufacturing companies, since it allows workflows to be optimized and obsolete processes to be highlighted. However, data science can be useful in many areas than merely manufacturing. Additionally, it may be used to track and evaluate performance. Here we monitor aspects like job volume and staff efficiency with statistical data, and you can scale reactively without sacrificing the quality of the work.

Increased Security

Protecting all of your data—not just sensitive consumer information—requires cybersecurity. This approach, when applied to your entire network, tracks and monitors data to find weaknesses and evaluate your capabilities, assisting you in putting an efficient cybersecurity.

Trust is generated by effective security, and trust is necessary for both business continuity and customer service. Utilizing machine learning algorithms and behavioural analytics.

Improved Customer Experience

Reduced expenses for acquiring new customers and increased prospects for expansion are the results of higher retention rates. Thus, what role can data science play in enhancing the consumer. You can enhance each stage of the customer journey by gathering and analyzing consumer data. Analytics may assist you, for instance, in determining the pain issues that might be keeping a prospective client from turning into a paying one. You can also use data science to determine the reason behind high cart abandonment rates.

AREAS OF DATA SCIENCE TO CONSIDER

Cloud Computing and Databases

Having a data storage plan is crucial since there is a constant increase in the amount of data being generated and saved. These days, the cloud houses a large portion of that storage. Utilizing data science, you can create multi-dimensional data models like star schema model.

This kind of organization helps decision makers access and comprehend the data with ease. Additionally, it implies that any analytics you use will be more effective business decision.

Data Engineering- Data engineers create a solution that satisfies your requirements while integrating pertinent ML and AI components. It would be impossible to complete every step of your data process manually without these platforms, along with the ML and AI components. Algorithms that concentrate on gathering and evaluating the data that truly matters to you might be created by data engineers.

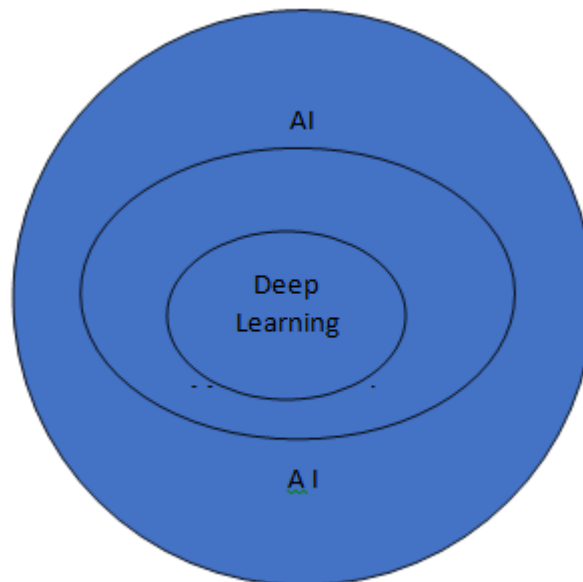


Figure: 3

Data scientists and engineers used all different tools for taking decision for organization. They used-

- Statistical analysis
- Machine learning
- Data visualization
- Data cleaning
- Scientific computing etc.

MIS and DSS

According to Davis and Olson, "an integrated user-machine system designed for providing information to support operational control, management control, and decision-making function. Top-notch decision support systems offer both high-level overviews and in-depth analyses. A particular kind of computerized information system called a "decision support system" (DSS) helps organizations and businesses make decisions. An interactive software-based system, when appropriately developed, can assist decision makers in gathering relevant information from documents, raw data, firsthand experience, and/or business models.

CONCLUSION

Given that data science is one of the most in-demand professions today, its future is undoubtedly bright. Before making an investment, today's businesses seek to learn more about the markets and goods. Today's departments are ravenous for analytics pertaining to the massive amounts of data kept on data servers. Because there is a severe shortage of data scientists and a great demand for them, the supply and demand model are currently completely out of balance. These days, every business wants to hire these skilled individuals who can help them advance more quickly and effectively. Review of all available data analyzed, visualize the data and utilize data science tools for growing small level business to large scale business.

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BUSINESS TO BUSINESS MARKETS AND MARKETING

¹S. Soundarya and ²Dr. P. Tamilselvan¹Ph.D Research Scholar and ²Assistant Professor, Sri Vasavi College of Erode**ABSTRACT**

Business-to-business (B2B) marketing refers to the activities and strategies that businesses use to promote and sell their products or services to other businesses. In contrast to business-to-consumer (B2C) marketing, where companies target individual consumers, B2B marketing focuses on reaching and engaging with other businesses as customers. In a broad sense, B2B marketing content tends to be more informational and straightforward than B2C. This is because business purchase decisions, in comparison to those of consumers, are based more on bottom-line revenue impact. Return on investment (ROI) is rarely a consideration for the everyday person—at least in a monetary sense—but it's a primary focus for corporate decision makers. In the modern environment, B2B marketers often sell to buying committees with various key stakeholders. This makes for a complex and sometimes challenging landscape, but as data sources become more robust and accurate, B2B marketers' ability to map out committees and reach buyers with relevant, personalized information has greatly improved. The goal of B2B marketing is to attract and convert leads into customers. In the digital age, this means that need to be able to capture a prospect's attention quickly and keep it. This can be done through educational content like white papers or value-driven blog posts.

Keywords: Business, strategies, customers, consumers.

INTRODUCTION

B2B transactions are also the backbone of the automobile industry. Many vehicle components are manufactured independently, and auto manufacturers purchase these parts to assemble automobiles. Tires, batteries, electronics, hoses and door locks, for example, are usually manufactured by various companies and sold directly to automobile manufacturers. When selling to other companies, B2B marketing involves considerations and best practices that differ from those associated with marketing to individual consumers (B2C). For example, B2B customers generally look for products and services that contribute to a healthier bottom line while avoiding investments with low chances of return. Considering that businesses may be responsible for payroll and other large business expenses, there may be more at stake for B2B than B2C customers, so when marketing, want to bear this difference in mind. Lying behind every consumer purchase in a modern economy there is a network of business-to-business transactions. The hair stylist who provides the client with a new look uses hair products that were manufactured by a cosmetics company from materials bought from chemical manufacturers, by equipment that was manufactured by an electrical products manufacturer using components purchased from a range of electrical engineering companies, and then arranges the client's next appointment using the salon's Wi-Fi network that was designed and installed by a computer systems firm around equipment bought from various IT vendors.

Components of the Nature of Business

The business world is vast, but every business revolves around specific fundamental components at its core. These components come together to define a business's structure, purpose, and functions. Here's a deeper dive into these integral elements

Purpose: Every business starts with a purpose. It's the foundation, answering the question: "Why does this entity exist?" For some businesses, the objective is to sell products; for others, it's about providing specialised services, and for many, it's about solving specific market problems. This purpose becomes the North Star, guiding every business activity and decision.

Activities: Just like we engage in daily tasks and routines, businesses have their set of operations. This could range from designing products, sourcing materials, and manufacturing to even marketing and sales. These activities define what the business does daily to fulfil its purpose.

Scale: The size or scale of a business can vary. Some operate within small local communities – think of the mom-and-pop shops. Others are sprawling enterprises with a footprint that spans across countries or even continents. The scale dictates the reach, operations, and, often, the complexities a business might face.

Stakeholders: Businesses don't operate in isolation. They involve various stakeholders, including owners, employees, customers, suppliers, and even the communities they operate in. Each stakeholder has a role, an interest, and an expectation from the business.

Economic Contribution: A business isn't just about its owners or employees. It plays a pivotal role in the broader economy. Through its operations, it contributes via job creation, taxes, boosting trade, and even fostering innovation.

Risks & Challenges: The business landscape is dynamic. External factors like competition, market trends, regulations, and even unforeseen events can pose challenges. Recognising and navigating these risks is vital for the business's sustainability and growth.

Legal Structure: Businesses operate within a legal framework. Depending on the region or country, various legal structures are available, such as sole proprietorships, partnerships, or corporations. This structure defines legal responsibilities, benefits, and limitations a business has.

To sum it up, the nature of business is a blend of its purpose, daily functions, size, interconnected relationships, contribution to the economy, potential challenges, and legal standing. Each component interplays with the other, forming the intricate mosaic of what we know as 'business'.

The Nature of B2B Marketing

1. **Relationship-Centric:** B2B marketing is inherently relationship-centric. Unlike B2C marketing, where transactions can be one-off, B2B transactions often involve long-term partnerships and collaborations. These relationships are built on trust, reliability, and mutual benefit. Effective B2B marketers understand the importance of cultivating strong connections with their clients and partners.

2. **Targeted and Niche:** B2B marketing is highly targeted and niche-specific. Instead of appealing to a broad consumer base, B2B marketers focus on identifying and targeting specific industries, companies, and decision-makers. The goal is to provide tailored solutions that address the unique challenges and needs of each client.

3. **Data-Driven:** In the digital age, data is at the heart of B2B marketing. Businesses rely on data analytics, market research, and customer insights to make informed decisions. Data-driven marketing allows companies to personalize their messaging, optimize campaigns, and measure ROI effectively.

4. **Complex Buying Process:** B2B purchases often involve a complex buying process. Decision-making units within organizations can be extensive, consisting of multiple stakeholders, each with their own priorities and concerns. B2B marketers must navigate this complexity by delivering value propositions that resonate with various decision-makers.

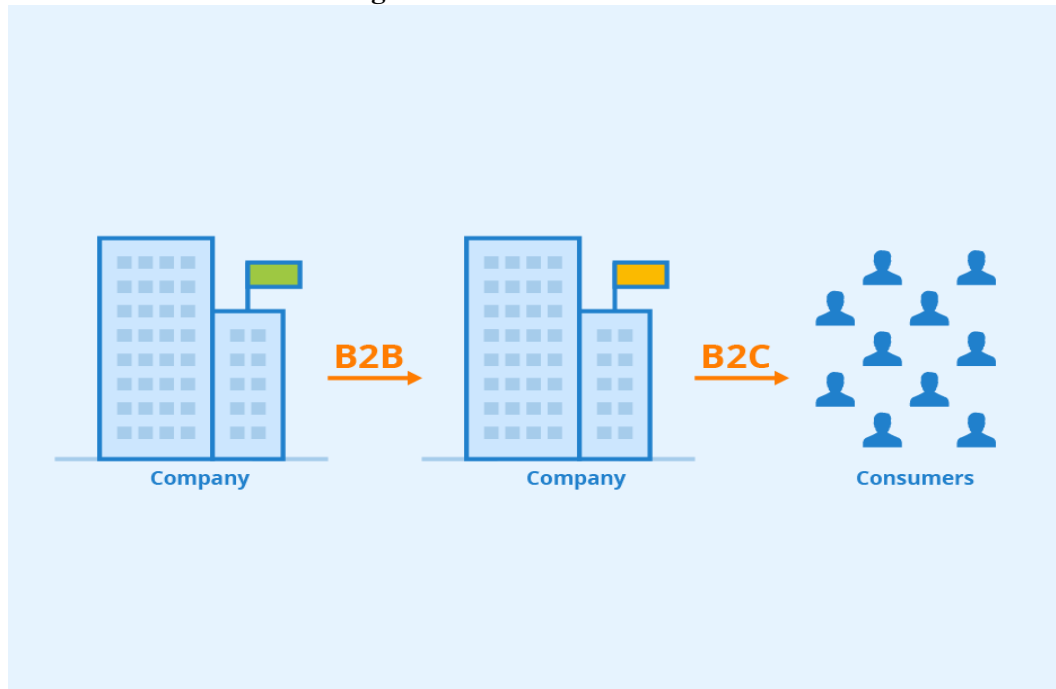
Objective

- To study the business-to-business market brand and positioning.
- To examine the market expansion.

Statement of the Problem

Lead generation challenges generating high-quality leads can be difficult in the B2B market, especially when targeting specific industries or niches. Companies may struggle to identify and reach potential business customers effectively. Long Sales Cycles B2B sales cycles are often longer and more complex than those in the consumer market. Companies may encounter challenges in moving prospects through the sales funnel and closing deals within a reasonable timeframe. Building brand awareness and establishing a strong brand presence within the industry can be challenging for B2B companies, particularly smaller or newer businesses competing against established players. Educating Customers many B2B products and services are complex, requiring education and explanation to potential customers. Companies may struggle to effectively communicate the value proposition and benefits of their offerings. Competitive Pressure the B2B market is often highly competitive, with multiple vendors vying for the same customers. Companies may face challenges in differentiating themselves from competitors and demonstrating their unique value proposition.

Fig:1 Demand for B2B Products



Source: [Seobility.net/en/wiki/B2B_Marketing](https://seobility.net/en/wiki/B2B_Marketing)

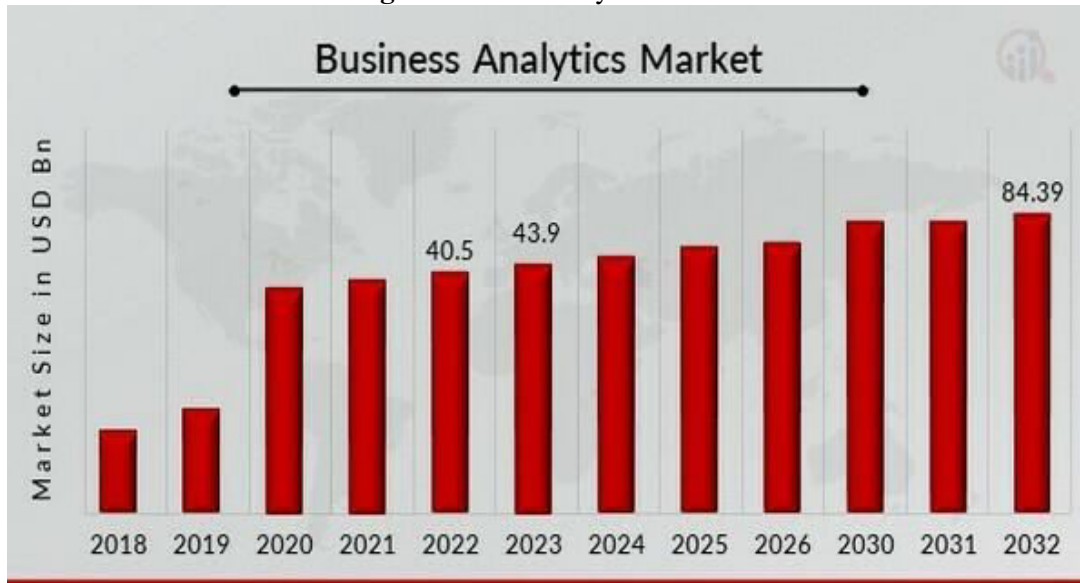
Figure 1 shows that the demand for business to business products. Even though they don't sell their products to consumers like B2B sellers carefully watch general economic conditions to anticipate consumer buying patterns. The firms do so because the demand for business products is based on derived demand. Derived demand is demand that springs from, or is derived from, a source other than the primary buyer of a product. When it comes to B2B sales, that source is consumers. If consumers aren't demanding the products produced by businesses, the firms that supply products to these businesses are in big trouble.

Fluctuating demand is another characteristic of B2B markets: a small change in demand by consumers can have a big effect throughout the chain of businesses that supply all the goods and services that produce it. Often, a bullwhip type of effect occurs. Essentially, consumers are the handle and businesses along the chain compose the whip hence the need to keep tabs on end consumers. They are a powerful purchasing force.

Cisco makes routers, which are specialized computers that enable computer networks to work. If Google uses five hundred routers and replaces 10 percent of them each year, that means Google usually buys fifty routers in a given year. What happens if consumer demand for the Internet falls by 10 percent? Then Google needs only 450 routers. Google's demand for Cisco's routers therefore becomes zero. Suppose the following year the demand for the Internet returns to normal. Google now needs to replace the fifty routers it didn't buy in the first year plus the fifty it needs to replace in the second year. So in year two, Cisco's sales go from zero to a hundred, or twice normal. Thus Cisco experiences a bullwhip effect, whereas Google's sales vary only by 10 percent.

Because consumers are such a powerful force, some companies go so far as to try to influence their B2B sales by directly influencing consumers even though they don't sell their products to them. Intel is a classic case. Really care what sort of micro processing chip gets built into computer? Intel would like to, which is why it has run a long series of commercials on TV to think about what chip is inside computer. The following video clip shows how they've continued to promote "Intel Inside" even though their actual product has changed. The commercial isn't likely to persuade a computer manufacturer to buy Intel's chips. But the manufacturer might be persuaded to buy them if it's important to derived demand is also the reason Intel demands that the buyers of its chips put a little "Intel Inside" sticker on each computer made get to know Intel and demand its products.

Fig:2 Business Analytics Market



Source: Market researchfuture.com

Fig: 2 Shows that the business analytics market size was valued at USD 40.5 Billion in 2022. The business analytics industry is projected to grow from USD 43.9 Billion in 2023 to USD 84.39 Billion by 2032, exhibiting a compound annual growth rate (CAGR) of 8.50% during the forecast period (2023 - 2032). The increased adoption of business analytics software by various companies, increasing fundamental changes in the global business environment, and high investment costs to implement solutions are the key market drivers for expanding market growth.

Fig: 3 Shows that the business to business Characteristics

Characteristic	Example
<ul style="list-style-type: none"> • Business market customers are comprised of commercial enterprises, institutions, and governments. 	<ul style="list-style-type: none"> • Among Dell’s customers are Boeing, Arizona State University, and numerous state and local government units.
<ul style="list-style-type: none"> • A single purchase by a business customer is far larger than that of an individual consumer. 	<ul style="list-style-type: none"> • An individual may buy one unit of a software package upgrade from Microsoft while Citigroup purchases 10,000.
<ul style="list-style-type: none"> • The demand for industrial products is derived from the ultimate demand for consumer products. 	<ul style="list-style-type: none"> • New home purchases stimulate the demand for carpeting, appliances, cabinets, lumber, and a wealth of other products.
<ul style="list-style-type: none"> • Relationships between business marketers tend to be close and enduring. 	<ul style="list-style-type: none"> • IBM’s relationship with some key customers spans decades.
<ul style="list-style-type: none"> • Buying decisions by business customers often involve multiple buying influences rather than a single decision maker. 	<ul style="list-style-type: none"> • A cross-functional team at Procter & Gamble (P&G) evaluates alternative laptop PCs and selects Hewlett-Packard.
<ul style="list-style-type: none"> • While serving different types of customers, business marketers and consumer-goods 	<ul style="list-style-type: none"> • Job titles include marketing manager, product manager, sales manager, account manager.

Fig:3 Shows that the business to business Characteristics Having established that it is not the nature of the product that is bought and sold that differentiates business markets from consumer markets, we move on to examine what are regarded as the defining characteristics of business markets. Many authors have sought to identify the dimensions by which business markets can be distinguished from consumer markets, and then the

specific characteristics of business markets and consumer markets on each of these dimensions. Table 1.2 provides a synthesis of these dimensions and characteristics. The table is organized into three columns. The first column identifies the dimension against which business and consumer markets are thought to differ, the second column provides the characteristic expected of a business market, and the third column the characteristic expected of a consumer market.

CONCLUSION

The business-to-business (B2B) market presents unique challenges and opportunities for companies seeking to market their products or services to other businesses. Unlike the consumer market, B2B transactions involve selling to organizations rather than individual consumers, leading to differences in customer behaviour, buying processes, and marketing strategies. Successful B2B marketing requires a deep understanding of the target audience, including their needs, pain points, and decision-making processes. Companies must focus on building strong relationships, establishing credibility, and demonstrating value to potential business customers. This often involves providing educational content, thought leadership, and personalized solutions tailored to the specific requirements of each client. Moreover, effective B2B marketing necessitates alignment between sales and marketing teams, clear communication, and a commitment to delivering exceptional customer experiences. Companies must continuously adapt their strategies to evolving market dynamics, technological advancements, and changing customer preferences to remain competitive in the B2B landscape. By addressing the unique challenges and leveraging the opportunities presented by the B2B market, businesses can drive growth, build lasting partnerships, and achieve success in serving the needs of other organizations.

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EFFECT OF GEOPOLITICAL REORDERING ON INDIAN DEMOCRACY**¹Shuchita Gupta and ²Dr. Uma Gulati**¹Concept Accumulator in Amass Weir, New Delhi²Professor, Institute of Technology & Science, Mohan Nagar, Ghaziabad**ABSTRACT**

The term "Geo-politics" is not new. When we talk about the term "Geo-politics," it includes various dimensions of a nation like geography, its resources, people, economics, and politics of one country and its relationship with one or more nations.

Over the years, nations have connected using communications, trade, travel, and points of concern like climate change, drought, technology, space, etc., which has brought the major players, called "politicians/leaders of the nation," many times to one platform.

With the present position of the world, when significant countries are at war and many countries are under threat of civil war, and with elections in almost 70 nations in the year 2024, it is crucial to see the geo-political effect on Indian democracy, too.

India has played an impactful role in the world over the years. In the past, India took a strong stance in the geo-political order of the world. As a nation, India remained powerful enough to save and shake many of its neighbouring countries, too.

However, with so many unprecedented situations around the world today, it is important to observe many concepts related to geo-political re-ordering. The present study understands the following:

- 1) What is Geo-political order and re-order?*
- 2) Who controls this Geo-political ordering, and how is this control managed?*
- 3) What effects is the Geo-politics of the world creating in India?*

Keywords: Geopolitical reordering, India, Indian democracy, Nations, Communications, Resources

INTRODUCTION

Our planet Earth has been evolving over the years, and beautiful facts about our planet are still changing geographically. The GEO studies of scientists mention that shifts in continents happen timely, and the structure of Earth what we see today – the continents, the water bodies, the poles of Earth, the gravitational pull, the vegetation, the natural resources, the climate, the animal, aquatic and the aerial life are not same everywhere. The natural phenomenon of change is still going on.

When the evolution of human beings happened on this evolving Earth, and with the human's in-person developmental phases like hunger, five senses, knowledge, awareness, speech, and thinking process, these all and many other developments happened gradually. With the logical and reasoning developments within human beings, slowly over the years, understanding of "my region – your region, my kingdom – your kingdom – Me and you; Us and Them" came into existence. While one-world expectations appear at the end of major conflicts, the tendency to think in terms of two worlds recurs throughout human history (Huntington, 1996).

In Geopolitics, countries maintain many entities like – armies, conduct diplomacy, negotiate treaties, fight wars, control international organizations, influence, and, in considerable measures, shape production and commerce.

Contrasting the yester and today's eras: In the olden days, kings ruled; today, we have ministers representing the "country." Earlier also, wars used to take place to occupy land and resources, and it is still happening when we are in the "21st Century". In older years, the kings and their kingdoms financially grew from a barter system to a metallic currency system; today, we all see notes and coins from every nation.

With natural irrigation systems, many civilizations grew near the rivers, and even to date, we see many villages and towns of the countries that are still civilized or have agriculture near the rivers or lakes. Trade was there then and is there now. The only thing that changed is the human brain, knowledge, awareness, and the hunger to be innovative for their own benefit and for social cause. These developments brought the world to the "Industrial Revolution," which stood as a transitional phase.

The Industrial Revolution began in Great Britain from the 18th to the early 19th century. This era was a period of machine innovations. This industrial revolution, or the machine era, led to two major wars: World War 1, 1914 to 1918, and World War 2, 1939 to 1945 (Chen, 2024).

Interestingly, the era of the massacre was there earlier also. Still, with the Industrial Revolution, the destruction and killing grew, and today, what we are watching and hearing is all thanks to the "machine revolution."

Rudolf Kjellén, a Swedish political scientist, fashioned the "GEOGRAPHY" + "POLITICS" = "GeoPolitics" term after the end of World War 2 and coined it to the world in which we are discussing it today (Holdar, 1992).

To understand what people in positions around the world say about the term "Geo-politics": According to Utah State University, "geo-politics" is the struggle to control geographical entities with an international and global dimension and use such entities for political advantage (Flint, 2016).

Over the past century, we have heard about geo-politics, and these days, it is discussed on many platforms. But was this "Geo-politics" not there earlier? And why is this word getting so much attention? Who created the "geopolitical order" earlier, and why is it now necessary to re-order it? What role does India play in "Geo-politics," and what effect will the geopolitical reordering have on Indian Democracy as we see today?

These questions are crucial to understand as no supernatural power has come into the picture over the years. Everything has been done by human beings - for and with human beings. We, the people on this earth, have distinguished the developing and developed economies. We, the people on this earth, have ruled and consumed the resources of other countries. It is we, the people on this earth, who have created war, destruction, snatching powers, making people enslaved people, etc. These are all very relevant and are known from our documented history.

So, it can be said even though in earlier times people didn't have the word "Geo-politics," there was some order, and that order was carried by the people of various countries and continents based upon their rituals, cultures, belief systems, and communities. India, too, has its order before the British era, in the British era, and even after that. However, after World War 2 and the independence, India's connection with various countries in terms of bilateral trade, travel, tourism, education, medication, education, and more started evolving, and India too got entangled with "geo-political order / re-order" phenomena.

It is known that even after so many excellent tie-ups with various countries like the US, Britain, Russia, France, China, Gulf nations, and more, India is still labelled as a "Developing country." Today, India is very much a country with human, mental, growth, and resource capabilities. Having so much strength, what is stopping India from the line-up in the position of "Developed Nations"? Especially now that India itself has led the baton and successfully done the G-20 summit.

Knowing India's capability, and even after having India in so much of the limelight, why is India still a backfoot country? Why are we still under pressure? What effects is the Geopolitics of the world creating in India?

These are some questions that are important to understand. India is giving the world immense action points, yet the confidence and the zeal of the people of India are kept aback. Is there any power enforcing the nation's people in power not to grow on, or is there some "conspiracy" behind it? As per the research the opinion is there may be the hidden facts that are illuminated in Indian democracy.

To present the effect of "Geo-political reordering" on India's Democracy, considering the above-mentioned questions, in this paper various reliable sources from today's world will be presented.

This paper will hence be a working paper to understand hereafter effects or the takeaways which comes out from this paper.

LITERATURE REVIEW

History is laden with belligerent leaders using humanitarian rhetoric to mask geopolitical aims. History also shows how often ill-informed moralism has led to foreign entanglements that do more harm than good - Samantha Power

Samantha Power is the 19th Administrator of USAID, the World's largest bilateral development agency, with a global staff of over 11,000 across more than 100 countries (USAID, 2024). Many such people find the word "Geo-politics" to be a mask. A mask that has overshadowed countries like the US, Britain, Germany, France, Russia, and China, and these countries create pressure on the developing countries of the World. These developed nations created and imposed the word "Geo-politics" and created the order and the dis-order or re-order.

To know more about world order, when we talk about geo-politics, it reflects and emphasizes the world and worldly matters altogether. Many authors have studied very closely to get insight into the world's geopolitical order. Most authors are interestingly from developed economies, like Henry Kissinger, Ray Dalio, Pat Robertson, Ben Jeapes, Peter J. Taylor, and many more.

All authors have their understanding and "theory" based on which party they belong to, what methodology the party carries with the World, their relationships, and what dealing the party takes with developing nations are more so.

As Kissinger, the central point politicians must recognize is that world order requires legitimacy but is increasingly challenging to define.

Kissinger, being an American himself, admires the virtues of US internationalism. However, Kissinger describes the coming world order as one of regional powers interacting with one another to find a mutually agreed-upon definition of legitimacy (Kissinger, 2014).

Taylor (1993) wants to set the current search in a pattern that gives context to both the historical and theoretical aspects of nations. According to his philosophy, an argument should develop into two parts. The first part should feature the geopolitical analysis interpreting the world order, which is the distribution of political power worldwide. To understand these 'geopolitical world orders', it is necessary to relate them to other global patterns of social change and the activities of governments that create the events that are the stuff of international politics. The result of this analysis is to produce a concept of world order that is a framework for relating events to broader patterns of change.

Second, the geopolitical world orders occurred in the twentieth century. They are dealt with chronologically, first the Geopolitical World Order of the British Succession and then the Cold War Geopolitical World Order, as two subjects for describing the international politics of the twentieth century from a distinctively geopolitical perspective (Taylor, 1993). This was George Bush's call for the New World Order.

Interestingly, the person who coined the term "Geo-politics" belongs to a developed nation, today's. Today's authors writing on geo-politics and world order-disorder are primarily from developed nations, especially the US, or have connections with the US or developed nations. Henry Kissinger, who presented a book on World Order, presented a history of Europe, China, Islam, the Arab World, the Roman Empire, the Persian Empire, the Middle East, Asia, and the Turkish-based Ottoman Empire (Kissinger, 2014). In every element of world politics, America was thereafter its sovereignty and by getting the economic power of money, i.e., the dollar, in its regime.

When people in power or surrounded by power, like the USA, suppress other countries in geo-politics, they circulate and create a system where what they communicate is followed by leaders and citizens of a nation.

To explain, let us take an example of India's independence. The country was under the rule of the British Empire for almost 200 years. In these 200 years, India saw many wars, be it world war or war for independence within the country. Moreover, when India gained independence in 1947 after many negotiations. The economic condition, the health condition, the happiness condition, and even the social condition is not hidden by any. Now, if we see the same thing from what today's "Geo-politics" or world order is all about, something comes as clarity from the dominating countries that the *freedom of a country cannot be sustained without a framework of order to keep "peace."* It is more like a balance, power, and legitimacy that a person ruling the nation must sustain, not only with other nations but primarily with their own country and its people.

So, when India gained independence, we saw various turmoil and unwanted situations because a country with power and legitimacy, i.e., Britain, forced India to obey what it wanted. Many arrangements were made, and to date, there are treaties in India with developed countries. No doubt, gradually, with the existence of globalization, things globally improved, yet the "geo-politics" globally and with India changed with many friendly and un-friendly situations over the years.

The positioning of the Indian subcontinent is such that it is well connected with water, air, and land. The country is also rich in its natural mineral resources. Because India is strategically located around the globe, its geography suits most of the developed nations. The population in India is immense. As per Statistic Times, by 1st July 2024, we will have 1.44 billion (Ministry of Statistics and Programme Implementation, 2024).

This number not only includes a range of people living in different sections with different purchasing powers, but we also have an immense labour class that is not only cheap in terms of daily wages but also concerning

currency globally. However, there is also a class that has money power enough to purchase luxury items and lead a luxury lifestyle, be it on EMIs today.

With this reality, we see today in the 21st century that India has few manufacturing units. The manufacturing units are from companies in developed nations like the US, Japan, Germany, etc.; we mainly see Apple, Microsoft, and Google, which are quite a few big names. Even Indian companies or industries in India have been handshake with companies of developed nations, and India's resources are exported in various ways to developed nations.

These are not things to be taken lightly. Whatever is transacted on an international platform is all done in dollars. The US lobby controls the geopolitical statistics of the Indian economy and politics, hence.

To make long things short, the geo-politics of Indian democracy today is in a position where what we consume, what we invest, what we spend, what we see, and what we work for is all for the developed nation, and all developed nations use US dollars to transact. This transaction ultimately goes to the USA, which enforces the geopolitical ordering and re-ordering phenomena to the globe, which is not required. However, to keep the hold of countries and the democracies still under his power, even the political regime of many developing countries is controlled and contributed by only the US.

The effect of all this is that we keep hearing the slogan "One nation—One election," and those who control the geopolitical ordering and re-ordering say a slogan called "The New World order" that was first given by George H.W. Bush.

According to Bush, this new world order would be organized around the international communities' efforts to halt aggression by the powerful over the powerless (Tindall & Shi, 1996). Moreover, this statement of Bush came soon after the end of Saddam Hussain's era.

Hence, it is understandable that the USA uses, manages, and manipulates the concept of geopolitics to benefit various other countries and India as well as attain power.

RESEARCH METHODOLOGY

The topic chosen is relatively new and exciting, and it requires lots of concentration because of how the US has evolved this "Geopolitical" wave; it has spread like a fire in a jungle. Moreover, the word "Geopolitics," which is a parallel influence of the "New World Order," is a cherry on the cake used by developed nations over developing nations too frequently.

The research methodology used in this paper is more of secondary research. The books, the YouTube channels, the podcasts by various organizations, the quotes and comments of policymakers and people in power, what they said and have been saying for "Geopolitics." Because this topic owes an elite section of the group of people, gathering information even from secondary sources takes a lot of work.

To know what the geopolitical order was and what effects happened, the reordering of geopolitics is required, and what effect the geopolitical reordering is giving on Indian democracy is a broad topic of research. It is, therefore, this paper will not be a conclusion, but this paper is a working paper with a study ahead.

When Geo-politics is talked about and studied, one should look at it from a historical perspective also, as the root of this topic lies there.

Therefore, a few questions that are taken as a hypothesis from Chapter 1 are:

1. Why is India still a backfoot country?
2. Why is India still under pressure?
3. What effects is the Geopolitics of the world creating in India?

These questions need to be brainstormed as Geo-politics is a topic that affects not only a nation's past but also its present position, natural and human-based resources, and future.

Therefore, this paper will stand as a foundation and a working paper on "Geo-politics" with other relevant topics as the steps ahead.

This paper will be literature-bound, theoretical, and descriptive, with various sources of studies well mentioned in the bibliography.

FINDINGS

"Geopolitics" existed in the era of imperialist rivalry between the 1870s and 1945 when competing empires clashed and fought numerous wars (Tuathali, Dalby, and Routledge, 1998). The primary war that occurred in between was the World Wars. This was the time when the nations in power all the time used to produce, arrange, and then alter and revise the lines of power that were the borders of the world political map.

Even today, there is no difference. In today's so-called 21st century, war exists. At present, as we head towards mid-2024, we are watching two major wars—the Russia-Ukraine and Israel-Palestine wars. With these wars, there are cold wars, many internal displacements, and civil war-like situations in various countries. One of them is India.

The fact is we have just a "**GLOBE**" – Planet Earth with limited land – 30% land and 70% water. Moreover, we people are so desolated that rather than living in peace and harmony, we have reasons to fight, kill, and hunger to acquire more and more land. And this zeal of capturing more land comes from the power of money and creating tension within a particular region. Fortunately, for more than a decade, what we have seen in India has been very relevant to the word "displacement." The kind of power India has and the geopolitical rifts it is undergoing are not global; they are also within the country.

As we are in the process of understanding the "Effect of Geopolitics reordering," why have order and reorder been so much emphasized? Taylor (1993) clearly mentions that "The international political elites and their governments make the decisions that collectively make up the **WORLD ORDER** that do not operate in a material vacuum." If we look at the present situation, whom does Taylor (1993) mention when saying "International political elites"? It's developed nations like the U.S. that go into the depth of history and look at some questions: Who brought the concept of geopolitics or the world order? The answer is the USA. Who spread the narrative of the geopolitics all over the globe? The answer is the USA. Who wants One the World order? The answer is the USA.

The effect of geopolitics is also inclined toward the world economy that is recurring in nature Wallerstein (1984b). The authoritative powers keep the politicians of the countries busy systematically varying circumstances in which politicians are busy providing new agendas for the next actions. Precisely how the world orders relate to these cycles is a complex and highly contested theoretical issue.

Interestingly, no specific definition of the term "geopolitics" will be noticed (Tuathali, Dalby, and Routledge, 1998). Henry Kissinger, former U.S. Secretary of State, single-handedly helped to revive the term in the 1970s by using it as a synonym for the superpower game of balance-of-power politics played out across the global political map (Hepple, 1986).

However, the reason for the popularity of geopolitics is that this word was created to deal with the world political map by the powerful nations and people in this world. Geopolitics addresses the "big picture" and offers a way of relating local and regional dynamics to the global system.

Mahan (1957) mentions that the American naval historian Alfred Mahan (1840–1914), for example, wrote about the importance of physical geography—territorial mass and physical features and relation to the sea—in the development of seapower by expanding states in his classic study *The Influence of Seapower Upon History*, which was first published in 1890

The German geographer Friedrich Ratzel (1844–1904) also wrote about the importance of the relationship between territory or soil and the nation in the development of imperial strength and national power. In his book *Political Geography* (1897), Ratzel, who was deeply influenced by social Darwinism, considered the state to be a living organism engaged in a struggle for survival with other states.

There were a few questions that were raised in Chapter 1: Introduction, and to find which side the hypothetical questions are based on, the following are the finding points:

1. Why India is still a backfoot country?

India was ruled because of its geographical position and for the natural resources India had. If the freedom struggle wouldn't have started, British would have never left India. But after Independence, India took loan and evolved strategically and attained its name and fame on global platform.

But the situation turned different after 2014. It would be incorrect to say that India before 2014 was never on backfoot! Yes, it was. But there were vision-oriented leaders those who brought the nation back to track by introducing "liberalisation". Indian economy was liberalised in year 1991 and thereafter the progress we see of India was never there before.

But the year 2014 and the new regime brought Indian economy at a halt. We do talk about 5 trillion economy which will bring India at the third position after USA and China. But the fact is we are way below and with what the data is available we are at rank 5 in GDP.

Rank	Country	GDP (in U.S. dollars)	Annual Growth rate
1	United States of America	27.97 trillion	1.5%
2	China	18.56 trillion	4.2%
3	Germany	4.7 trillion	0.9%
4	Japan	4.29 trillion	1%
5	India	4.11 trillion	8.4%

Source: Forbes India (2024, March 11)

However, here itself, a contradiction statement comes from the International Monetary Fund (IMF) when the IMF warns the Indian government by saying, "India's general government debt may exceed 100% of gross domestic product (GDP) in the medium term" (The Wire, 2023).

Mishra (2023), from an article in Business Standard, says that long-term risks are high because the country needs considerable investment to improve resilience to climate stresses and natural disasters.

When an organization that gives debts to the world economy says such a statement openly, the question raised gets its answer. Yes, India is currently at a back foot in terms of its economic power, and the hypothesis stands correctly.

2. Why India is still under pressure?

The geopolitical position of India realistically has been changed a lot in past decade. The gap of so called rich to be rich and poor to be poorer has grown much wider. The way China – our neighbouring country is building its relationships with countries with which India had incredible tie-ups, is now a matter of concern.

According to Pal (2021) "Bangladesh, Maldives, Nepal, and Sri Lanka showcase the diversity of China's engagement strategies in a very multidimensional region but also make clear that influencers across South Asia are learning from each other's experiences with Chinese money and power".

China's economic and political footprint has expanded so quickly that many countries, even those with relatively strong state and civil society institutions, have struggled to grapple with the implications.

This speedy and strong relationship of China with various countries and the investment and development that China is doing in India's neighbouring countries and has also intruded on India's land is not a matter of being silent. However, because the lobby of Indian diplomats is under pressure, India is losing its trust and strength with various neighbouring nations.

Hence, this answer is enough to back the question that, geopolitically, India is under immense pressure.

3. What effects is the geopolitics of the world creating in India?

We are heading to the middle of 2024, and the situation globally is not favourable. With two significant wars happening, the world has been divided into two sections – (1) USA, Britain, Germany, France with Ukraine and Israel and (2) Russia, China, Iran, South Africa with Russia and Palestine. Ironically, the world is divided between developed nations and some developing countries. The countries that are named, with most of India, have shaken hands with some EXIM and bilateral treaties.

So, with instability all over, India is taking very strategic steps to remain controlled and keep its geopolitical roots intact within the country. On the other hand, the situation internally is also not very healthy. If the war is on the international front, the civil war is also on the internal front.

Hence, the effect of the world's geopolitics on India and the situation within India is not very welcoming.

4. Who creates these geopolitical orders? Which country initiated it?

Geopolitics is a power game. Nations that owe monetary power bring themes that, when circulated globally, require other countries to contribute to them. They say the slogans and the rest of the countries follow. The USA and the other developed nations that support the USA created a propaganda "Geopolitics," and the rest of the developing nations followed the narrative and are still following in their footsteps.

The USA pushed back the topic of Geopolitics earlier, and now it is bringing a new theme to the world that is very much co-related: "World Order."

With the geopolitical situation globally in turmoil and everything based on aggression, fighting, and war, it is very important to see the world from a different angle now. War was destructive earlier, and it is the same now. But with the way mind games and illuminations are being created, people all over the world, including the Indian democracy, are getting immensely impacted.

Hence, the questions raised at the start of the paper were concluded in the findings. The points raised not only stand correct but also raise many more questions regarding geopolitical order / reorder and the World Order. More of the topics will be covered in the next steps of the paper, which will be continued as a working paper.

CONCLUSION

To conclude the topic of "Effect of Geopolitics reordering on Indian Democracy" is not possible as of now because the matter is ongoing. The current situation and the way the nations are going through wars, depression, and recessions economically will change.

The ongoing phenomena of two major wars, Russia—Ukraine and Palestine—Israel, and various Cold War eras are complex to stop too soon. The direction is heading towards major crises, and with the notion of "World Order" brought by the USA's people, be they in Congress or the Republic, the situation is such that there is more threat to the present condition.

The irony of the present situation is that the USA gives heavy themes to the world, and when he is unable to handle the position, either he backs out and leaves the situation ruined, or he starts hunting people from other countries people to work for them.

It is essential to understand that there is a lobby behind what has been happening over the past 75 years in the world. The remote is somewhere else, and the control is complete. Moreover, one country with remote control controls almost all democratic countries by influencing developing countries.

India is not untouched. India, too, is keeping good ties with that country – the USA. Moreover, as a lot of tie-ups and funds have been sourced in India from the USA, it is more a situation as

– you like it or not, but you have to have it!

India's democracy has its independence, but eventually, we will be much weaker economically than the USA. Other than that, what relations India has today with its neighbouring countries will be a matter of concern over the next few years or perhaps a decade.

STEPS AHEAD

The paper initiated will be a working paper as more of the streams from this paper have been opened. The current global scenario, the way the dynamics and relationships are changing within various countries, the way the economy of nations is going into a slump, the way jobs are in recession, the way the slogan of "New World Order" is getting structured, the way significant sectors of any country – agriculture, education, pharmaceuticals, tourism and many more are made to get controlled, it is essential to understand why this controlling is necessary by whichever country or countries are doing so.

Also, the way things are presented to the public is like a big picture; where is the layman placed in all the scenarios? Is there any illumination being created, or is it a fact?

This paper will be further studied using the following major keywords: geopolitics, order- reorder, New World Order, illumination in the world—myth or fact, and more.

The more information and depth of study that will be gained from this base topic, the better and relatable further and future work will be to relate to the facts of the real world.

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DEMOGRAPHIC FACTOR AND THEIR IMPACT ON CONSUMER ATTITUDE TOWARDS GREEN DURABLE PRODUCTS IN DELHI/NCR

¹Ms. Sweety Kumari and ²Dr. M.D. Ciddikie¹Ph.D Scholar and ²Assistant Professor, Sharda School of Business Studies, Sharda University, India**ABSTRACT**

Demographics are the most fundamental components in any research study and help to establish the foundation for crucial aspects. It is apparent that these elements have a significant role to play in shaping the behavior of consumers. While they are acknowledged as important but the significance of demographics in research has been criticized. Through an investigation into the influence of demographic factors on the establishment of consumer attitudes toward environmentally friendly durable products, the purpose of this study is to respond to the criticism that has been made.

The focus of the investigation is on sustainable durable products made of green due to India's status as the world's largest consumer durable products market in the world. Due to the increasing environmental issues, companies are increasingly embracing the environment and are adopting sustainable marketing practices. In the end, products that are green are gaining popularity as consumers are aware of their potential as solutions to environmental issues.

Understanding how consumers view green products is vital in highlighting the importance of the demographics. To meet the objectives of the study the firstly, data will be collected from 252 people by using a precisely created Likert-scaled survey. The sampling method is the simple random sampling technique. Both inferential and descriptive statistics, which are backed by SPSS software are used to test the hypotheses of the study. The research is designed to provide useful insights into the interaction of demographics and consumer behavior within the context of environmentally friendly durable products.

Keywords: Demographic Factors, Green durable products Consumer Behavior, Sustainable Development, Consumer Attitude.

INTRODUCTION

The use of durable and sustainable products has received a lot of attention and significance in our increasingly eco-conscious world. As people increasingly value sustainability, producers respond by creating goods that meet not just their needs for use but also reduce their impact on the environment. These products are developed with the intention of reducing consumption of resources, energy use and the generation of waste throughout their lifespan.

One characteristic of environmentally friendly products is their use of sustainable materials. Manufacturers are choosing to use recyclable materials, renewable resources and biodegradable components to reduce their carbon footprint. This change not only contributes in conserving natural resources, but helps to reduce the environmental impact of conventional manufacturing processes.

Durability is really a vital element of these products. Through the design of items that can stand the damage of time, brands decrease the necessity for regular replacements, decreasing the actual quantity of reference put. Long lasting merchandise not only help the ecosystem, nonetheless they furthermore end up being financially very therapeutic for people over the years simply because they can help to save over the cost of replacement.

In addition, green long lasting goods usually incorporate strength efficient features and producing techniques. From energy-efficient appliances to manufacturing that is environmentally powered They're able to lessen co2 pollutants and convince an eco renewable way of consumption.

The demand for renewable and environmentally friendly products is increasing as buyers learn more about environmentally friendly effects of the acquisitions. Companies that focus on sustainability inside their offerings don't just have line making use of the consumer's beliefs, but also aid in the worldwide work to fight climate changes. With all the way that opportunities continue to establish and progress, the incorporation of eco-friendly and sustainable practices in items creation and design may very well be the norm that will lead to an environmentally friendly and renewable upcoming for buyers plus the environment.

Green durable items, which embody durability and design that is eco-friendly gaining popularity as a result of developing green dilemmas. These items, including environmentally safe appliances to energy-efficient fabrics, concentrate on toughness as well as a reasonable environmental effect. Because India is the planet's respected marketplace for consumer sturdy merchandise the analysis is concentrated on examining the attitudes of people

toward these environment-friendly options. Since businesses are adopting growth that is sustainable eco-friendly marketing, sustainable strategies for advertising are a necessity. The study, which employs a Likert-scaled study of 252 participants, is designed to see the impact of demographic issues in framing the perceptions of buyers. The study aims to shed light on the vital role played by demographics in advancing sustainable consumer choices through statistical analysis made using SPSS software.

In this age of sustainability, a myriad of environmental problems like pollution and deforestation, global warming and the depletion of natural resources are becoming more apparent. The public is becoming aware of these concerns on their lives and their health, triggering changes in the way they live. Socio-demographic variables play an important influence on the way people consume that reflect changes in the consumers' preferences. The shift toward sustainable development has given way to green marketing, a new approach that includes green products. This is a case in point for the market for consumer durable items that is embracing sustainable practices in order to provide eco-friendly alternatives for appliances and electronic devices. However, consumer acceptance of sustainable products isn't assured, which requires a thorough awareness of consumer attitudes toward environmentally friendly products. This study examines the attitudes of people living in Delhi/NCR, and incorporates factors that affect their perceptions about green durable goods. Attitude, in this case is a person's internal beliefs or experiences, which can indicate attitudes or preferences toward environmentally-conscious features. The study aims to dig into the interplay between social-demographic variables and consumer attitudes regarding green long-lasting products that are available in the region of Delhi/NCR.

LITERATURE REVIEW

Studies on previous studies of sustainable and green products have played an important part in shaping our understanding of sustainable consumption as well as production. Researchers have examined a range of aspects of these items, looking at their impact on the environment, consumers' preferences, and the financial effects of implementing such methods.

Numerous studies have focused on life-cycle analyses to determine the environmental impact of sustainable green products. This is a process of studying the environmental impacts of a product's extraction of raw materials as well as production and removal. These analyses help to identify areas where improvements could be made to decrease resource consumption, energy usage, and carbon emissions.

Consumer behaviour and preferences are also a major subject of research. Understanding the factors that drive people to select sustainable and green products over other options can provide valuable information for companies and policy makers. Factors like environmental awareness, perception of product quality and price all influence the consumer's decision-making processes.

Economic studies have examined the economic and financial benefits of switching to environmentally friendly and long-lasting methods of production. Research has examined the cost-effectiveness of sustainable manufacturing practices by analyzing factors such as the initial investment, operating costs and the long-term effects. These economic insights aid companies in making educated decisions regarding the benefits of adopting environmentally sustainable practices.

Furthermore, research in the past has examined the role of incentives and policies of the government to encourage the use of sustainable and environmentally friendly products. Knowing the regulatory landscape and its effects on companies can provide policymakers with information of effective strategies for encouraging sustainable practices within the industry.

Prior studies have laid foundation for understanding sustainable and green products, providing useful insights into their social, environmental and economic facets. As the world struggles with environmental issues, the findings of these studies can be used to inform better decision-making and will guide consumers, businesses and policymakers towards an environmentally sustainable future.

In a research conducted by Clare D'Souza et al. (2018) in which it was observed that men have greater knowledge of issues affecting the environment however, women have a greater concern about environmental quality. The study revealed a connection between education and social status with increased knowledge of the environment. In addition, women were found to be more conscious about their surroundings while younger respondents showed an increased awareness of environmental concerns. A investigation conducted by AduFosu A. P. (2020) highlighted the importance of demographics in influencing the buying behaviour of green products with men being the predominant consumers of these products. Previous research, including studies by Tikka et

al. (2000), Stern et al. (1993) as well as Zelezny and. (2000) consistently shows that women are more likely to display more positive attitudes towards green issues than males.

Young consumers, specifically those under 20 are more likely to have a preference towards green products as compared to older age categories. Maichum et al. (2017) found that respondents younger than their age show more concern about the environment and that their purchasing habits are closely connected to their environmental beliefs.

Ottman et al. (2006) highlighted that people who are young are more receptive to the latest and most innovative ideas than older groups. Conversely, D'Souza et al. (2007) discovered conflicting findings between older and younger generations regarding their views on environmental issues. In particular, people who are less than 20 years of age have more positive perceptions of environmental issues than those of a mature age, as reported by Wang and colleagues. (2022).

Examining specific age segments, Fisher et al. (2012) found that those between the ages of 25-34 and 45-54 years are especially concerned about green movement. However, consumers of older ages are more worried about the environment and pay more attention to green labels as outlined by C.D Souza et al. (2007).

Fisher et al. (2012) highlighted that those who are married have an increased level of attention toward purchasing environmentally friendly products and displaying positive intentions to participate in eco-friendly behavior. This is in line with the results of Patel and co. (2017) who concluded that married customers tend to exhibit more environmentally conscious behaviour compared to single peers.

But, it is crucial to remember that marital status might not always be a significant factor in determining environmental behaviour. Kalaiselvi as well as Dhinakaran (2021) discovered instances in which marital status was considered not to be relevant in relation to environmental behaviors. Although the study results vary there is a common thread that suggests that marriage is more likely to be associated with a tendency towards eco-friendly selections and purchasing green products.

According to Haron and colleagues. (2005) respondents with an education that is formal have a higher ability to understand green product, while those who have higher incomes displaying an interest in these products. DiPietro et al. (2013) discovered in their research that female consumers and highly educated people are more environmental aware, and are actively the promotion of green practices.

D'Souza et al. (2007) believe that environmental issues are directly related to a consumer's education. Fisher et al. (2012) discovered that people who have higher education levels have a higher likelihood to participate in green practices. Furthermore, the degree of education does not just increase awareness of the environment, but also influences the level of maturity of individuals (Prasher 2020).

Wee et al. (2014) further confirmed their findings by revealing that people with high education levels tend to buy organic or sustainable products as in comparison to those with less education. The data suggests a positive relationship among formal educational attainment, environmental consciousness and the tendency to take environmentally responsible actions.

Dubey as well as Shukla (2004) found in their research that professionals and students display positive attitudes towards environmental issues. They actively engage in leadership and participation to protect the environment. Professionals, particularly, exhibit a clear desire to purchase eco-friendly products. Sorvali (2023) discovered that professionals and students in India have a greater awareness of environmental issues which translates into environmental-friendly behaviors. Kumar et al. (2021) discovered that those who are employed express greater environmental concerns, and have greater levels of environmental knowledge and awareness when compared to the general population.

Rezai et al. (2013) found that people who have higher incomes tend to have an opinion of the green idea as opposed to those who have less income. People with incomes ranging between 4 and 6 lakhs have an increased desire to purchase green products (Gauncar and others.). The people with higher incomes have a higher tendency to purchase organic and green products (Wee 2014). Fisher (2012) reported that people who earn more tend to be more aware of environmental concerns.

Savita (2014) stated that the individuals of North Asia, particularly in Delhi tend to be more watchful and responsive to ecological dilemmas, that leads up to a boost in the acquisition of eco products which tend to be lasting. Travel or even Cordell (1999) failed to get a hold of any considerable differences when considering outlying and metropolitan residents in your community pertaining to problems which are ecological. But, Buttell and Flinn (1978) found that urban residents are usually even more alert to ecological problems in comparison to

their particular alternatives which can be outlying. The assorted conclusions mention the text this is certainly difficult earnings levels or even expert condition and ecological understanding and behavior.

Singh or even Bansal (2012) found that the necessity of ecological issues in shaping consumer behavior is separate of age or sex of participants. Kirmani along with Khan (2015) unearthed that there exists a effect which is positive the encompassing environment has actually on customers' perceptions, because of the ecological factors as being a main factor the introduction of attitudes toward green items. Yang (2017) described ecological issues like a aspect which is crucial impacts consumer attitudes towards green services and products.

Psychographic and faculties which are environmental-related understanding, understanding and thinking had been recognized as crucial elements in shaping the consumer's attitudes in accordance with Anvar Venter and Venter (2014). Indriani et al. (2019) found a connection which is good with ecological awareness and attitudes of customers towards products which tend to be green.

Perceived Effectiveness of customers appeared being an predictor this is crucial of behavior, as mentioned in Tan (2011) and also Nath yet others. (2013). Gleim Lawson and Lawson (2014) included that sensed consumer effectiveness plays a role in the perception of people that they usually have a direct effect in the environment by applying techniques which are green.

Dempsey et al. (2018) revealed the partnership which is near social norms and also consumer behavior, a view that was additionally echoed by Megens and Weerman (2010). The research of Dewanto, Belgiawan (2020) highlighted the web link between personal norms and perceptions of eco items that tend to be friendly. Ogiemwonyi et al. (2019) verified the value that personal norms are likely involved like a element which shape the behavior of customers resolving difficulties which are ecological. The research collectively reveal the interplay this is complex diverse elements, including ecological problems, pro-environmental behavior also personal norms to affect consumer attitudes towards green items.

RESEARCH METHODOLOGY

The research hires an exploratory, descriptive method using the definitive goal of learning the impact and importance of demographic impacts in the attitudes of customers toward green items. The research requires asking participants with concerns regarding both their particular profile which is demographic and elements that shape their particular views on eco lasting services and products. The elements being foremost are considered tend to be ecological issues or even ecological understanding, perception of standard of living for customers, and also personal objectives. This research is designed to unveil the partnership this is certainly complex demographic facets while the diverse facets of consumer behavior and habits, while dropping light regarding the complex characteristics that influence behavior and choices in terms of eco lasting services and products.

DATA COLLECTION

The research's information had been gathered utilizing a mixture of additional and techniques being main information collection. The info this is primary accumulated via a closed-ended, structured questionnaire that has been distributed utilizing Bing types and through direct interviews because of the participants. The questionnaire had been organized to prompt certain and standard answers, supplying a technique which is standardised of their main information. This technique this is certainly double gets better the precision of this information collection procedure, that allows to perform a much deeper evaluation associated with effect and part of facets that impact demographics on consumer viewpoints about green durable products.

The questionnaire had been fashioned with treatment to assist in the evaluating for the hypotheses for the research. It absolutely was consists of open-ended Likert scale concerns that range between highly decided to highly compared from the scale of 1-to-5. The target would be to gather the quantitative that is necessary for theory evaluation. A straightforward sampling which is arbitrary ended up being made use of to ensure everybody of Delhi/NCR was presented with exactly the same possibility of becoming area of the research. The quantity this is total of were chosen for the analysis.

The plans which are statistical personal Sciences (SPSS) software ended up being employed for analysis of information. Descriptive statistics, such as the analysis of mean and portion made use of to analyze the demographics of participants. The Kaiser-Meyer-Olkin (KMO) and also Bartlet test, in addition to ANOVA and Regression had been employed to analyze and draw conclusions in regards to the hypotheses which were developed throughout the research in the region of inferential statistics. This process this is certainly comprehensive of data and evaluation gets better the precision and credibility of these conclusions.

HYPOTHESIS OF THE STUDY

H01: There's no substantial difference in gender or factors that influence consumers' attitudes toward green durable products.

H02: There's no significant difference in age and other factors that affect Consumers attitude toward green products that last.

H03: There isn't a significant difference in Marital Status and the Factors that Influence the attitudes of consumers toward sustainable green products.

H04: There isn't a significant difference in income and the Factors that Influence Consumers Intention towards green durable goods.

H05: There's no substantial difference in occupation and the Factors of Consumers' Attitude towards environmentally sustainable products.

H06: There's no significant difference in Educational Qualification and Factors of Consumers attitude toward green durable goods.

H07: There isn't a significant difference in the factors that determine Consumers' Attitude as well as the Attitude of Green Durable products.

SH08: There's no effect of consumer factors Attitude on the attitude of the public towards sustainable green products.

Data Analysis

Demographic Analysis

Table 1: Demographic characteristics

Items	Variables	Frequency	Percent
Gender	Female	107	42.5
	Male	145	57.5
Age	15-25 years	75	29.8
	26-35 years	90	35.7
	36-45 years	53	21.0
	46 years and Above	34	13.5
Marital Status	Single	117	46.4
	Married	135	53.6
Educational Qualification	No Formal Qualifications & Less than Secondary	35	13.9
	Secondary to Higher Secondary	34	13.5
	Undergraduate	29	11.5
	Graduate	84	33.3
	Post Graduate and Above	70	27.8
Occupation	Students	45	17.9
	Unemployed	18	7.1
	Govt. Employed	50	19.8
	Private. Employed	62	24.6
	Self - Employed	34	13.5
	Home Makers	43	17.1
Income (Monthly)	Up-to Rs. 10,000	43	17.1
	Rs.11,000-Rs.50,000	107	42.5
	Rs.51000-Rs.1,00,000	50	19.8
	More Than Rs.1,00,000	52	20.6
Residence	Delhi	64	17.7
	Noida	49	13.5
	Ghaziabad	49	13.5
	Faridabad	43	11.9
	Gurgaon	47	13.0
	Total	252	100.0

Based on the demographics list of respondents, it was found the following: 57.5 percent of respondents of the survey were male and 42.5 percent of them were female. In terms of educational qualifications The majority (33.3 percent) had graduate degrees. They were which was followed by 27.8 percent who had postgraduate or above degrees, 13.5 percent with Secondary to Higher Secondary education, 11.5 percent with undergraduate degrees as well as 13.9 percent of respondents had no formal educational background.

As for married status 46.4 per cent of the respondents are single, while 53.6 per cent were married. The distribution of age showed it was 29.8 per cent of those who participated fell into the age bracket of 15-25 years, 35.7 percent in the 26-35 age bracket, 21.0 percent in the 36-45 year age bracket and 13.5 percent were aged 46 and over. Most of the respondents were in the 26-35 year age group.

In terms of monthly earnings, 17.1 percent reported earnings of up to Rs. 10,000. 42.5 per cent fell within the range of Rs. 11,000-Rs. 50k range, 19.8 percent were in the Rs. 51,000-Rs. 1,00,000, and 20.6 percent of them earned in excess of Rs. 1,00,000. The majority of respondents were in the middle-income category.

In terms of occupation, respondents included the students (17.9 percent) as well as unemployed persons (7.1 percent) and federal personnel (19.8 percent) as well as private-sector workers (24.6 percent) as well as self-employed persons (13.5 percent) and homeowners (17.1 per cent). Most of them were employed privately.

In terms of geography, a larger portion of the respondents (17.7 percentage) resided in Delhi as compared in that of the National Capital Region (NCR) (See Table 1).

Table 2: KMO and Bartlett’s Test

KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.758
Bartlett's Test of Sphericity	Approx. Chi-Square		58.295
	df		6
	Sig.		0.000

The table provided shows the load of factors for the elements that affect the attitudes of consumers towards sustainable green products. This is because the Kaiser-Meyer-Olkin (KMO) measurement is 0.758 which is higher than the suggested threshold of 0.6. In addition it is evident that the Bartlett test is noteworthy which indicates that the data is extremely suitable for rigorous analysis of data. These indicators confirm the suitability of the data to be subjected to a rigorous analysis, indicating a strong relationship with the other elements (Refer for Table 2).

Table 3: Communalities for Factors' of Consumer Attitude

Communalities for Factors' of Consumer Attitude		
	Initial	Extraction
EC1	1.000	0.685
EC2	1.000	0.628
EC3	1.000	0.645
EC4	1.000	0.360
EA1	1.000	0.640
EA2	1.000	0.659
EA3	1.000	0.619
EA4	1.000	0.483
PCE1	1.000	0.619
PCE2	1.000	0.550
PCE3	1.000	0.962
PCE4	1.000	0.962
SN1	1.000	0.695
SN2	1.000	0.535
SN4	1.000	0.576
SN4	1.000	0.644
ATT1	1.000	0.548
ATT2	1.000	0.563
ATT3	1.000	0.672
ATT4	1.000	0.504
Extraction Method: Principal Component Analysis.		

The table below presents community-based extraction that is derived by Principal Component Analysis (PCA). In addition, all variables have values greater than 0.5 which indicates that a substantial part of the variance in the variables can be effectively accounted by the fundamental factors (Refer to Table 3).

ANOVA Analysis

Hypothesis 1

Table 4: ANOVA Analysis for Gender of the respondents

Variables	Gender	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	Female	54.5070	107	4.89879	1	2.249	0.135
	Male	55.2483	145	2.90675			
	Total	54.9335	252	3.88804			

The table below shows that there isn't any statistically significant distinction between the genders regarding aspects that affect consumer attitudes towards environmentally sustainable product (F=2.249, P=0.135). Therefore, the hypothesis is given the support of. The presence of a p-value greater than 0.05 percent indicates the absence of significant variations as well as the average values indicate that males tend to have more positive consumer views towards eco-friendly items (refer at Table. 4).

Hypothesis 2

Table 5: ANOVA Analysis for Age of the respondents

Variables	Age	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	15-25 years	55.2567	75	3.71901	3	0.260	0.854
	26-35 years	54.8556	90	3.29666			
	36-45 years	54.7642	53	5.16539			
	46 years and Above	54.6912	34	3.50003			
	Total	54.9335	252	3.88804			

The table above shows that there isn't any statistically significant distinction between the age group in relation to the factors that influence consumers' attitudes towards green durable product (F=0.260, P=0.854). Thus, the hypothesis can be supported. With a p-value that is greater than 0.05 percent The results indicate an absence of significant divergence. The median values suggest that the age range of 15-25 years has more positive consumer attitudes toward environmentally sustainable products (refer at Table. 5).

Hypothesis 3

Table 6: ANOVA Analysis for Marital Status of the respondents

Variables	Marital Status	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	Single	55.4145	117	3.02738	1	3.374	0.067
	Married	54.5167	135	4.47268			
	Total	54.9335	252	3.88804			

The table shows that there isn't any statistically significant distinction in the variables that influence consumer attitudes towards durable green products dependent the marital situation (F=3.374, P=0.067). This suggests that this hypothesis is backed by. The p-value is greater than 0.05 percent The results indicate that there is no significant variance and the average values suggest that individuals tend to show a positive outlook towards green durable products (refer to the Table. 6).

Hypothesis 4

Table 7: ANOVA Analysis for Educational Qualification of the respondents

Variables	Educational Qualification	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	No Formal Qualifications & Less than Secondary	55.1214	35	6.06077	4	2.110	0.009
	Secondary to Higher Secondary	55.2132	34	2.37261			
	Undergraduate	54.7328	29	5.40541			
	Graduate	54.9405	84	3.03881			
	Post Graduate and Above	54.7786	70	3.33692			
	Total	54.9335	252	3.88804			

The table below shows an important difference in the elements that affect consumer attitudes towards sustainable products that are green in relation to educational qualifications (F=2.110, P=0.009). Therefore, the hypothesis is disproved. A p-value lower than 0.05 percent is a sign of the statistical importance, and consumers who are graduate as well as those with postgraduate or higher degrees demonstrating significant importance. The study also reveals that as education improves, consumers show an increased interest in green products that last (refer the table No. 7).

Hypothesis 5

Table 8: ANOVA Analysis for Occupation of the respondents

Variables	Occupation	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	Students	55.1167	45	3.42849	5	3.723	0.007
	Unemployed	55.1389	18	1.75361			
	Govt. Employed	55.5800	50	3.06080			
	Private Employed	55.0121	62	3.20330			
	Self Employed	54.3309	34	3.33696			
	Home Makers	54.2674	43	6.39461			
	Total	54.9335	252	3.88804			

The table presented shows that there is a significant distinction in the aspects that influence consumer attitudes towards environmentally sustainable products that are based on the type of occupation (F=3.723, P=0.007). Therefore, the hypothesis is disproved. With a p-value of less than 0.05 percent the Government Employed as well as private-sector employees have significant statistical significance of 5percent. Furthermore, students are significantly significant statistically in relation to the factors that influence consumer attitudes towards green durable products. Thus the null hypothesis has been not accepted (refer at Table. 8).

Hypothesis 6

Table 9: ANOVA Analysis for Monthly Income of the respondents

Variables	Monthly Income	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	Upto Rs. 10,000	55.2674	43	4.19835	3	0.411	0.745
	Rs.11,000-Rs.50,000	54.8014	107	4.09149			
	Rs.51000-Rs.1,00,000	54.5800	50	3.41457			
	More Than Rs.1,00,000	55.2692	52	3.67685			
	Total	54.9335	252	3.88804			

The table above demonstrates there's no factor this is certainly analytical the consumer's views about green durable services and products in accordance with the month-to-month earnings of the just who took part (F=0.411, P=0.745). Hence, this theory is supported. In the event that p-value is higher than 0.05 per cent additionally the results declare that there's no variance which is considerable. Nevertheless, the values which can be typical that the earnings selection of Rs.10,000per annum tends to demonstrate a confident attitudes towards green durable items (make reference to the dining table no. 9).

Hypothesis 7

Table 10: ANOVA Analysis for Residence of the respondents

Variables	Residence	Mean	N	S. D.	df	F	P
Factors of Consumer Attitude	Delhi	54.5352	64	4.10378	4	0.662	0.619
	Noida	55.1020	49	2.67362			
	Ghaziabad	54.4949	49	5.30735			
	Faridabad	55.1860	43	3.44432			
	Gurgaon	55.5266	47	3.29576			
	Total	54.9335	252	3.88804			

The table below indicates that there isn't a statistically significant differences in the factors that influence consumer attitudes towards green durable goods based on location of the participants (F=0.662, P=0.619). This suggests that this hypothesis is confirmed since the p-value has surpassed 0.05 percent. The results suggest that the respondents of Noida, Faridabad, and Gurgaon tend to show an optimistic attitude towards environmentally sustainable items (refer at Table. 10).

Hypothesis 8: Regression Analysis

Table 11: Regression Analysis

Model Summary					
Model	R	R Square	Adjusted R Square	R	Std. Error of the Estimate
1	0.338 ^a	0.114	0.100		1.743
a. Predictors: (Constant), SN AVG, EA AVG, PCE AVG, EC AVG					

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.780	4	24.195	7.966	0.000 ^b
	Residual	750.204	247	3.037		
	Total	846.984	251			
a. Dependent Variable: Attitude AVG						
b. Predictors: (Constant), SN AVG, EA AVG, PCE AVG, EC AVG						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.931	1.880		5.283	0.000
	EC AVG	0.009	0.075	0.008	0.121	0.904
	EA AVG	0.135	0.068	0.132	1.999	0.047
	PCE AVG	0.246	0.053	0.288	4.680	0.000
	SN AVG	0.008	0.064	0.008	0.131	0.896
a. Dependent Variable: Attitude AVG						

The table below shows what is known as the Model Summary, wherein four independent variables were included in the regression model to evaluate their correlated to the dependent variables. The relationship is expressed as R which indicates the high level of positive relationship between the independent and dependent variables, with a coefficient of R=0.0338. This is a value of 0.114 when considering the four variables that are independent and concluding the following: 11.4 percentage (Adjusted R-square) of the variances in attitude of consumers can be explained by this framework (refer the Table no. 11).Top of Form

FINDINGS

Recent research has highlighted the crucial role played by the demographics of consumers in shaping their opinions about green products that last. This is in line with the study of Felix and colleagues. (2022) that identified the increased observance of males to green durable goods, a conclusion that is confirmed by the current study. Additionally, the present study shows that married, mature individuals with a particular interest in environmentally friendly products, confirming the findings of Ali, Jony, and Shakil (2017) that educated and environmentally conscious individuals tend to be more prone to adopt the "Green Concept."

The analysis additionally shows that individuals who will be utilized program an elevated susceptibility to impacts that influence customers' views and attitudes, verifying the idea that profession features a effect this is considerable shaping the perceptions of eco renewable items. Also, the analysis shows that folks just who

belong to your middle-income category are more inclined to start thinking about and alter their particular views about eco products which tend to be friendly. This is certainly in keeping with the theory that economic elements shape the behavior of customers, especially when considering alternatives which can be environmental-friendly.

Geographically, the study reveals that those from Delhi are more susceptible to the influences that influence consumer attitudes than other regions. This variation in regional contexts underscores the need for customized strategies to promote sustainable green products, taking into account the distinct influence of different contexts of demographics.

In summation, the research highlights the multiple effects of demographics on consumer behavior, providing insight that could inform the development of targeted strategies in the promotion of sustainable products for different groups of society.

CONCLUSION

The findings of the study highlight the importance of the demographics of consumers in shaping their attitudes towards green durable products. Particularly, demographic variables have significant correlations with important factors like environmental concerns of consumers awareness, their perception of effectiveness, and adhering to social norms, all influence their opinions about eco-friendly products. The research suggests that mature married males display heightened awareness of aspects that affect consumer attitudes.

Income and education are important demographic factors that are significantly influencing the attitudes of consumers. This study is in line closely with Schiffman and Kanuk's (2010) attitude theory, which asserts that positive attitudes towards certain people are a sign of positive behavior. In this sense it is believed that attitudes are psychological predispositions which are defined by evaluative judgments which reflect different degrees of preference or the aversion.

In inclusion, the research illuminates the component that is geographical recommending that people which live inside the National Capital Region (NCR) are far more at risk of the influence of numerous the factors that manipulate customers' behavior in comparison with those residing positioned in Delhi. This space in local circulation suggests the necessity for various techniques to allow for various styles which are demographic.

In the end, the study emphasizes the interplay of factors that affect the demographics of consumer behavior, highlighting the importance of examining these variables when analyzing and predicting consumer behavior within the context of durable green products.

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AN ECONOMETRIC ANALYSIS OF THE INFLUENCE OF EXCHANGE RATE VOLATILITY ON TRADE BALANCE. A SPECIAL REFERENCE TO INDIA. (2003-2022)

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ABSTRACT

This paper delves into the pivotal roles of exchange rates and balance of trade, influencing economic policies, trade dynamics, and the broader global market landscape. Focused on the interplay between exports and exchange rates from 2003 to 2022, this study employs a rigorous quantitative methodology. Leveraging the Auto Regressive Distributed Lag (ARDL) model in EViews-12, it meticulously analyzes the long-run relationship between these variables. Additionally, Granger causality tests are applied to unveil short-run dynamics. The findings underscore the substantial and positive impact of India's exports on its exchange rates, highlighting implications for both short-term fluctuations and long-term trends.

Keywords: - Economics Growth, Agriculture Sector, ARDL.

INTRODUCTION

An economy depends heavily on foreign exchange since the value of a certain currency indicates the strength of a country's economy. Therefore, the most qualified specialists and technocrats, who are typically gathered at the top financial institution, are in charge of managing it rather than leaving it to chance (Segal, 2021). Since the beginning of the floating exchange rate regime in 1973, this corpus of study has expanded tremendously, particularly in the post-Bretton Woods era when the foreign currency rate has been extremely volatile (Mitchell, 2023).

An important metric in economics is the exchange rate, which shows how much one currency can be swapped for another (Roy, Suvendu. 2021). To make payments to other nations for products, services, and interest on loans for investment purposes, foreign currency is needed (*Methods of Payment*, n.d.). In the flexible exchange system, exchange rates are regulated by the interplay between supply and demand. An upsurge in imports generates a heightened demand for the foreign currency of the exporting nation, whereas an upswing in exports results in an increased supply of same foreign currency (Mishkin, 2007).

The trade policy of India underwent a transformation in 1991 due to its economic liberalisation, resulting in a rise in exports, diversification, and foreign investment (*Indian Economy: An Overview*, n.d.). Between 1957 and 2021, India's Balance of Trade averaged **-2.97 USD Billion** (D, n.d.). Trade is an essential economic statistic that shows how well a country is performing in global trade. A positive trade balance can result in an increase in the value of a country's currency, whereas a negative balance might affect inflation levels and the ability to borrow money. Policymakers diligently track trade balance data to guide choices, promote sustainable economic expansion, and facilitate India's entrance into the global market (*Global Strategic Institute for Sustainable Development | Department of Economic and Social Affairs*, 2023).

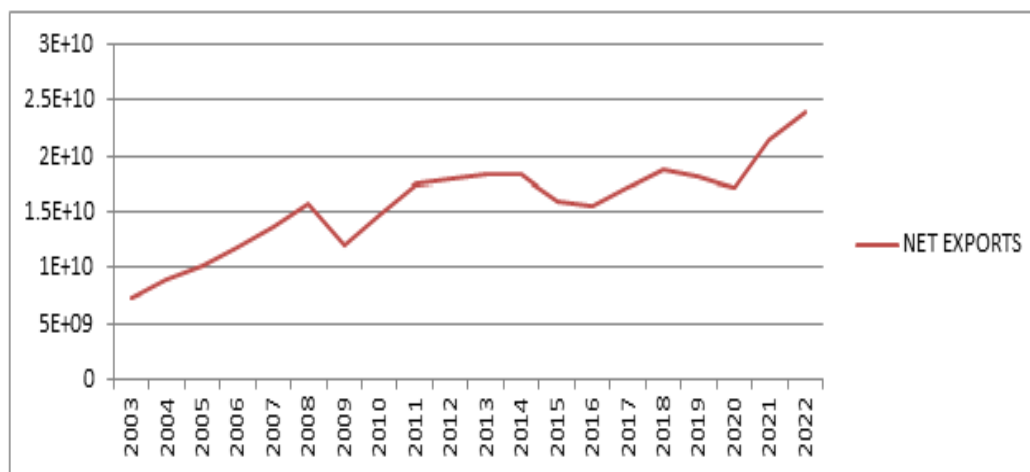


Figure 1- line graph showing net exports over the years

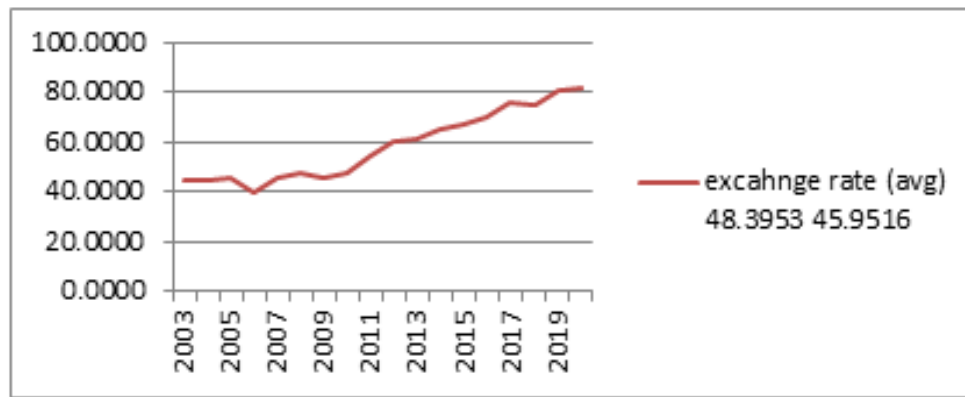


Figure 2-line graph showing exchange rate over the years

This study looks into whether changes in exchange rates have a noticeable and direct effect on India's trade balances with other countries.

OBJECTIVE

This study aims to examine the short-term and long-term connection between net exports (expressed as NX) and exchange rates (expressed as XR) in India from 2003 to 2022.

REVIEW OF LITERATURE

Thahara, F and et. al. (2021) investigated the relationship between the exchange rate and Trade Balance in Sri Lanka for the time period 1977 to 2019. Trade Balance is used as the dependent variable, and the independent variables are Exchange Rate, Gross Domestic Product, and Inflation. Augmented Dickey-Fuller unit root test was adopted to test the stationary property of time series data, Auto Regressive Distributed Lag model was employed to find the long run and short-run relationship and long-run adjustment, Bound test approach, the unrestricted Error Correction Model and Granger Causality Test are used to analyze the data. The research findings suggest that the exchange rate has the adverse effects on Trade balance in the long run.

Oluyemi and isaac (2017) conducted a study on the effect of exchange rate on imports and exports in Nigeria by using monthly data from the year 1996 to 2015. The study used augmented dickey fuller test to check the stationarity of each of the variables. The results found that the exchange rate have a positive and insignificant effect on imports while have a negative and insignificant effect on exports in Nigeria.

Ahmed and et. Al. (2017) examined a study on the impact of exchange rate on exports in case of Pakistan by using annual time series data from the time period 1970 to 2015. The study used secondary data which is taken from the official site of international monetary fund and world bank. Augmented dicky fuller test and phillip-perron test is used to test the stationarity andAutoregressive distributive lag model is used to check the relationship between the variables. The results shown that the exchange rate have negative but insignificant impact on exports of Pakistan.

Adam and et. Al.(2017) investigated the dynamic relationship between exchange and the indonesia's exportsby using monthly timeseries data from the time period 2001 to 2015. The data is collected from central bureau of statistics and vector autoregression, granger causality and ARDL method is used to check the relationship between the variables. The results found the negative relationship between the variables.

Liew and et. al. (2016)examined a study on the relationship between the exchange rate and trade balance of the ASEAN countries by using yearly time series data from the time period 1986 to 1999. The purchasing power parity theory is used to check the relationship between the variables which concluded that the trade balance has negative affected on the nominal exchange rate.

Altintas and et, al. (2011)conducted a study on the impact of exchange rate volatility on Turkish exports by using quarterly time series data from the time period 1993 to 2009. The data is extracted from the online sources of the OECD website and the study used autoregressive distributive lag model for the analysis. The results suggest that exchange rate volatility has positive and statistically significant impact on Turkish exports.

Jian (2007) examined the effect of real exchange rate misalignment of RMB on china's exports using annual data from the time period 1978 to 2005. The study used error correction model to check the analysis and the results found that the real exchange rate has a negative effect on export.

Oyovwi(2012) studied the effect of exchange rates volatility on economic growth in Nigeria using annual data from 1970 to 2009. Generalized autoregressive conditional heteroscedasticity(GARCH) method is used to test the exchange rate volatility and the findings shown that in the short run, economic growth had positively responsive to exchange rate volatility, while in long run a negative relationship existed between the two variables.

HYPOTHESIS

H0- there is a long run relationship between the exchange rate and the trade balance.

H1- there is no long run relationship between the exchange rate and the trade balance.

DATA SOURCES AND METHODOLOGY

Annual time series data is taken from the Handbook on Indian economy by RBI and database of World Bank for the years 2003- 2022.The data has been analysed in E views-12 statistical software. Moreover, for the empirical analyses, the variables are transformed into their natural algorithm to reduce the disturbing influence of the outliers in the extracted data. The study utilized data on net exports and exchange rates collected from **2003 to 2022**

Long-Run Analysis: ARDL Bounds testing Approach

The study employed the ARDL Bounds testing technique to analyse the long-term correlation between the variables for the period from 2003 to 2022.. The estimation procedure involves the succeeding steps. To test for the presence of a unit root in the variables, the Augmented Dickey-Fuller test(ADF) by D.A. Dickey is used. . Based on the results, in the next step, ARDL Bound testing approach is used to analyse the long-run relationship between the variables and in the last step, Granger’s causality test in a multivariate VAR framework has been applied to deduce short-run relationship and direction of causality by using E-views software.

Exchange Rate is expressed as (XR) and balance of trade is expressed as BOT. The regression model of the study is as follows:

$$BOT = f(XR) \tag{1}$$

Transforming the equation (1) into linear equation

$$BOT_t = \alpha_0 + \alpha_1 XR + \epsilon_{1t} \tag{2}$$

Where, α_0 is a constant, α_1 is a coefficient of BOT and ϵ_{1t} is the error term in the model which is in the equation (2). All the variables are transformed into their natural logarithms. Therefore, the final description of the model is presented in succeeding equation:

$$\ln BOT_t = \alpha_0 + \alpha_1 \ln XR + \epsilon_{1t} \tag{3}$$

Firstly, the stationarity of the variables is checked as the ARDL method needs variables to be stationary at either I(0) or I(1) levels. Unit root tests are broadly used to check stationarity. The present study has used ADF to check the unit root at both level and at the first difference level. The null hypotheses in the ADF test is that- lnBOT and lnXR have unit root i.e. the series is non-stationary. The results are exhibited in Table 1 and 2.

Table 2: Unit Root Table : ADF, Log XR	
Tests	ADF
Level (Intercept)	0.97993
Level (Trend and Intercept)	0.2067
1st Difference (Level)	0.0021**
<p>Note: 1. The results have been computed by using ADF test using EViews software 12. 2.The symbols *, **, and *** signify statistical significance at the 10%, 5%, and 1% levels, respectively.</p> <p style="text-align: center;">Source: Computed</p>	

Tests	ADF
Level (Intercept)	0.1976
Level (Trend and Intercept)	0.1922
1 st Difference (Level)	0.0009**

Note: 1. The results have been computed by using ADF test using EViews software 12.
 2. The symbols *, **, and *** signify statistical significance at the 10%, 5%, and 1% levels, respectively.
Source: Computed

The results from the tests show that lnXR is stationary at I(1) by using ADF, as depicted in Table 1. The p-value is statistically significant at 0.0021 by using ADF test. Whereas, lnNX is stationary at I(1) by using the ADF test as shown in Table 2 i.e., at 0.0009 at both level and intercept by using ADF. The results qualifies for the usage of ARDL model to deduce the long-run relationship between the variables. In the next step, the existence of long-run relationship will be examined by using the Bounds test approach. Following is the ARDL equation of the model, when BOT is a dependent variable:

$\Delta \ln(\text{BOT})_t = \alpha_0 + \sum_{j=1}^n b_j \Delta \ln(\text{BOT})_{t-1} + \sum_{j=0}^n c_j \Delta \ln(\text{XR})_{t-j} + \delta_1 \ln(\text{BOT})_{t-1} + \delta_2 \ln(\text{XR})_{t-1} + \epsilon_{1t}$. Where δ_1 and δ_2 are the long-run multipliers in the ARDL model, while b_j and c_j are the short-term dynamic coefficients. The null hypothesis, $H_0: \delta_1 = \delta_2 = 0$, which assumes no co-integration, is being tested against the alternative hypothesis, $H_1: \delta_1 \neq \delta_2 \neq 0$, which suggests the presence of co-integration. Table 3 presents the outcomes of the Bounds test.

Significance	10%	5%	2.5%	1%
I(0)	3.02	3.62	4.18	4.94
I(1)	3.51	4.16	4.79	5.58
F-Statistic	4.359093			

Source: Computed

According to the criterion, we cannot reject the null hypothesis if the f-value is lower than the I(0) bound. Suppose the f-value is higher than the I(1) bound. In that case, we can reject the null hypothesis and accept the alternative hypothesis that there is a long-run co-integration relationship between the variables. If the f-statistic falls between the bounds, the test is inconclusive. The ARDL Bounds test findings indicate that the f-statistic value, 4.359093, exceeds the I(1) Bound value of 4.16, even at a significance level of 5%. This strongly supports the presence of a long-term relationship between the variables. The subsequent phase will involve the analysis of short-term causation through the utilization of VAR Granger causality.

Short-Run Analysis: VAR Granger Causality

The null hypothesis posits no short-term causal relationship between the variables, while the alternative hypothesis posits that there is such a relationship between the variables from 2003 to 2022. According to econometric rules, the null hypothesis is rejected when the p-value is below the 5% threshold.

Null Hypothesis	Obs.	F statistic	Prob
Log XR does not granger cause log BOT	18	1.83623	0.1984
Log BOT does not Granger Cause Log XR		5.64347	0.0172

Source- computed

In the next step, the VAR Granger Causality Test by C. Granger (1969 and 1980) has been applied to analyse the short-run causality between the variables. The results depicted in Table 4 clearly show a uni-directional causality running from lnBOT to lnXR, in the short-period at a 5% level of significance, i.e., $0.0172 < 5\%$ level of significance. Whereas other way causality was not found as the p-value is statistically insignificant i.e., $0.1984 > 5\%$ level of significance.

Residual Testing

Residual testing of the model has been done, and the results are presented in tables 5 and 6. Since the p-value in both cases is above the 5 % level of significance i.e., at 0.1823 and 0.6608 respectively for serial correlation and heteroscedasticity. Thus, we conclude that the model is fitted well and is also free from both problems.

Adjusted R-square	R-square	Prob
-0.065662	0.230355	0.1823
Source- computed		

F-statistic	Prob.
0.542158	0.6608
Source- computed	

Normality Testing

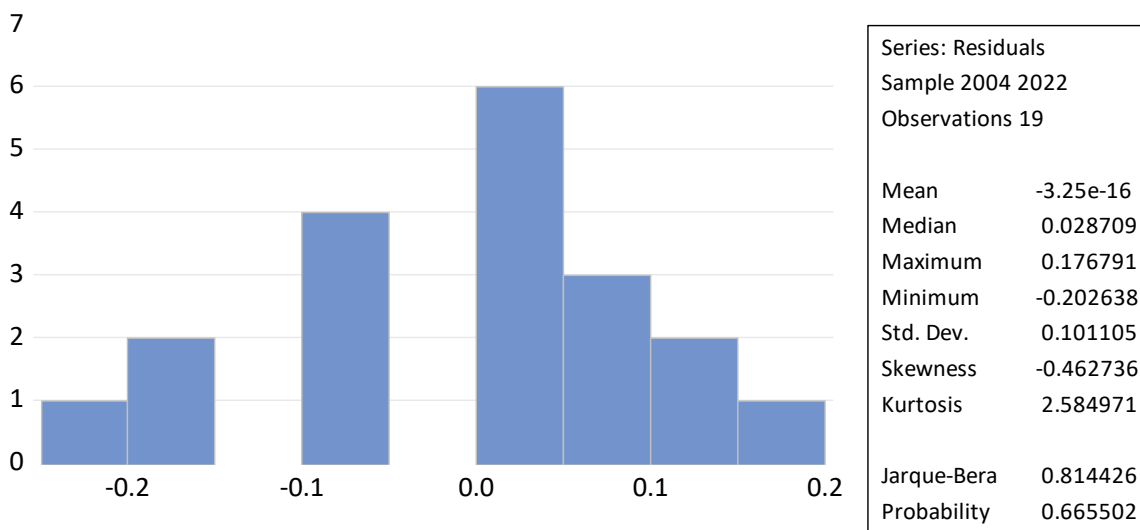


Figure 3- Normality test conducted on the dataset

Source: Eviews 12

Figure 3, above depicts the results of the normality test conducted on the dataset. The null hypothesis posits that the data is normally distributed, while the alternative hypothesis suggests otherwise. With a p-value exceeding the 5% significance level ($p = 0.665502$), we fail to reject the null hypothesis. Thus, based on this analysis, we conclude that the data is normally distributed.

CONCLUSION

This study has examined the correlation between fluctuations in exchange rates and the trade balance in India throughout the period of 2003 to 2022. The analysis was performed utilising the ARDL Bounds testing technique and VAR Granger Causality tests.

The study's findings indicate that India's exports exert a substantial and favourable influence on India's exchange rate, both in the short term and the long term. This implies that an increase in exports leads to an appreciation of the Indian rupee against other currencies, while a decrease in exports leads to depreciation.

Additionally, the ARDL Bounds testing approach provides evidence that there is a long-term connection between the volatility of the exchange rate and the trade balance in India.. This suggests that changes in exchange rates have a persistent effect on India's trade balance over time.

Furthermore, the VAR Granger Causality tests indicate a uni-directional causality running from exports to exchange rate in the short run. This implies that changes in India's exports cause changes in the exchange rate, but not vice versa, in the short term.

Overall, these findings enhance the comprehension of the relationship between the fluctuation of currency rates and the trade balance in India. It is recommended that authorities closely monitor the influence of currency exchange rate variations on India's trade balance and take steps to minimise any adverse consequences.

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WOMEN EMPOWERMENT THROUGH DIGITAL TRANSFORMATION @ 75 IN INDIA

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ABSTRACT-

“There is no chance for the welfare of the world unless the condition of women is improved. It is not possible for a bird to fly on only one wing.” - Swami Vivekananda

On August 15, 2022, India celebrated 75 years of independence. It is an honor for all Indians to celebrate 75th year of India's independence as “AzadikaAmritMahotsav”. Over the past 75 years, India has focussed on its scientific progress, including women empowerment. There have been concerted efforts to ensure empowerment of women at the lower rung of the social strata. These initiatives are beyond the realms of gender equality. They espouse to motivate women to take up fresh challenges and inspire women to chase their dreams in a secure environment.

OBJECTIVES

To assess -What is Gender Equality.

To Examine the Recognitions of women’s Rights and Gender Equality in Indian Constitution.

To assess the impact of laws: have the women protective laws yielded the desired results?

To provide Suggestions

RESEARCH METHODOOGY:

The article is based on Secondary data available on various online resources and Journal.

INTRODUCTION

In the total global population, one half is constituted by Women. They are continuously subjected to gender differences and bias. Human progress and civilization of the society depends on the status and growth of women. the fact remains that much needs to be done and many miles have to be crossed before we reach the base camp of this Herculean Mount Everest climb. If the almighty creator of this universe has indeed created all humans as equal, then why should we confine this celebration to a single chosen day? Ensuring equality of all Humans in all spheres of life has to be adopted and adapted as a way of life and ingrained into our culture itself.

It is important to quote Hon’ble Justice Bela Trivedi who while speaking on the occasion of the first ever International Day of Women Judges hosted by the Supreme Court made the following observations on the need to ensure gender equality which could lead to ensure gender justice. “A miniscule representation of women in the judiciary will nurture a belief that women do not belong to leadership, though the symbol of justice is a lady. It is said that the whole world is nothing but the cosmic dance of Lord Shiva, and one of the forms of Shiva is ArdhNarishwar, which is the lord who is half-woman. This form of Lord Shiva represents the wholeness and completeness of human existence. In my opinion, the wholeness and completeness of justice also demands equal representation of Shiva and Shakti, that is men and women judges on the bench.”

Indian Constitution: Recognitions of women’s Rights and Gender Equality: Indian Constitution which came into force w.e.f 26th January 1950 secures for all its citizens “justice” – social, economic and political, “liberty” – of thoughts, expression, belief, faith and worship, “equality” – of status and of opportunity..... and dignity of the individual and the integrity of the nation.’ with such wordings, the preamble of the Indian constitution ensures the basic human rights of all men as well as women. The emergence of Constitution of India which assures rights and freedoms is an important event in the upliftment of women’s position in India. The Constitution of India guarantees constitutional as well as legal right for a woman. It affirms equality for women as well empowers the state to take affirmative action for women by enacting various laws and policies. By considering the social, economic political status of the women, the makers of the Constitution included provision addressing them by giving effect to the protective discrimination. On the other hand, Constitution of India also provides for the State to adopt positive discrimination if it was favour of women and if it aids in counterbalancing the disadvantages faced by them in the socio-economic, education and politics. Article 15(3) of the Constitution of India lays down that special law can be made for women. This is to mean that discrimination can be made if it is for the benefit of women.

The Indian constitution and gender equality: While the term ‘Gender Equality’ has been buzzing nowadays, the Right to equality was recognized by the Constitution vide Article 14 which stipulates that The status of women is equal to men in the eyes of law The Constitution of India also recognizes the principle of gender equality in its Preamble, Fundamental Rights, and under the Directive Principles of State Policy. One of the most significant provisions in the Indian Constitution is Article 15(3) which empowers the State to adopt measures of positive discrimination in favour of women. It is also notable that the National Commission for Women was set up in the year 1992 for dealing with complaints of women’s rights violation, to advise on the aspect of socio-economic development of women and to protect the legal rights of women, etc. At the international level, India has ratified and endorsed various conventions, instruments, initiatives, and strategies that aim to secure equal rights for women, the most significant among them being the Convention on Elimination of All Forms of Discrimination Against Women (CEDAW) which was ratified by India in 1993. Gender Equality’ is the 5th goal among the 17 Sustainable Development Goals (SDGs) adopted by the United Nations.

The Indian Constitution has guaranteed the following rights to women:

- Equality before law and equal protection of laws.
- Prohibition on discrimination.

Right to live with Dignity.

- **Right against exploitation:** Article 23 protects against human trafficking and bonded labour, which works as a shield for women’s safety and ensures their right to work. □ Right to livelihood provides that the citizen, whether men or women, equally have the right to an adequate means to livelihood.
- **Equal pay for equal work:** Under Article 39 (d), the state shall direct its policy towards securing that there is equal pay for equal work for not only men but also women.
- **Right to health:** Article 39 (e), guarantees that the state shall direct its policy towards securing that the health and strength of workers, men as well as women and the tender age of children are not abused and none of them are not forced by economic necessity.
- Just and human conditions of work and maternity relief: Article 42 of the constitution directs that the state shall make provision for securing just and human conditions of work and for maternity relief.

SPECIAL LAWS ENACTED TO PROTECT WOMEN AGAINST CRIMINAL ACTS & UPHOLD THEIR PERSONAL RIGHTS:

The Central Govt and State Govts have also enacted special legislations to deal with Immoral Trafficking,

Dowry Prohibition,

Indecent Representation,

Protection of children from sexual offences,

Protection from Domestic violence,

Women’s Health & Safety – Medical termination of Pregnancy Act: and Pre-Conception and Pre-Natal Diagnostic Techniques (Regulation) Act (PCPNDT) 1994,

Prevention of Sexual harassment at Workplace,

Benevolent labour enactments which provide Maternity benefits and protection of employment, Minimum Wages, Equal Pay and many others.

Have the women protective laws yielded the desired results? what is the state of affairs after more than 70 years of the birth of the constitution? bottom of form: The Constitution was brought into force w.e.f 26th January 1950 and even after 70 years of its enactment, the condition and status of women remains a matter of concern. No doubt an eminent philosopher has remarked “It is not the gender which is destroying our culture.... it is our interpretation of culture which has destroyed gender equality.”

Some statistics in this regard are worth noting:

- (i) As per Gender Inequality Report generated by the World Economic Forum 2022, India ranks amongst the last – at 135 of 146 countries in the Global Gender Gap Index which includes criteria such as economic

participation and opportunities. Women account for paltry 18% of labour income (as reported by Business Line dated 16th August 2022).

- (ii) Unequal pay: Women in India often earn less than men for doing the same work, and they are also underrepresented in higher-paying jobs. According to the World Inequality Report 2022, men in India earn 82% of the labour income while the share of women's earnings stands at a mere 18%.
- (iii) Lack of education: Girls in India often do not get the same education as boys, which causes a big difference in literacy rates between men and women. In India, 187 million women are illiterate, making up a third of all illiterate people in the world. There is a 24-percentage point difference in literacy rates between men and women in India: about 75% of men are literate, while only 51% of women are literate.
- (iv) Violence against women: Violence against women is a major problem in India. According to the National Crime Records Bureau, there were over 371 503 reported cases of violence against women in India in 2020. This includes cases of sexual assault, domestic violence, and other forms of abuse.
- (v) Health care discrimination: Health care discrimination is a serious issue that affects many women in India. Women may have difficulty accessing quality health care due to a number of factors, including poverty, lack of education, and lack of access to transportation. In addition, women in India are often more likely to experience discrimination and mistreatment when seeking medical treatment, which can further discourage them from seeking the care they need;
- (vi) The Prohibition of Child Marriage Act remains a paper tiger as per data generated by the Institute for Competitiveness and Social Progress Imperative submitted to the EAC-PM. The National Commission for Protection of Child Rights (NCPCR) has recently moved the S.C against a High Court ruling of the Punjab & Haryana H.C which ruled that a Muslim minor girl who has attained the age or puberty (16 years) can marry . This is apparently in violation of the Prohibition of Child Marriage Act and the Protection of Children from Sexual Offences (POSCO) (reported by E.T dated 29th August 2022 & TOI dated 22nd Dec 2022) ; (vii) As per the India Discrimination Report generated by Oxfam India "Women having equivalent educational qualifications and work experience are being discriminated against in terms of salary and job opportunities in Labour market;

Are we hoping to see a vibrant and resilient India which is moving towards restoring the equal status of women? There have been concerted efforts on part of the Central Govt to ensure empowerment of women at the lower rung of the social strata. These initiatives are beyond the realms of gender equality. They espouse to motivate women to take up fresh challenges and inspire women to chase their dreams in a secure environment. Some crucial initiatives in this regard which are finally showing positive results are as under:

- (i) BetiBachaoBetiPadhao (BBBP) This Scheme focuses on ensuring the protection, survival, and education of the girl child and preventing gender-biased sex selective elimination;
- (ii) DeendayalAntyodayaYojana-National Urban Livelihoods Mission (DAY-NULM): - This scheme aims to provide shelters equipped with essential services to the urban homeless in a phased manner. The Mission covers the urban poor and the families of disadvantaged groups including women.
- (iii) Sukanya Samridhi Yojna (SSY):- It aims at the economic empowerment of women. Launched as a part of the 'BetiBachaoBetiPadhao' campaign, this Scheme is a small deposit scheme for a girl child in order to secure her future.
- (iv) The Women Helpline Scheme came into effect on April 1, 2015. The Scheme provides a 24-hour emergency response to all women who are affected by violence both in the public and private spheres. While the Govt initiatives to support and upgrade the status of women are laudable, much needs to be done still. These schemes and the benefits therefrom need to be percolated downwards to reach the lower strata of the society, the rural and backward areas, and the responsibility for this lies on all of us as Indian citizens.

India's gender budget 2023-24: moving towards women-led development: India's Finance Minister announced that the top-most priority of the Govt is inclusive development, which is also the first "Saptarishis" or the seven principles guiding her outlook the government recognises "the importance of Nari Shakti (women power) as the harbinger of our bright future and for women-led development during the Amrit Kaal (the 25-year-long lead-up to India@100)." The success of the DeendayalAntyodayaYojana National Rural Livelihood Mission that mobilised rural women into 81 lakh Self Help Groups (SHGs). The budget provided financial assistance under the Pradhan Mantri Kisan Samman Nidhi, benefiting about three crore women farmers, who

will now have access to INR 54,000 crore as a part of the scheme. Besides, in a special gesture to women and commemorating Azadi Ka Amrit Mahotsav (to celebrate India's 75 years of Independence), a new one-time small savings scheme The Mahila Samman Savings Certificate has been launched, which will be made available for a period of two years up to March 2025.

Digital technology: - the most potent weapon for women empowerment The theme for International Women's Day, 8 March 2023 (IWD 2023) is, "Digital: Innovation and technology for gender equality". This theme is aligned with the priority theme for the upcoming 67th Session of the Commission on the Status of Women (CSW-67), "Innovation and technological change, and education in the digital age for achieving gender equality and the empowerment of all women and girls". The United Nations. Observance of IWD recognizes and celebrates the women and girls who are championing the advancement of transformative technology and digital education. IWD 2023 will explore the impact of the digital gender gap on widening economic and social inequalities. As the IWD website states: "For IWD 2023 let's all fully #EmbraceEquity. Imagine a gender equal world. A world free of bias, stereotypes, and discrimination. A world that's diverse, equitable, and inclusive. A world where difference is valued and celebrated. Together we can forge women's equality. Collectively we can all #EmbraceEquity."

HOW CAN DIGITAL TECHNOLOGY HELP CREATE A GENDER EQUAL SOCIETY? Digital competencies lead to greater participation by women in the community and political life. They also ensure their safety, both online and offline. As shown in several studies, the development of digital competencies increases women's confidence, independence, social prestige, and power. According to some studies, fostering digital competencies can help close the wage gap, as women who have them also have higher salaries. A recent report by UNESCO produced in collaboration reveals that Digital competencies help women engage in economic activities and obtain employment. Digital payment and ID systems can help empower women in many different ways including Increased privacy, bargaining power, household welfare, and female labour force participation.

INDIA'S DIGITAL GENDER GAP: RESTRICTED ACCESS TO DIGITALIZATION According to 'India Inequality Report 2022: Digital Divide' Indian women are 15 per cent less likely to own a mobile phone and 33 per cent less likely to use mobile internet services than men. The report analyses the primary data from Centre for Monitoring Indian Economy's (CMIE) household survey held from Jan 2018 to Dec 2021 as per which Rural India faces an even more pronounced digital divide, with men being about twice as likely as women to have used the internet (49% vs 25%). Despite rapid advancements in internet access in India, particularly via mobile internet use, which has nearly doubled from 2018-2020, the digital divide between Indian men and women remains stark. The report analyses the primary data from Centre for Monitoring Indian Economy's (CMIE) household survey held from Jan 2018 to Dec 2021 as per which Rural India faces an even more pronounced digital divide, with men being about twice as likely as women to have used the internet (49% vs 25%). The government of India has declared IT as one of the trust areas for the country's development and has recognised it as an "essential service." Using digital technologies can truly transform not only women's ability to earn money but their health and welfare. Remote delivery of healthcare is spreading. In India, NGO SwayamShikshanPrayog's ArogyaSakhi programme uses a mobile application that assists women in becoming health entrepreneurs delivering antenatal and infancy care.

WHAT NEEDS TO BE DONE ON A WAR FOOTING TO BRING IN GENDER EQUALITY IN INDIA? A McKinsey Global Institute recently points out that improving women's status and initiating gender equality in India could add \$12 trillion to global growth. Increasing women's labour force participation by ten percentage points could add \$700 billion to India's GDP by 2025. There is ample proof that valuing females is essential towards making a prosperous society and Nation and making communities more prosperous. The above statistics are reasons enough to declare an all-out war against Gender Inequality. The methodology could be as under: By every responsible citizen of India:- Before we deliberate on the role of the Govt. and corporates to empower women, every citizen of India must start treating son(s) and daughter(s) equally and without any discrimination. To put it in plain words: The objective should be to have the courage to raise your son like your daughter rather than raising your daughter like a son.

CONCLUSION

Legislation alone cannot bring in gender parity. There must be a change in the mindset of countrymen, and this will take its own time. But then time is of essence and if India must keep pace with the Global development, then women need to be empowered. It won't happen by holding seminars and webinars and discussions at forums or by writing thesis on the subject. It must happen and we as professionals have a paramount duty to make it happen.

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CYBER SECURITY IN THE MODERN WORLD: INVESTIGATING THREATS, VULNERABILITIES, AND INNOVATIVE TECHNOLOGIES FOR ENHANCED DIGITAL SECURITY

Vinita Tomar^{*1}, Tarunim Sharma² and Bhawesh Pande³^{*12}Assistant Professor, ³Student, Department of Computer Science, Maharaja Surajmal Institute, Janakpuri, New Delhi**ABSTRACT**

The digital revolution has expanded growth opportunities but also increased cybersecurity threats. This research paper examines current threats, system weaknesses, and advanced technologies in cybersecurity, focusing on phishing, ransomware, and persistent threats to protect information systems' integrity and confidentiality. The research highlights gaps in digital infrastructures in critical sectors like healthcare, finance, and government, requiring continuous cybersecurity improvements. Innovative technologies like AI, blockchain, and zero-trust architectures reinforce defenses. The paper also analyzes the emergence of quantum-resistant cryptographic solutions in the context of preparing for the quantum computing era. This research highlights the evolving nature of cybersecurity, emphasizing the need for proactive safeguarding of digital assets, and highlighting threats, vulnerabilities, and technological innovations.

Keywords: Cybersecurity, Threats, Vulnerabilities, Innovative technology, Digital Security, Cyber Ethics, Malware

1. INTRODUCTION

The importance of cyber security cannot be exaggerated in this digitally interconnected world. The security and dependability of digital systems are crucial to all parts of modern life such as personal communications, consumer banking, critical national infrastructure, and global commerce. These systems have become more complicated and indispensable in our everyday lives with time making the consequences of a cyber breach even higher thus posing an additional complexity not only for individuals but also for corporations and governments. This paper seeks to investigate the multifaceted nature of cybersecurity, identify common threats, and explore existing vulnerabilities while categorizing the latest innovative technologies that are meant to improve digital security.

Digital connectivity has led to exponential global data generation and rapid network growth, enhancing communication but also introducing a new era of intricate and devastating cyber threats. Attacks can come from state actors, criminal groups, or individual hackers, necessitating understanding and addressing solutions. Cybersecurity breaches pose significant risks, including personal identity theft, corporate espionage, and disruption of critical infrastructure. These incidents highlight the need for continuous improvement in cybersecurity strategies and technologies. This study aims to analyze existing vulnerabilities in digital systems and investigate emerging technologies to enhance cyber security. This study aims to provide empirical insights and recommendations for cybersecurity, guiding professionals, policymakers, and academic researchers in addressing internet-based threats and promoting digital protection.

The remainder of this paper is structured as follows. Section 2 describes the related work. Section 3 briefly describes the objectives of this study. Section 4 explains the significance. Section 5 presents all about cyber security. Section 6 includes the conclusion of our paper.

2. RELATED WORK

Tagarev T. et al., [12] presented an architecture for cybersecurity research in Bulgaria, acknowledging the dual nature of advanced ICT. Their framework addresses anticipated cyber threats and supports policy formulation, crucial for enhancing societal resilience against evolving cyber risks. Admass, W. S. et al., [1] stress the urgency of cybersecurity in the face of evolving digital threats, advocating for collaboration among stakeholders to protect information systems. The article highlights current challenges and global trends while proposing future strategies, including AI and ML, to automate threat responses. Teichmann, F. M., & Boticiu, S. R. [13] proposed the escalating threat landscape and the necessity for organizations to leverage cyber threat intelligence (CTI) for effective defense. Their study elucidates the significance of CTI in enhancing security measures and addresses pertinent issues like data quality and sharing platforms. Cristiano, F., et al., [6] challenge the persistent fear surrounding cyber-terrorism, arguing that recent disruptive cyber incidents do not fit the criteria of cyber-terrorism. Through a constructivist security studies lens, her paper examines the framing of cyber threats and cyber-terror discourse, shedding light on the political impact of conceptualizing information technology as a security concern in the 1990s. Van Kranenburg and Le. Gars, [14] advocates for a distributed approach to security in our interconnected world, emphasizing the importance of verifiable credentials and

individual behavior. They challenge the traditional paradigm of government-led security, highlighting the stress caused by the privatization of identity management.

Dart and Ahmed, [7] introduce a groundbreaking cyber incident cost estimation methodology tailored for large Australian healthcare providers. Highlighting the inadequacies of current risk estimation approaches, Dart reveals the vulnerability of healthcare networks through empirical evidence and theoretical frameworks. Irshad and Siddiqui [9] address the challenge of cyber-threat attribution by proposing a mechanism to extract features from unstructured CTI reports using NLP techniques. Their research aims to automate the process of attributing cyber threat actors (CTA) by leveraging machine learning algorithms. Warikoo, A., [3] emphasizes the growing threat of Advanced Persistent Threats (APTs) and the importance of cyber threat attribution in enhancing cyber defense operations. Introducing the Triangle Model, Warikoo proposes a framework leveraging sectors, tools, tactics, techniques, and procedures (TTPs) as high-fidelity indicators for determining attribution. Beşliu, D. C., [4] highlights the increasing interdependence driven by information and communication technology, underscoring both the advantages and disadvantages it brings. With public institutions and private companies heavily reliant on information systems, governments worldwide must confront the challenges posed by cybersecurity.

3. OBJECTIVE

The objective of this paper is as follows:

- **Investigating Current Cybersecurity Threats:** This paper investigates cybersecurity threats, including malware, ransomware, phishing, and advanced persistent threats (APTs). Real-world case studies, such as the Colonial Pipeline Ransomware Attack (2021) and the Google Docs Phishing Attack (2017), provide insights into the tactics used by cyber adversaries [11].
- **Analyzing Vulnerabilities in Digital Systems:** The study also examines vulnerabilities in digital systems, including software, hardware, and human factors. Empirical data analysis, including a quantitative assessment of the National Vulnerability Database (NVD), reveals trends and patterns in reported software vulnerabilities over time, providing insights into their frequency and severity.
- **Exploring Innovative Technologies:** This research explores innovative technologies that can fortify cybersecurity measures. The paper examines cutting-edge technologies such as artificial intelligence, blockchain, zero-trust architecture, deception technologies, threat-hunting platforms, and homomorphic encryption for their effectiveness in mitigating cyber threats [10].

4. Significance

This research is of paramount importance to the cybersecurity community. It provides a comprehensive view of the contemporary cybersecurity landscape, empowering stakeholders to make informed decisions, implement effective countermeasures, and prepare for future challenges. The insights gained from this research contribute not only to academic scholarship but also help enhance practical cybersecurity practices in an ever-changing digital ecosystem [8]. This research paper acts as a guiding light for us as we navigate the complex cybersecurity landscape. It illuminates the path forward in creating robust, adaptive, and proactive defense mechanisms against emerging cyber threats.

5. About Cyber Security

Cybersecurity is a strategy to protect digital systems, networks, and data from cyber threats through rigorous monitoring, detection, and response. It involves collaboration, continuous education, and investment in advanced technologies and skilled personnel.

5.1 Current Cyber Security Threats

Understanding the diverse range of cyber threats is crucial for devising effective defense strategies in the ever-evolving landscape of cybersecurity. This section explores various types of cyber threats, including malware and ransomware, phishing and social engineering, advanced persistent threats (APTs), insider threats [2], supply chain attacks, and IoT-based threats.

- **Malware and Ransomware:** Malware, a type of malicious software, is a pervasive threat that encompasses a spectrum of malicious programs such as viruses, worms, and Trojans. The Colonial Pipeline Ransomware Attack (2021) serves as a notable case study in this domain. This ransomware attack disrupted fuel supplies along the U.S. East Coast, highlighting the vulnerability of critical infrastructure and emphasizing the far-reaching consequences of such cyber threats.
- **Phishing and Social Engineering:** Phishing attacks are a prevalent and adaptable cyber threat, with

cybercriminals using increasingly sophisticated tactics. Spear-phishing, whaling, and other types of phishing attacks. The Google Docs Phishing Attack (2017) serves as an illustrative case study, highlighting how cyber adversaries targeted Google users through deceptive tactics.

- **Advanced Persistent Threats (APTs):** Nation-state-sponsored Advanced Persistent Threats (APTs) are a sophisticated and targeted form of cyber espionage. These prolonged and covert campaigns aim to steal sensitive information. The Solar Winds Supply Chain Attack (2020) serves as a poignant case study, revealing the complexity of supply chain attacks and their potential to compromise high-profile organizations, including government agencies [5].
- **Insider Threats:** Insider threats, which arise from individuals within an organization, pose a unique set of challenges. Whether driven by financial gain or ideological motives. A case study of the Tesla Insider [9] demonstrates an incident where an employee sabotaged the company's manufacturing software.
- **Supply Chain Attacks:** The increasing interconnectivity of digital supply chains has made supply chain attacks a significant cybersecurity concern. The Not Petya Ransomware Attack (2017) initially disguised as ransomware, was later revealed as a destructive cyber weapon. It affected numerous multinational corporations, highlighting the vulnerability of interconnected supply chains [5].
- **IoT-Based Threats:** The proliferation of Internet of Things (IoT) devices presents a new frontier for cyber threats. In the Mirai Botnet Attack (2016) case study, insecure IoT devices were used to launch large-scale Distributed Denial of Service (DDoS) attacks. This incident highlights the need for securing the growing ecosystem of interconnected devices. Figure 1 depicts the annual number of malware attacks worldwide (in billions) from 2015 to 2022.

**Annual Number of malware Attacks Worldwide (In Billions)
from 2015 to 2022**



Figure 1: The annual number of malware attacks worldwide (in billions) from 2015 to 2022

5.2 Vulnerabilities in Digital Systems

In today's digital age, the security of our systems is of utmost importance. Unfortunately, these systems are often vulnerable to a wide range of threats, from software to hardware to human factors. To truly protect our systems and ensure their resilience, we must take a deep dive into these vulnerabilities, examining them from all angles.

- **Software and Hardware Vulnerabilities:** Advancements in technology pose ongoing security challenges due to hardware and software flaws strong cybersecurity practices are needed. This highlights the crucial need for proactive patch management and strong cybersecurity practices to stay ahead of the ever-changing threat environment.
- **Human Factor Vulnerabilities:** When it comes to digital security, it's important to remember that humans can be both a vulnerability and a key defense against cyber threats. Weak passwords and uninformed user behavior are just some of how human-centric vulnerabilities can pose a significant threat to our systems. The Global Cybersecurity Culture Survey has conducted a cross-cultural study to investigate the impact of cultural factors on cybersecurity awareness and practices.
- **Cloud Security Risks:** As more and more organizations adopt cloud computing, it's important to recognize

that this technology introduces new dimensions of vulnerability to our digital systems. The Capital One Data Breach of 2019 serves as a poignant case study, highlighting the consequences of a misconfigured firewall in a cloud environment.

- **Critical Infrastructure Vulnerabilities:** Securing critical infrastructure is vital due to unique cyber challenges, exemplified by the Stuxnet Attack of 2010 on Iran's nuclear facilities is a powerful example of the kind of damage that can be caused by compromising critical infrastructure through cyber means..
- **Quantum Computing Security Implications:** Quantum computing is revolutionizing cryptographic security, requiring post-quantum cryptographic methods to protect sensitive information. Organizations must understand and address these challenges to protect against potential cyber-attacks. A comprehensive approach involving technological solutions, user education, and proactive risk management strategies is essential for ensuring the resilience of digital infrastructure and mitigating the risks posed by evolving cyber threats. Figure 2 below illustrates the number of common IT security vulnerabilities and exposures (CVEs) worldwide from 2009 to 2024 YTD.

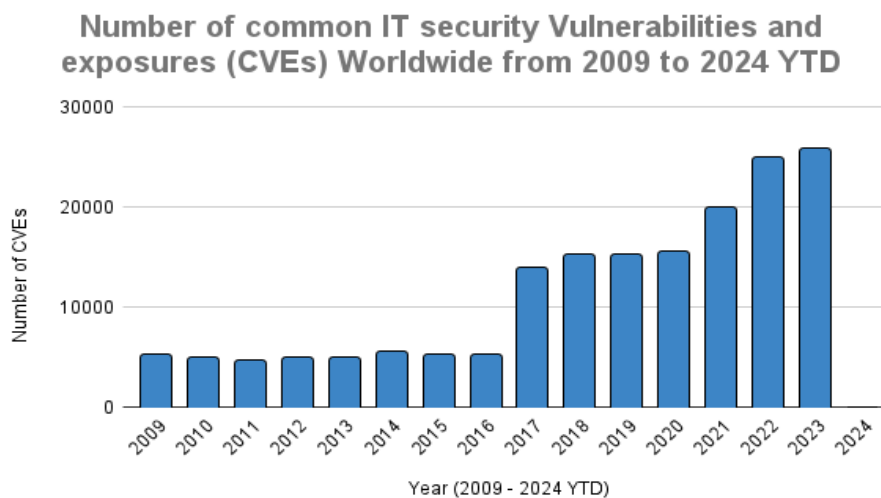


Figure 2: Number of common IT security vulnerabilities and exposures (CVEs) worldwide from 2009 to 2024 YTD

5.3 Innovative Technologies for Enhanced Cyber Security

In the rapidly evolving cybersecurity landscape, innovative technologies are playing a critical role in fortifying defenses against emerging threats. This section delves into cutting-edge technologies and their applications in bolstering digital security measures. By staying ahead of the curve and embracing new and innovative tools, we can help ensure the resilience of our digital infrastructure and protect against the ever-evolving cyber threat landscape.

- **Artificial Intelligence (AI) and Machine Learning (ML):** AI and ML are revolutionizing cybersecurity by enhancing threat detection, anomaly analysis, and predictive analytics. However, ethical considerations and challenges need scrutiny. A thoughtful approach to integrating AI and ML can maximize benefits while mitigating risks. The global artificial intelligence (AI) in cybersecurity market size was evaluated at USD 17.4 billion in 2022 and is expected to hit around USD 102.78 billion by 2032, growing at a CAGR of 19.43% between 2023 and 2032.
- **Blockchain Technology:** Blockchain technology offers a decentralized and tamper-resistant framework for enhancing cybersecurity, extending its applications beyond cryptocurrencies. The IBM Food Trust Network case study demonstrates blockchain's practical application in supply chain security, ensuring data integrity, transparency, and trust. By leveraging the power of blockchain technology, we can improve the security and integrity of our digital systems.
- **Zero Trust Architecture:** Zero Trust Architecture represents a fundamental shift in traditional security models, assuming that threats can originate from within the network. This section provides a comprehensive examination of the principles and components of Zero Trust, which enables organizations to better protect their systems and data.
- **Deception Technologies:** Deception technologies are becoming increasingly popular as a proactive approach

to cybersecurity. These technologies involve using decoys, traps, and misinformation to detect and stop attackers in their tracks. There have been many successful case studies of organizations implementing deception technologies, such as the Implementing Deception for Threat Detection case study.

- **Threat Hunting Platforms:** Threat hunting platforms are crucial for cybersecurity, enabling proactive detection and neutralization of advanced threats, ensuring network and data protection through real-world scenarios.
- **Homomorphic Encryption:** Homomorphic encryption is an emerging technology that enables secure computation on encrypted data. This technology has practical applications in protecting data privacy, particularly in sensitive industries such as healthcare and finance. The Applications of Homomorphic Encryption in Sensitive Industries case study provides valuable insights into how this technology can be used to secure sensitive information in industries with strict privacy requirements.

5.4 Future Trends in CyberSecurity

As technology continues to evolve at a rapid pace, the field of cybersecurity is facing new challenges and opportunities. Looking toward the future, emerging trends are poised to shape the digital security landscape in the years to come. These trends include the increased use of artificial intelligence and machine learning in cybersecurity.

- **Quantum Computing and Cryptography:** Quantum computing has the potential to revolutionize technology, including cryptography, but also poses threats to current methods. To address this, research is being conducted on post-quantum cryptography and quantum-resistant algorithms.
- **Biometric Authentication:** Biometric authentication, including facial recognition, iris scanning, and behavioral biometrics, offers secure, convenient methods for identity verification. However, ethical and privacy concerns arise. The global biometrics market growth case study emphasizes understanding cultural and regulatory influences, advocating for privacy, ethics, and regulatory compliance to enhance security and individual rights.

5.5 Cyber Security Techniques

There are many Cyber Security techniques as mentioned below:

- **Access Control and password security:** Access control, password security, and data authenticity are crucial for cybersecurity, as is verifying the trustworthiness of the document's source before downloading and integrity to mitigate potential risks. Anti-virus software serves as a valuable tool in document authentication and shields devices from viral threats..
- **Malware Scanners:** Malware scanners are software applications designed to scrutinize all files and documents within a system for any traces of malicious code or harmful viruses. These programs are proficient at identifying various forms of malware, including viruses, worms, and Trojan horses, which collectively pose significant risks to system integrity.
- **Firewalls:** Firewalls, whether in the form of software programs or hardware devices, function as vital gatekeepers in screening out potential threats from hackers, viruses, and worms attempting to infiltrate computers via the internet. By meticulously examining all incoming and outgoing messages, firewalls enforce predefined security criteria, thereby thwarting unauthorized access and enhancing malware detection capabilities.
- **Antivirus Software:** Antivirus software stands as an indispensable defense mechanism against malicious software, including viruses and worms, by actively detecting, preventing, and removing such threats from systems. The inclusion of an auto-update feature in most antivirus programs ensures the timely acquisition of virus profiles, facilitating immediate checks for newly identified threats. Thus, antivirus software is deemed an essential cornerstone for every system to ensure a robust cybersecurity posture.

5.6 CYBER ETHICS

Cyber ethics refers to the moral principles and guidelines that govern behavior and actions in the digital realm. It encompasses issues like privacy, security, intellectual property, and online harassment. Ethical considerations and responsibilities associated with the use, development, and regulation of technology are more important than ever in today's digital age. Adhering to ethical principles and guidelines is essential to ensure that technology benefits society and is developed, used, and regulated responsibly and beneficially. It is also important to promote positive online communication, combat cyber harassment, hate speech, and misinformation, and ensure technology serves the greater good and respects human rights and dignity.

6. CONCLUSION

Cybersecurity is crucial in the digital era, as threats are increasing and diversifying. Advanced technologies like AI and blockchain can help detect, prevent, and respond to cyber incidents. However, continued investments in innovative technologies and a multifaceted approach, combining technological solutions with cyber awareness and education, are necessary. Collective actions among governments, industry players, and academic institutions are needed to safeguard sensitive data. The paper emphasizes the need for proactive measures and continuous research in cyber security to ensure global security and prosperity in the digital world.

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A COMPARATIVE STUDY TO UNDERSTAND AUDIENCE'S PREFERENCE TO WATCH MOVIES ON OTT PLATFORMS AND CINEMA HALLS

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I.T.S School of Management, Ghaziabad**ABSTRACT**

This study aims to know the audience's preference about watching movies on different available OTT (Over the Top) platforms and Cinema Halls. To have a clear picture an online survey has been conducted in which 133 respondents participated and gave satisfactory responses to the questions asked. During Survey a questionnaire was designed including the questions related to the age, income, family size, preference to watch movies on OTT/Cinema Halls etc. As Indian entertainment industry plays an important role in economy and still has a huge scope to play a major role in Indian GDP. India secures 4th rank in "ICT Services exports". India's Media & Entertainment industry is expected to grow to \$(55-70) Bn by 2030 at (10-12)% CAGR, led by OTT, Gaming, Animation and VFX. The growth is being driven primarily by consumers' ever-increasing hunger for streaming video over the internet, now amplified by the migration of more broadcast and cable TV onto direct-to-consumer over-the-top (OTT) internet delivery networks. Therefore this study is being done to understand the parameters like; Age, Income, Family size etc. based on which people like OTT platforms or Cinema Halls to watch movies. This study is to help Entertainment providers so that they may know customer's prospective towards both the platforms and they may provide better content & services according to the viewer's requirement on both the platforms. To analyse the data Excel & SPSS software have been used for analysis purposes. Study concludes that 52.6% respondents prefer OTT platform to watch new released movies because of its convenience.

Keywords: OTT video streaming, Direct to consumer, Future of Indian Cinema, SPSS (Statistical Package for Social Sciences), CAGR (Compound Annual Growth Rate), VFX (Visual Effects), ICT (Information & Communication Technology)

1. INTRODUCTION

Gone are the days when people used to wait for their favourite movie/TV show to come on Cinema Hall/Television and watch it; the advent of OTT platforms has changed the way people got their entertainment on screen. Now people don't wait for hours to watch their favourite movie or keep patience when an ad is coming but watch whatever they want to watch on OTT. The growth of OTT platforms in India has been incredible over the past few years. Original premium content is one of the biggest growth drivers and differentiators as OTT platforms compete for consumers' attention. Industry players are investing heavily to developing content and services, as well as to improve customer experiences. According to IMARC group (International Market Analysis Research and Consulting Group) the India over-the-top (OTT) market reached \$3.7 Billion in FY 2023, and is expected to grow to \$22.1 Billion by 2032, with a compound annual growth rate (CAGR) of 21.93% between 2024 and 2032.

The growth of the OTT industry, which makes up 7%-9% of the entertainment industry, is being driven by the low cost of data plans and the rise of short-form content.

A total of 1.12 billion cellular mobile connections were active in India during early 2024. According to DataReportal's; there were 751.5 million internet users in India at the start of 2024, when internet penetration stood at 52.4 percent. This data is important because in our study 57.1% of the respondents opted mobile phones to watch movies on OTT platforms.

Count of Smartphone Users, in Million, India, 2017 - 2029

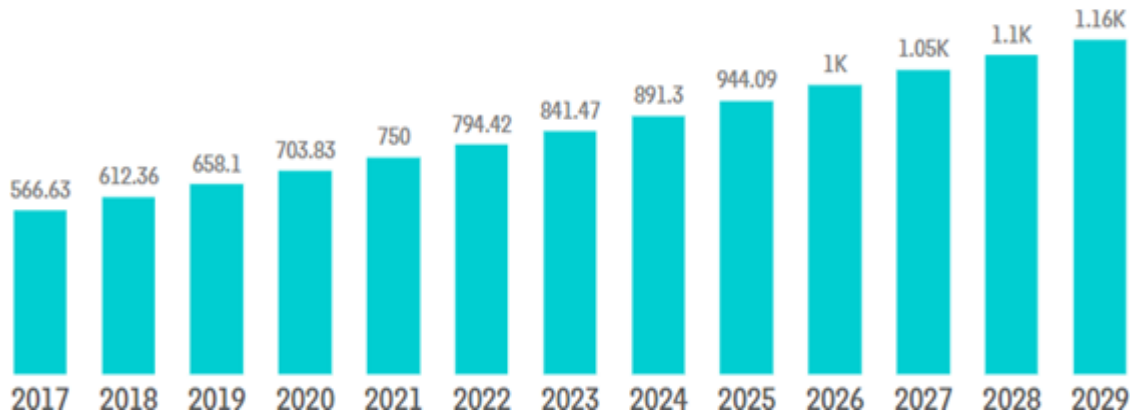


Figure-1

(Actual numbers till 2023, thereafter estimated numbers) Source: moredorintelligence.com

The growth is being driven primarily by consumers’ ever-increasing hunger for streaming video over the internet, now amplified by the migration of more broadcast and cable TV onto direct-to-consumer over-the-top (OTT) internet delivery networks. Through data, it is predicted for the huge demand in Asia market expected to account for 51% of video streaming by 2024. Though the market capture is very high, however it is a challenge for content delivery due to limited mobile networks.

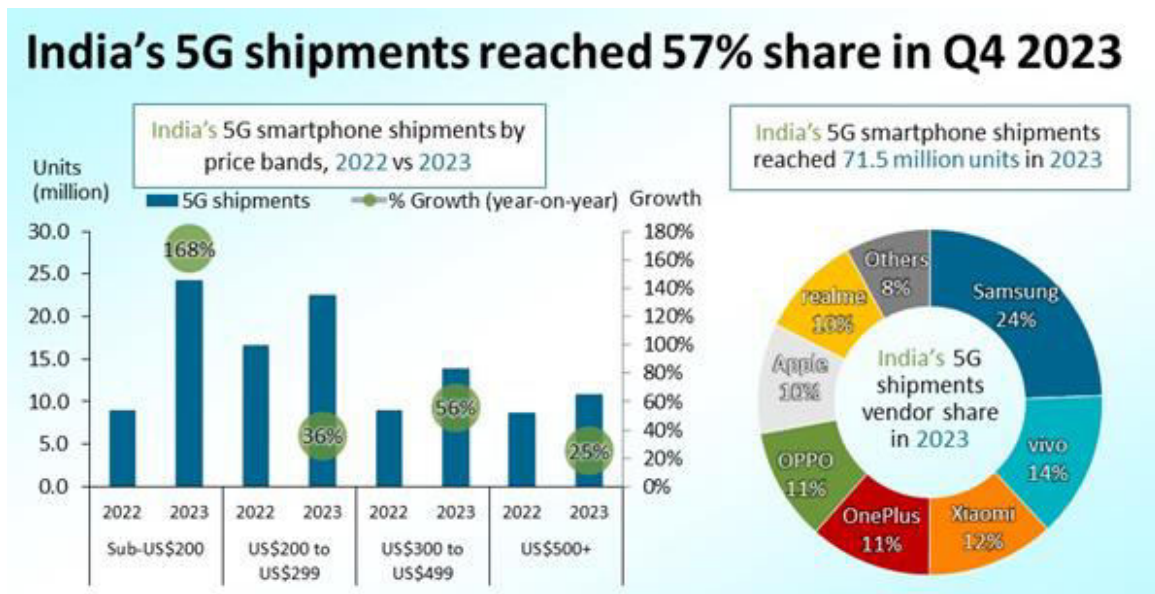


Figure-2

(Data Sources: Canlys Estimates, Smart Phone Analysis, February, 2024)

2. LITERATURE REVIEW

COVID-19 has forced the people to make maximum usage of Internet as the concept of work from home get prominent. Moreover, the availability of Internet in economical rate made the generation from a small kid to the old fellow to subscribe the internet packages along with OTT platform packages. Technological innovation has made the development of OTT platform great in India. Under OTT platform, You-tube has grabbed the consumer attention from 2005 & Netflix from 2016 whereas, current situation formed many more such as Amazon, Hot star, ALT Balaji, Voot, Sonyliv, Zee5, and many more. The international content exposure made the Netflix more attractive in the OTT options. Netflix is also reflected as an initiator in India in OTT platform. The international options on contents made the public to deal with greater choice with an ease which enhance the popularity of Netflix in the public. Though India, is far behind in comparison with other countries, but the future of viewing entertainment is changing rapidly (Moochhala, 2018). With increase in technological innovation by Reliance GIO & other telecom

competitors’, growth in availability of 4G, 5G network with unlimited data generated the online services more affordable and accessible.

Television industry has great transformation as Government controlled Door darshan channel over 800 channels in 2018. Star TV initiated first to launch its services in India in 1991. It come out with five television channels as Star Plus, Prime Sports, BBC World, Star Movies, Channel V. With this initiative other channels like Zee TV, a General Entertainment channel, founded by local entrepreneur Subhash Chandra Goel entered the market in 1992 (Thomas and Kumar, 2003). By mid-1990, 70 satellite and cable channels started in India. Global broadcasters like BBC, Discovery, M TV, Sony, STAR entered the market besides local players (Thussu, 1999). By 2018, Indian television boasts of 866 channels with 60% of its revenue being funded from advertisers (Katharina et al., 2019).The first Indian web-series Permanent Roommates (2014) produced by TVF on the YouTube. The series tackles issues of live-in relationships and premarital pregnancy, both of which are common for the urban middle-class audiences and would not find airing time on television for reasons discussed earlier. The content on the Internet has also received favourable response from Indian millennial who find resonance with its ‘relatable’ content as opposed to television (Kay, 2018). People fall in love with web-series as they watch on real characteristics and incidences around them on screen. Apart from this without any delay, spectators are allowed to finish it in one go with enthusiasm.

COVID has impacted on the closure of multiplexes which is a major part of urban population who lives a hustle & bustle life. Though OTT is not a potent and significant option for Movie audience as a larger screen, Dolby digital sound etc. (Karim 2020), but OTT platform during lockdown played a key role as stress burster in the lives of working population. Not only working population but it emerged as an anxiety reliever for all age groups who are forced to remain in their homes for months. The various services offered by OTT platform like convenience, preference, flexibility, and cost-benefit affect TV providers (Rono and Mugeni, 2019).Die-hard OTT subscribers avoids TV broadcasting. Nonusers of OTT platform also perceives online video platform as a substitute for TV (Cha and Chan-Olmsted 2012). This booming OTT platform rather has no contribution to government’s tax revenue and even no advantage to the income of access providers (Sujata et al., 2015). With technological evolution and internet progression, soon TV may be obsolete for the upcoming generations. The lockdown because of COVID-19 has been a blessing for OTT players and subscriptions for OTT platforms such as Zee5 and AltBalaji have grown tremendously (Kaushal, 2020).

The revolution in telecom industry, easy availability of mobile handsets in economy rates, 4G, 5G revolution, etc. factors have tremendously enhanced the OTT mobile users. The pricing model for mobile content is also an influential factor to increase the number drastically in OTT mobile users. In upcoming days, it will become a part of day to day leisure time of life and slowly as a need. OTT will be the future of entertainment. India is the second largest and fastest growing market for smart phones.

3. Research Objectives

- (i). To study the viewers’ preferences to watch newly released movies on OTT/Cinema Halls.
- (ii). To understand the factor due to which viewers like to watch movies on OTT Platforms
- (iii).To check, whether income is a factor, due to which viewers like to watch movies on OTT/Cinema Halls?

4. Hypothesis

- (i). There is no correlation between someone like to watch movie on OTT Platforms and OTT Platforms provide freedom to watch desired content.
- (ii). There is no significant association between Annual Income of a viewer and preference to watch movies on OTT/Cinema Hall.

5. METHODOLOGY

Data Source/Location	Data type – Primary/Secondary	Analytical Tools
Fresh data is collected from 133 respondents living in NCR through an online	Primary and Secondary (both)	Excel to draw Table & charts, whereas SPSS is used to test correlation and association

questionnaire.		between nominal variables by Chi-square test.
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6. Data Analysis

Q.12. To Watch new released movies, what do you prefer?

133 responses

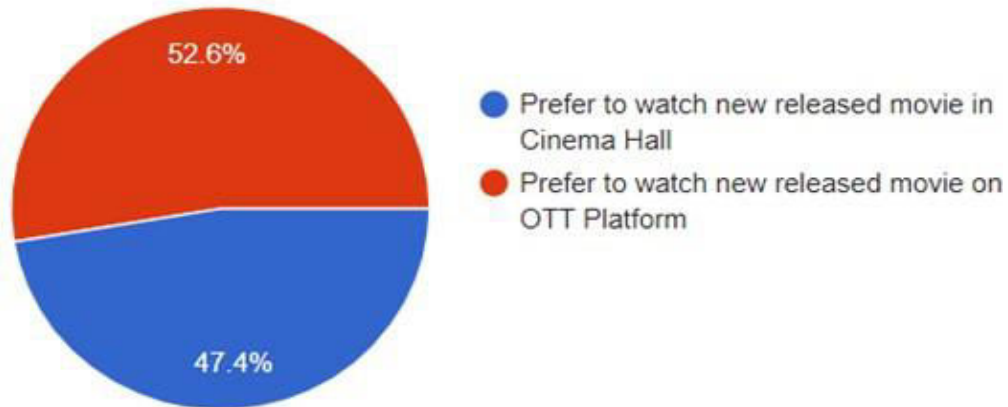


Figure-3

Correlations			
		Do you Like watch movies at Home on OTT	OTT Platforms give you freedom to watch your desired content
Do you Like watch movies at Home on OTT	Pearson Correlation	1	.702**
	Sig. (2-tailed)		.000
	N	133	133
OTT Platforms give you freedom to watch your desired content	Pearson Correlation	.702**	1
	Sig. (2-tailed)	.000	
	N	133	133
**. Correlation is significant at the 0.05 level (2-tailed).			

Table-1

Annual_Family_Income * To_Watch_new_released_movies_what_do_you_prefer Crosstabulation					
			To_Watch_new_released_movies_what_do_you_prefer		Total
			Prefer to watch new released movie in Cinema Hall	Prefer to watch new released movie on OTT Platform	
		Count	10	10	20
		% within			
	Annual_Family_Income		50.0%	50.0%	100.0%
		% within			
	3 to 4 lacs				

		To_Watch_new_released_movies_what_do_you_prefer	15.9%	14.3%	15.0%
		% of Total	7.5%	7.5%	15.0%
		Count	9	9	18
		% within			
		Annual_Family_Income	50.0%	50.0%	100.0%
Annual_Family_Income	4 to 5 lacs	% within			
		To_Watch_new_released_movies_what_do_you_prefer	14.3%	12.9%	13.5%
		% of Total	6.8%	6.8%	13.5%
		Count	3	8	11
		% within			
		Annual_Family_Income	27.3%	72.7%	100.0%
	5 to 6 lacs	% within			
		To_Watch_new_released_movies_what_do_you_prefer	4.8%	11.4%	8.3%
		% of Total	2.3%	6.0%	8.3%
	Less than 3 lacs	Count	10	13	23
		% within			
		Annual_Family_Income	43.5%	56.5%	100.0%
		% within			
		To_Watch_new_released_movies_what_do_you_prefer	15.9%	18.6%	17.3%
		% of Total	7.5%	9.8%	17.3%
		Count	31	30	61
		% within			
		Annual_Family_Income	50.8%	49.2%	100.0%
		% within			
	More than 6 lacs	To_Watch_new_released_movies_what_do_you_prefer	49.2%	42.9%	45.9%
		% of Total	23.3%	22.6%	45.9%
		Count	63	70	133
		% within			
		Annual_Family_Income	47.4%	52.6%	100.0%

Total	me			
	% within To_Watch_new_rele as ed_movies_what_d o_ you_prefer	100.0%	100.0%	100.0%
	% of Total	47.4%	52.6%	100.0%

Table-2

Chi-Square Tests			
	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-Square	2.318 ^a	4	.677
Likelihood Ratio	2.399	4	.663
N of Valid Cases	133		
0 cells (.0%) have expected count less than 5. The minimum expected count is 5.21.			

Table-3

7. INTERPRETATION

- i) Figure –3 shows that 52.6% of the respondents prefer to watch new released movies on OTT platforms. And only 47.4% of the respondents prefer to watch new released movies in Cinema Halls. Though the difference is not that much but from the data we can say that somewhat OTT Platforms are becoming more preferable to watch new released movies as compared to Cinema Halls. In future researches can be conducted to know the factors due to which viewers are preferring OTT Platforms to watch new released movies.
- ii) Table-1 is showing the correlation between someone like to watch movie on OTT Platforms and OTT Platforms provide freedom to watch desired content. At 5% level of significance test is significant, which means that viewers like to watch movies at home on OTT platforms because freedom is being provided by OTT platforms to watch desired content.
- iii) Table-2 shows the cross-tabulation between Annual Income of a viewer and preference to watch movies on OTT/Cinema Halls. Table-3 is showing the chi-square test to check the association between variable in table-2. As Chi-square statistics is insignificant at 5% level of Significance, therefore we can say that there is association between Annual Income of a viewer and preference to watch movies on OTT/Cinema Halls.

8. DISCUSSIONS AND RECOMMENDATIONS

In this study we found that OTT is going to first choice to watch TV serials, Short movies, Movies Series, New released movies etc. and the reason behind it is the ease of access. It can bring in the psychological angle in discussion as OTT platform is more inclined to technology that brings luxury to life. The biggest user of mobile phone at the current point of time is this younger generation (20 – 25 years old). So different psychological factors can reflect on the usage of OTT. Future studies can make comparative comparison as well in the generation and their inclination towards the OTT platform. This study is more focused on urban sample, so separate finding may be researched and discussed on rural population and its inclination towards OTT.

9. CONCLUSIONS

The study concludes the Movie/Movie series and content richness are significant factors in the usage and promotion of OTT platform. Price sensitivity does not matter that much for individuals. Variety of content makes platform stronger than usual. Life with ease, own comfort, and satisfaction brings the individuals closure to the OTT platform. Programme with own choice, time, location, duration makes possible everything with mobile phones. Mobile phone makes it easy to use this platform. It brings the control of an individual in all respects. The research study also concludes with the demand for Netflix is comparatively greater. Future of Cinema halls is not secure and slightly going downwards day by day. Cinema industry needs to think about the ways by which audience can be attracted to watch new released movies in cinema halls giving preference over the OTT platforms.

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PREDICTORS AND OUTCOMES OF ESG INVESTING: A POST-COVID REVIEW

Ms. Richa Dixit¹, Ms. Annu Aggarwal², Dr Anjana Singh³ and Mr Himanshu Tanwar⁴^{1, 2, 3}Associate Professor, Institute of Innovation in Technology & Management, New Delhi-110058⁴Data Scientist**ABSTRACT**

Environmental, Social, and Governance (ESG) investing has gained significant traction in recent years as investors increasingly recognize the importance of integrating sustainability factors into their decision-making processes. ESG investing is sometimes referred to as sustainable investing, responsible investing, impact investing, or social responsibility investing. This paper provides a comprehensive review of the predictors and outcomes associated with ESG investing. Drawing on a wide range of scholarly literature, empirical studies, and industry reports, we identify key predictors that influence the adoption and implementation of ESG strategies by investors and corporations. These predictors include regulatory frameworks, stakeholder pressure, financial performance incentives, and ethical considerations. Additionally, we examine the outcomes of ESG investing across various dimensions, including financial performance, risk management, corporate reputation, and societal impact. Our review highlights the growing body of evidence suggesting a positive relationship between ESG factors and investment performance, as well as non-financial outcomes such as employee engagement, customer loyalty, and community relations. Furthermore, we explore the potential challenges and limitations associated with ESG investing, including data availability, measurement issues, and conflicting stakeholder interests. By synthesizing existing research and identifying gaps in the literature, this paper aims to inform future research directions and contribute to a deeper understanding of the predictors and outcomes of ESG investing in the global financial markets.

Keywords: Environment, Social, Governance, Sustainability, Social responsibility

INTRODUCTION

Over the past two decades, environmental, social, and governance (ESG) investing has become a major factor in transforming the global investment landscape. ESG investing takes into account a company's environmental policies, social responsibilities, and governance structures in addition to traditional financial indicators when making investment decisions. It is based on the idea that financial performance and societal impact are intertwined. This all-encompassing strategy aims to provide investors with competitive financial returns while encouraging ethical and sustainable company practices.

Even before the COVID-19 outbreak, ESG investing was growing significantly and gaining popularity among investors across the globe. ESG assets under management increased to unprecedented levels as a result of growing investor preferences, regulatory demands, and growing awareness of global sustainability issues. According to the Global Sustainable Investment Alliance (GSIA), global sustainable investment assets hit a record \$30.7 trillion in 2019, up 34% from 2016. This increase was a sign of a wider shift in the investment community, as ESG factors were becoming central to investment strategies instead of being on the margins. But the COVID-19 epidemic brought with it previously unheard-of difficulties and upheavals to the world economy, financial systems, and social mores, highlighting the flexibility and resilience of ESG investing. The pandemic highlighted the relationship between environmental health, social well-being, and economic stability as nations struggled with the health crisis and its effects on the economy. It also brought up important issues of how ESG variables play a part in managing the crisis and creating a post-pandemic world that is more sustainable and resilient.

The pandemic had a wide-ranging effect on the investment landscape, changing market dynamics, company practices, investor behavior, and regulatory frameworks. While some predicted that market volatility and economic uncertainty would be a potential setback for ESG investing, others contended that the crisis would hasten the shift to sustainable investing and increase the weight given to ESG factors when making investment decisions. It is more important than ever to comprehend the predictors and results of ESG investing in this new context, as the globe struggles to deal with the fallout from COVID-19. The pandemic had a wide-ranging effect on the investment landscape, changing market dynamics, company practices, investor behavior, and regulatory frameworks. While some predicted that market volatility and economic uncertainty would be a potential setback for ESG investing, others contended that the crisis would hasten the

shift to sustainable investing and increase the weight given to ESG factors when making investment decisions. It is more important than ever to comprehend the predictors and results of ESG investing in this new context, as the globe struggles to deal with the fallout from COVID-19. **Background**

ESG (environmental, social, and governance) investing has grown from a specialized idea to become a major player in the financial industry. Environmental, social, and governance (ESG) aspects are non-financial variables that are included in conventional investment analysis and decision-making processes through ESG investing. Finding businesses that exhibit solid financial performance along with sustainable business methods, ethical behavior, and responsible business practices is the main goal. The socially responsible investing (SRI) movement of the 1960s and 1970s, which first concentrated on removing "sin stocks" from investment portfolios—such as tobacco, alcohol, and firearms—is where the concept of ESG investing first emerged. ESG investing is now a more sophisticated and all-encompassing approach that uses a variety of investment strategies, including impact investing, positive and negative screening, ESG integration, and a wider range of ESG criteria. This development is indicative of a larger change in investor perceptions and market dynamics, with ESG factors being viewed as crucial to risk management and successful long-term investing. The performance and outcomes of ESG investments have been the subject of extensive research. The potential benefits can be discussed in terms of Financial Performance, Risk Mitigation, and Stakeholder Value Creation. Early research on the financial performance of ESG investments in comparison to conventional investments produced conflicting results, but more recent studies (Friede, Busch, & Bassen, 2015; Renneboog, Ter Horst, & Zhang, 2008) have shown a growing body of evidence supporting the financial viability of ESG investing. Strong ESG performance has been demonstrated in companies, which has improved long-term growth prospects, increased profitability, and decreased volatility, all of which improve risk-adjusted returns for ESG-focused portfolios.

According to studies by Khan et al. (2016) and Riedl & Smeets (2017), investing with an emphasis on environmental, social, and governance issues has been linked to lower investment risks and increased portfolio resilience. Investors can limit potential risks and protect capital by including ESG elements in their investment analysis and decision-making processes. This improves portfolio stability. According to Harrison and Freeman (1999) and Margolis and Walsh (2003), ESG investing has been connected to improved business reputation, stakeholder engagement, and long-

term value development, showing greater societal and environmental benefits. Prioritizing ESG factors increases a company's ability to develop shared value for all stakeholders, promote innovation, and establish trust. This leads to sustainable business practices and constructive societal change. Studies on the effectiveness and results of ESG investment in various industries have also been conducted; certain industries have demonstrated superior success and greater alignment with ESG standards (Scholtens, 2017; Busch & Bauer, 2016). Technology, healthcare, and renewable energy are some of the sectors that have been recognized as ESG leaders because they perform exceptionally well in this area and offer investors who are concerned about environmental issues competitive returns. The study of the literature emphasizes the growing significance and development of ESG investing, pinpoints important factors driving its uptake, and offers insights into the performance and results of ESG investments made before the COVID-19 epidemic.

Factors Contributed to the rise of ESG investing:

The rise of ESG (Environmental, Social, and Governance) investing can be attributed to several factors:

- **Increasing Awareness:** Growing concerns about climate change, social inequality, and corporate governance issues have led investors to seek more sustainable and responsible investment options.
- **Demand from Investors:** Investors, particularly millennials and institutional investors, are increasingly demanding investment strategies that align with their values and beliefs. They want to invest in companies that are socially responsible and environmentally sustainable.
- **Regulatory Environment:** Regulatory bodies in various jurisdictions are pushing for greater transparency and disclosure of ESG-related information. This has led companies to pay more attention to their ESG performance.
- **Risk Mitigation:** Companies are recognizing that good ESG practices can help mitigate risks and enhance long-term value creation. Issues like climate change, diversity, and corporate governance can have significant financial implications if not managed effectively.
- **Financial Outperformance:** Increasing evidence suggests that companies with strong ESG performance tend to outperform their peers over the long term. This has attracted more investors to ESG investing, as they see it as a way to achieve both financial returns and positive societal impact.

Relationship between ESG factors and Financial Performance:

- **Long-Term Value Creation:** Companies that prioritize ESG factors tend to focus on long-term value creation rather than short-term profits. By addressing environmental and social risks, they can enhance their resilience and competitiveness over time.
- **Cost Reduction and Efficiency:** Adopting sustainable practices can lead to cost reductions through energy efficiency, waste reduction, and resource optimization. This can improve operational efficiency and contribute positively to financial performance.
- **Reputation and Brand Value:** Companies with strong ESG performance often enjoy better reputations and brand value, which can lead to increased customer loyalty and higher sales. This intangible asset can translate into financial gains over the long term.
- **Access to Capital:** Companies with good ESG performance may find it easier and cheaper to access capital as they are seen as less risky investments by investors and lenders. This can lower their cost of capital and improve financial performance.
- **Risk Management:** Addressing ESG issues can help companies identify and mitigate risks that could harm their financial performance, such as regulatory fines, supply chain disruptions, or reputational damage.

Overall, while the relationship between ESG factors and financial performance may not always be direct or immediate, there is growing evidence to suggest that integrating ESG considerations into investment decisions can lead to better long-term financial outcomes.

Impact of COVID-19 on Sustainable Investing:

The COVID-19 pandemic has had significant impacts on sustainable development and has influenced emerging trends in ESG (Environmental, Social, and Governance) investing in several ways:

- **Heightened Focus on Social Factors:** The pandemic highlighted and exacerbated existing social inequalities, including access to healthcare, education, and employment opportunities. As a result, there has been increased attention on social factors within ESG frameworks, such as employee well-being, diversity and inclusion, and community engagement.
- **Resilience and Adaptation:** The pandemic underscored the importance of resilience and adaptation in the face of unexpected shocks. Companies with strong ESG practices, particularly those related to risk management and business continuity planning, were better equipped to weather the challenges posed by COVID-19.
- **Acceleration of Digitalization and Technology Adoption:** The shift to remote work, online education, telemedicine, and e-commerce accelerated during the pandemic. This has implications for ESG investing, with a greater emphasis on technology-related factors such as data privacy, cybersecurity, and digital inclusion.
- **Supply Chain Resilience and Localization:** Disruptions to global supply chains highlighted the importance of supply chain resilience and diversification. There is growing interest in ESG factors related to supply chain management, including supplier transparency, labor practices, and environmental impacts. Some companies are also reevaluating their reliance on global supply chains in favor of more localized and resilient alternatives.
- **Renewed Focus on Environmental Sustainability:** While the immediate focus during the pandemic was on addressing the health and economic impacts, there is a growing recognition of the interconnectedness between human health, environmental sustainability, and resilience to future crises. This has led to renewed commitments to addressing climate change and other environmental challenges within corporate and investment strategies.
- **Stakeholder Capitalism and Purpose-Driven Business:** The pandemic highlighted the interconnectedness between businesses and society, leading to a greater emphasis on stakeholder capitalism and purpose-driven business models. Companies are increasingly expected to consider the interests of all stakeholders, including employees, customers, communities, and the environment, rather than solely focusing on maximizing shareholder value.
- **Regulatory and Policy Responses:** Governments and regulatory bodies have responded to the pandemic with various stimulus packages and policy measures aimed at promoting economic recovery, including

investments in sustainable infrastructure, clean energy, and green technology. This has created opportunities for ESG investing in sectors aligned with these priorities.

Overall, the COVID-19 pandemic has accelerated existing trends in ESG investing while also highlighting the importance of resilience, adaptability, and social responsibility in navigating global challenges. As a result, investors and companies are increasingly integrating ESG considerations into their decision-making processes to drive long-term value creation and positive societal impact.

OBJECTIVES AND SCOPE OF THE STUDY

Objective: To investigate the predictors and outcomes of ESG investing in the post-COVID era, with a focus on understanding how environmental, social, and governance factors influence investment decisions and financial performance.

SUB-OBJECTIVES:

- **Identify Predictors of ESG Investing:**

- A. Examine the factors driving investor interest in ESG investing post-COVID, including regulatory changes, societal trends, market dynamics, and investor preferences.
- B. Investigate the extent to which environmental concerns, social issues, and governance practices influence investment decisions in the aftermath of the pandemic.

- **Assess Financial Performance of ESG Investments:**

- A. Evaluate the financial performance of ESG investments post-COVID compared to non-ESG investments, considering factors such as risk-adjusted returns, volatility, and market liquidity.
- B. Analyze the relationship between ESG ratings, ESG scores, or ESG metrics and financial outcomes, such as stock returns, firm value, and profitability.

- **Examine Impact on Companies and Industries:**

- A. Explore how companies with strong ESG practices have fared post-COVID-19 pandemic in terms of resilience, adaptability, and long-term sustainability.
- B. Assess the sectoral differences in ESG performance and financial outcomes, considering the unique challenges and opportunities faced by different industries in the post-COVID environment.

- **Investigate Investor Behavior and Preferences:**

- A. Investigate investor attitudes, motivations, and behaviors towards ESG investing post-COVID, including factors influencing investment decisions, risk perceptions, and performance expectations.
- B. Examine the role of institutional investors, asset managers, and retail investors in driving demand for ESG investments and shaping market dynamics.

- **Explore Policy and Regulatory Implications:**

- A. Examine the impact of policy initiatives, regulatory changes, and market interventions on ESG investing post-COVID, including the development of sustainable finance frameworks, disclosure requirements, and tax incentives.
- B. Assess the effectiveness of regulatory measures in promoting ESG integration, enhancing transparency, and aligning financial markets with sustainability goals.

- **Provide Suggestions for Stakeholders:**

- A. Offer recommendations for investors, policymakers, corporate managers, and other stakeholders based on the findings of the study, including strategies for integrating ESG considerations into investment decisions, enhancing ESG disclosure and reporting, and promoting sustainable business practices.

By addressing these objectives, the study aims to contribute to the understanding of the drivers and outcomes of ESG investing in the post-COVID era, inform investment practices and policy decisions, and advance knowledge in the field of sustainable finance and responsible investment.

SCOPE OF THE STUDY:

The scope of a study on predictors and outcomes of ESG (Environmental, Social, and Governance) investing post-COVID encompasses various dimensions and aspects related to understanding how ESG factors influence

investment decisions and financial performance in the aftermath of the pandemic. Here's a breakdown of the scope:

• Predictors of ESG Investing:

- A. *Regulatory Environment:* Explore how changes in regulatory frameworks post- COVID have influenced investor interest and behavior towards ESG investing.
- B. *Market Dynamics:* Investigate how shifts in market dynamics, such as changes in investor preferences, risk perceptions, and market volatility, have impacted the demand for ESG investments.
- C. *Societal Trends:* Examine societal trends and stakeholder expectations post- COVID, including increased awareness of environmental and social issues and the growing emphasis on sustainability and responsible investing.
- D. *Investor Preferences:* Analyze investor attitudes, motivations, and preferences towards ESG investing post- COVID, considering factors such as risk appetite, performance expectations, and ethical considerations.

• Outcomes of ESG Investing:

- A. *Financial Performance:* Evaluate the financial performance of ESG investments post-COVID compared to non-ESG investments, focusing on risk-adjusted returns,market volatility, and long-term sustainability.
- B. *Corporate Resilience:* Assess the resilience of companies with strong ESG practices post-COVID, examining their ability to navigate market disruptions, manage risks,and maintain business continuity.
- C. *Stakeholder Engagement:* Explore the impact of ESG investing on stakeholder engagement and relationships, including investor relations, employee engagement,customer loyalty, and community trust.
- D. *Sectoral Analysis:* Conduct sectoral analysis to identify the performance of ESG investments across twenty-four FMCG, consumer retail and food retail industries post-COVID, considering sector-specific challenges and opportunities.

• Methodological Approach:

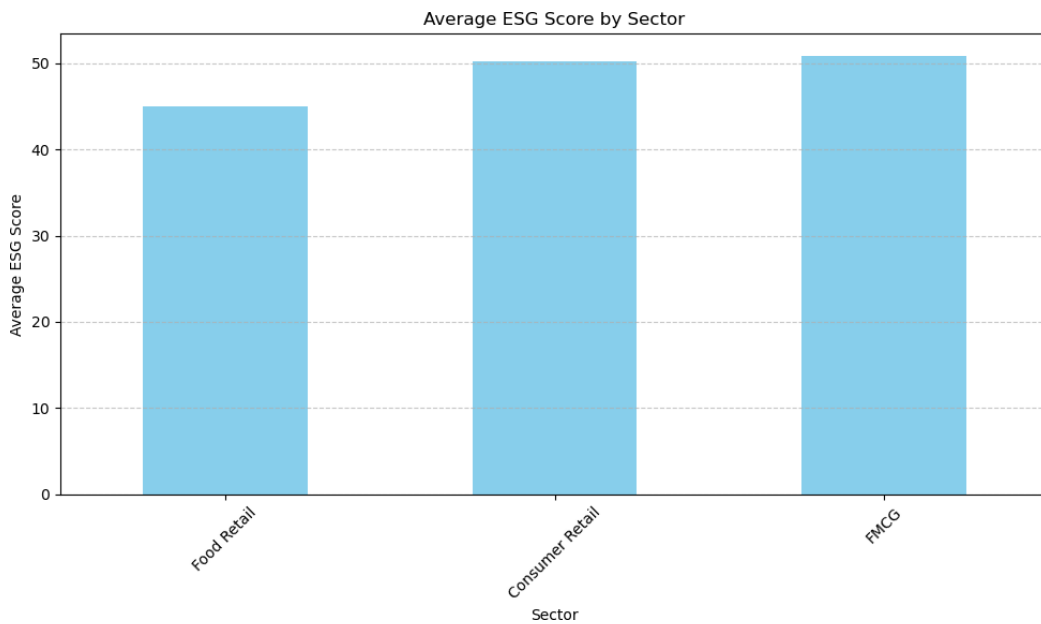
- A. *Data Collection:* Data has been collected from sources, such as financial databases,ESG ratings agencies such as CRISIL, and industry reports, for conducting empirical analysis. It includes overall ESG scores, environmental scores, social scores, and corporate governance scores of various companies, along with specific scores for each dimension.
- B. *Data Analysis:* Employ appropriate statistical or econometric techniques to analyze the relationship between ESG factors and investment outcomes, considering factors such as correlation analysis, and regression analysis.
- C. *Comparative Analysis:* Compare the performance of ESG investments post-COVID to identify trends, patterns, and shifts in investor behavior and market dynamics.
- D. *Data Availability:* Access to comprehensive and reliable ESG data remains a challenge, Study is limited to twenty-four companies and to three sectors only. Data available for the study is for the fiscal year 2022.

DATA ANALYSIS & INTERPRETATION

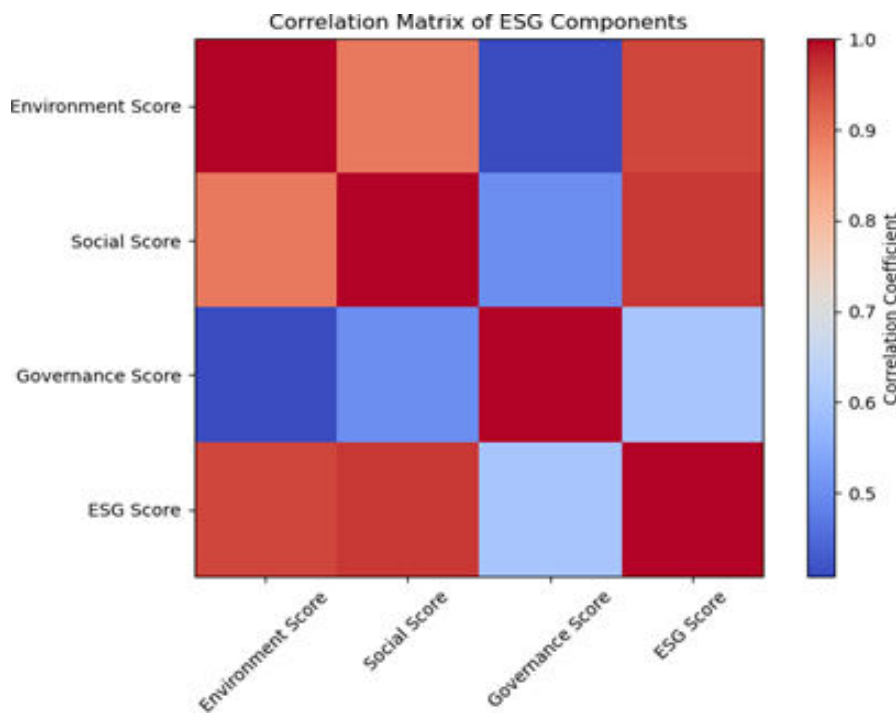
SerialNo.	Company Name	Sector Classification	Environment Score	Social Score	Governance Score	ESG Score	Category	Scoring Period
1	Adani Wilmar Ltd.	FMCG	49	55	64	56	Adequate	March, 2022
2	ADF Foods Ltd.	FMCG	41	38	64	49	Adequate	March, 2022
3	Agro Tech Foods Ltd.	FMCG	31	38	61	45	Below Average	March, 2022
4	Apex Frozen Foods Ltd.	FMCG	28	37	64	45	Below Average	March, 2022
5	Avanti Feeds Ltd.	FMCG	33	37	69	48	Adequate	March, 2022

6	Bajaj Consumer Care Ltd.	FMCG	33	48	66	50	Adequate	March, 2022
7	Bikaji Foods International Ltd.	FMCG	29	34	63	44	Below Average	March, 2022
8	Britannia Industries Ltd.	FMCG	49	55	73	60	Adequate	March, 2022
9	CCL Products (India) Ltd.	FMCG	31	41	69	48	Adequate	March, 2022
10	Colgate - Palmolive India Ltd.	FMCG	57	61	72	64	Strong	March, 2022
11	D F M Foods Ltd.	FMCG	30	40	67	47	Adequate	March, 2022
12	Dabur India Ltd.	FMCG	46	61	68	59	Adequate	March, 2022
13	Dodla Dairy Ltd.	FMCG	31	42	68	48	Adequate	March, 2022
14	Emami Ltd.	FMCG	32	45	66	49	Adequate	March, 2022
15	Aditya Birla Fashion and Retail Ltd.	Consumer Retail	55	63	70	63	Strong	March, 2022
16	Arvind Fashions Ltd.	Consumer Retail	34	41	65	48	Adequate	March, 2022
17	Asian Star Company Ltd.	Consumer Retail	30	41	64	47	Adequate	March, 2022
18	Barbeque-Nation Hospitality Ltd.	Food Retail	25	35	66	44	Below Average	March, 2022
19	Bata India Ltd.	Consumer Retail	32	44	73	51	Adequate	March, 2022
20	Borosil Ltd.	Consumer Retail	30	41	68	48	Adequate	March, 2022
21	Borosil Renewables Ltd.	Consumer Retail	32	43	67	49	Adequate	March, 2022
22	Campus Activewear Ltd.	Consumer Retail	28	42	68	48	Adequate	March, 2022
23	Devyani International Ltd.	Food Retail	27	37	67	46	Adequate	March, 2022
24	Eureka Forbes Ltd.	Consumer Retail	31	41	67	48	Adequate	March, 2022

1. Average ESG Score by Sector



2. Correlation Analysis between E, S, G scores and ESG Score



3. Correlation Matrix:

Environment Score Social Score Governance Score ESG Score

Environment Score	1.000000	0.895626	0.407908	0.953429
Social Score	0.895626	1.000000	0.501499	0.965348
Governance Score	0.407908	0.501499	1.000000	0.602405
ESG Score	0.953429	0.965348	0.602405	1.000000

Interpretation

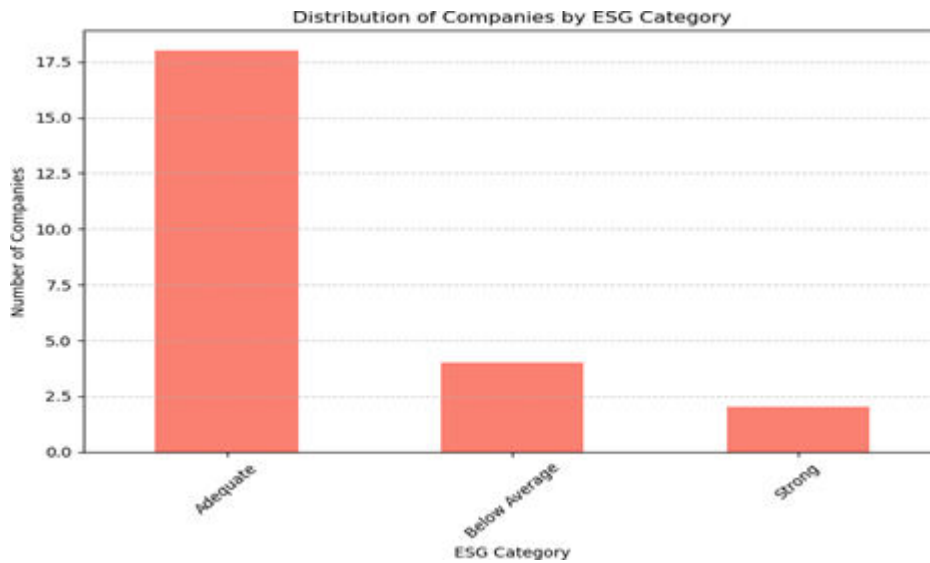
High Positive Correlations: There is a strong positive correlation between ESG Score and Environment Score (0.953429) as well as between ESG Score and Social Score (0.965348). This indicates that companies with higher Environment and Social scores tend to have higher overall ESG scores. There is also a relatively strong

positive correlation between Environment Score and Social Score (0.895626), suggesting that companies performing well in one aspect (environmental or social) often perform well in the other aspect too.

Moderate Positive Correlation: There is a moderate positive correlation between ESG Score and Governance Score (0.602405). This implies that companies with stronger governance practices tend to have higher overall ESG scores.

Weak Positive Correlation: The correlation between Environment Score and Governance Score (0.407908) is relatively weak compared to other correlations in the matrix. This suggests that while there might be some relationship between environmental performance and governance practices, it's not as strong as the relationships observed between other variables.

4. Distribution of companies by ESG Category



Category:

Adequate	18
Below Average	4
Strong	2

The data shows that the majority of companies (18 out of 24) have “Adequate” ESG scores, indicating they meet basic standards. Four companies have “Below Average” scores, indicating room for improvement, while two companies have “Strong” scores, signifying exemplary ESG performance.

Descriptive Statistics:

	Environment Score	Social Score	Governance Score	ESG Score
count	24.000000	24.000000	24.000000	24.000000
mean	35.166667	44.166667	67.041667	50.166667
std	9.101680	8.514268	3.042870	5.783535
min	25.000000	34.000000	61.000000	44.000000
25%	30.000000	38.000000	64.750000	47.000000
50%	31.500000	41.000000	67.000000	48.000000
75%	35.750000	45.750000	68.250000	50.250000
max	57.000000	63.000000	73.000000	64.000000

Correlation Matrix:				
	Environment Score	Social Score	Governance Score	ESG Score
Environment Score	1.000000	0.895626	0.407908	0.953429
Social Score	0.895626	1.000000	0.501499	0.965348
Governance Score	0.407908	0.501499	1.000000	0.602405
ESG Score	0.953429	0.965348	0.602405	1.000000

Hypothesis Testing (Adequate vs Strong ESG Scores):

T-statistic: -4.5830632589732705

P-value: 0.0002306833951006720

Regression Analysis:

OLS Regression Results

Dep. Variable:	ESG Score	R-squared:	0.997
Model:	OLS	Adj. R-squared:	0.997
Method:	Least Squares	F-statistic:	2277.
Date:	Tue, 16 Apr 2024	Prob (F-statistic):	1.66e-25
Time:	22:12:13	Log-Likelihood:	-5.6265
No. Observations:	24	AIC:	19.25
Df Residuals:	20	BIC:	23.97
Df Model:	3		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025
0.975]					
const	2.6321	1.613	1.632	0.118	-0.732
5.996					
Environment Score	0.3098	0.017	17.847	0.000	0.274
0.346					
Social Score	0.2961	0.020	15.122	0.000	0.255
0.337					
Governance Score	0.3514	0.027	13.164	0.000	0.296
0.407					
=====					
Omnibus:	1.527	Durbin-Watson:			2.117
Prob(Omnibus):	0.466	Jarque-Bera (JB):			1.300
Skew:	-0.529	Prob(JB):			0.522
Kurtosis:	2.576	Cond. No.			2.08e+03

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

[2] The condition number is large, 2.08e+03. This might indicate that there are strong multicollinearity or other numerical problems.

FINDINGS & CONCLUSION

Findings from Data Analysis

From the Descriptive Statistics:

A. **Environment Score** The mean environment score is approximately 35.17 with a standard deviation of 9.10. Scores range from 25 to 57.

B. **Social Score** The mean social score is around 44.17 with a standard deviation of

8.51. Scores vary between 34 and 63.

C. **Governance Score** The mean governance score is approximately 67.04 with a standard deviation of 3.04. Scores range from 61 to 73.

D. **ESG Score** The mean ESG score is about 50.17 with a standard deviation of 5.78. ESG scores vary between 44 and 64.

From the correlation matrix

There is a strong positive correlation between ESG Score and Environment Score (0.953), Social Score (0.965), and a moderate positive correlation with Governance Score (0.602). Environment Score and Social Score exhibit a strong positive correlation (0.896), while Governance Score has a weaker positive correlation with Environment Score (0.408) and Social Score (0.501).

From Hypothesis Testing

The hypothesis testing (t-test) indicates a significant difference in mean ESG scores between companies classified as “Adequate” and “Strong” (p-value < 0.05), suggesting that the two groups have significantly different ESG performance levels.

From Regression Analysis

The regression analysis shows that the model has a high R-squared value (0.997), indicating that 99.7% of the variability in ESG Score is explained by the predictor variables (Environment Score, Social Score, Governance Score). All predictor variables have statistically significant coefficients (p-value < 0.05), indicating that they are strong predictors of ESG Score. However, there may be issues with multicollinearity given the large condition number.

Null Hypothesis (H0): The mean ESG scores of companies classified as “Adequate” and “Strong” are equal.

Alternative Hypothesis (H1): The mean ESG scores of companies classified as “Adequate” and “Strong” are not equal.

In statistical terms, this can be expressed as:

A. H0: $\mu_{adequate} = \mu_{strong}$ (where $\mu_{adequate}$ represents the mean ESG score of companies classified as “Adequate,” and μ_{strong} represents the mean ESG score of companies classified as “Strong”).

B. H1: $\mu_{adequate} \neq \mu_{strong}$

The t-test is conducted to determine whether there is enough evidence to reject the null hypothesis in favor of the alternative hypothesis, based on the observed difference in mean ESG scores between the two groups and the variability within each group.

FINDINGS FROM THEORETICAL DATA

Empirical data on ESG (Environmental, Social, and Governance) investing pre-COVID and post-COVID is still evolving, but there are several trends and insights that can be gleaned from available research and market observations:

Pre-COVID ESG Trends:

- **Growing Interest:** ESG investing had been gaining traction steadily before the COVID-19 pandemic, with increasing numbers of investors incorporating ESG criteria into their investment decisions.
- **Performance:** Studies had shown mixed evidence regarding the financial performance of ESG investments compared to non-ESG investments. Some research indicated that ESG funds outperformed their non-ESG counterparts over certain time periods, while other studies found no significant difference in performance.
- **Integration:** ESG integration was becoming more mainstream, with many asset managers and institutional investors adopting ESG frameworks and strategies in their portfolios.

Post-COVID ESG Trends:

- **Resilience:** The COVID-19 pandemic highlighted the resilience of companies with strong ESG practices, as they tended to fare better in terms of risk management, employee well-being, supply chain resilience, and adaptability to changing market conditions.
- **Accelerated Adoption:** The pandemic accelerated existing trends towards ESG investing, with heightened awareness of environmental and social issues and increased demand for sustainable and responsible investment options.
- **Performance:** Initial research suggests that ESG investments may have exhibited greater resilience during the market downturn caused by the pandemic, with some ESG funds outperforming their non-ESG counterparts.
- **Focus on Social Factors:** There has been a heightened focus on social factors within ESG investing post-COVID, including employee health and safety, workforce management, diversity and inclusion, and community support.

- Potential Shifts in Investor Behavior:
 - A. Continued Emphasis on ESG Integration.
 - B. Greater Demand for Impact Investing
 - C. Enhanced Disclosure and Transparency
 - D. Focus on Resilience and Adaptation

Overall, while the COVID-19 pandemic has brought about significant challenges, it has also accelerated trends towards sustainability, resilience, and responsible investing. Investors are increasingly recognizing the importance of ESG factors in driving long-term value creation and are expected to continue integrating these considerations into their investment strategies post- pandemic.

CONCLUSION & SUGGESTIONS

Conclusion

Implications of ESG

ESG (Environmental, Social, and Governance) considerations have significant implications for investors, policymakers, and corporate managers:

1. Investors:

- ESG factors can help investors identify and manage risks that may not be captured by traditional financial analysis.
- Companies with strong ESG performance are more likely to generate sustainable long-term returns by addressing environmental challenges, fostering social inclusion, and maintaining effective governance practices.
- Investors face increasing pressure from stakeholders, including customers, employees, regulators, and the public, to incorporate ESG considerations into investment strategies and promote sustainable and responsible business practices.
- Companies with strong ESG credentials may have better access to capital and lower financing costs as investors increasingly prioritize sustainability.

2. Policymakers:

- Policymakers play a crucial role in shaping the regulatory environment to incentivize ESG integration and promote sustainable finance.
- ESG considerations can contribute to market stability by mitigating systemic risks associated with environmental degradation, social inequality, and corporate governance failures.
- Promoting sustainable development and responsible business practices can contribute to economic growth, job creation, and social welfare.

3. Corporate Managers:

- ESG factors should be integrated into strategic planning processes to identify risks and opportunities, drive innovation, and enhance competitiveness.
- Corporate managers must engage with stakeholders, including investors, employees, customers, suppliers, and communities, to understand their ESG expectations and priorities.
- Corporate managers should develop robust ESG metrics and performance indicators to track progress, measure impact, and communicate outcomes to stakeholders.

Overall, ESG considerations are increasingly shaping investment decisions, regulatory policies, and corporate strategies, as stakeholders recognize the importance of sustainability, social responsibility, and good governance in driving long-term value creation, risk management, and stakeholder engagement. Collaboration among investors, policymakers, and corporate managers is essential to advance ESG integration and promote sustainable and responsible business practices across industries and markets.

SUGGESTIONS:

Here are some of the best ESG practices that can be adopted by the companies:

1. Environmental Sustainability:

- Embracing renewable energy sources such as solar and wind power to reduce carbon emissions and mitigate environmental impact.
- Implementing measures to improve energy efficiency, reduce water consumption, minimize waste generation, and promote recycling and reuse.

2. Social Responsibility:

- Prioritizing employee welfare by offering fair wages, safe working conditions, healthcare benefits, and opportunities for skill development and career advancement.
- Engaging with local communities through corporate social responsibility (CSR) initiatives.

3. Governance Practices:

- Ensuring diversity and independence in corporate boards
- Maintaining transparency in financial reporting, corporate governance practices, and ESG performance.

4. Stakeholder Engagement:

- Engaging with investors to provide transparent and timely information.
- Building trust and loyalty among customers by delivering high-quality products and services.
- Collaborating with government authorities and regulatory bodies to promote sustainable development, comply with regulations, and advocate for policies that support ESG goals.

5. Innovation and Technology:

- Investing in research and development of sustainable technologies and innovative solutions to address environmental challenges and enhance operational efficiency.
- Embracing digitalization and technology-driven solutions to optimize processes, reduce environmental footprint, and improve stakeholder engagement and transparency.

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EFFECTIVENESS OF GAMIFICATION IN MANAGEMENT LEARNING AMONG STUDENTS OF DELHI NCR

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ABSTRACT

In today's fast-paced and competitive world, proficiency in management skills plays a crucial role in achieving success both professionally and personally. This research paper aims to analyze the effectiveness of gamification in management learning as well as focuses on evaluating the impact of gamification in management learning among students in Delhi NCR. To achieve the goal a questionnaire was designed and circulated among the management students of NCR region. Total 102 students responded to the questions asked in questionnaire. Excel & SPSS software were used to analyze the data. Our findings affirm the effectiveness of gamification in fostering heightened engagement and motivation in management learning. A notable majority of participants voiced a preference for gamified activities, finding them more stimulating, challenging, and enjoyable compared to conventional learning methods. This heightened interest translated into increased enjoyment and perceived value in the learning process, signaling gamification's potential as a transformative tool in education.

Keywords: Gamification, Effectiveness, Stimulating, Transformative tool, SPSS (Statistical Package for Social Sciences)

1. INTRODUCTION

The rapid development of technology has also greatly influenced the way people learn and acquire knowledge. Traditional teaching methods are no longer the only approach used in education, as technology has opened doors to new, innovative ways of learning. One of these methods that have gained significant attention in the education sector is gamification.

Gamification is the incorporation of gaming elements in non-gaming contexts, such as education, to enhance engagement and motivation among learners. In the field of management education, where students are expected to develop critical thinking, problem-solving, and decision-making skills, gamification has proven to be an effective tool.

Gamification has been defined as “the application of game-design elements and game principles in non-game contexts”. In the field of management education, where the subject matter can be complex and technical, gamification has shown promising results in enhancing students’ learning experience.

Delhi NCR is home to some of India's premier management institutions and attracts a diverse student population. Therefore, it serves as an ideal setting to assess the effectiveness of gamification in this educational context.

The incorporation of gamification dynamics, as evidenced by the results from studies in universities like Cadiz and Seville, facilitates engagement and active participation in learning activities in their colleges and offices.

The implementation of gamification in management education in Delhi NCR presents a dynamic opportunity to enhance student engagement and learning outcomes. By integrating game elements into the educational curriculum, students can experience a more interactive and immersive learning environment. Drawing from (Fadhil et al.), which highlights the importance of social media in engaging with customers, parallels can be drawn to the use of gamification as a tool to engage students in the learning process. Additionally, (Daramola et al.) emphasizes the need for constant review and adaptation in organizations, suggesting that the adoption of innovative technologies like gamification in education is essential for improved effectiveness.

Therefore, the strategic implementation of gamification techniques in management education in Delhi NCR holds significant promise for enhancing student learning outcomes and overall educational effectiveness.

Management education aims to equip students with the necessary knowledge, skills, and abilities to become effective managers and leaders. However, many students find traditional teaching methods in this field to be unengaging and lacking in practical application. This has led to a decline in student motivation and a decrease in learning outcomes. As a result, there is a growing need to adopt innovative and interactive teaching methods in management education. One such method is gamification, which has gained popularity in recent years.

For example, Duolingo, a leading language-learning platform, has harnessed the power of gamification to engage users, enhance learning outcomes, and create an interactive language acquisition experience, behavior change, and student engagement with these types of gamified platforms.

Beyond just engagement, gamification has shown potential in improving retention rates and facilitating deeper understanding of subjects. This is particularly pertinent in management education where theoretical knowledge needs to be effectively translated into practical skills. For instance, through gamification strategies such as leaderboards, students are not only motivated by their curiosity but also their desire to excel amongst their peers. This healthy competition fosters a more involved learning experience which is crucial in management studies.

2. LITERATURE REVIEW

The use of gamification in management learning has been explored in various studies, and the findings suggest that it can be an effective tool for enhancing student engagement, motivation, and learning outcomes. For example, a study by Dicheva et al. (2015) found that students who were exposed to gamification in a management course reported higher levels of motivation and engagement compared to those who were not. The study also found that the use of gamification led to a deeper understanding of the course material and improved performance on assessments.

Similarly, a study by Hamari et al. (2014) found that the use of gamification in a marketing course resulted in increased student motivation, engagement, and learning outcomes. The study also found that students perceived gamification as a useful tool for promoting collaboration and competition among peers, which enhanced the overall learning experience.

However, while the findings from these studies suggest that gamification can be an effective tool for management learning, there are also some limitations to consider. For instance, some studies have found that the effectiveness of gamification may vary depending on students' individual characteristics, such as their prior gaming experience and motivation levels (Seaborn&Fels, 2015).

For **Kahu (2013)**, student engagement in activities may be divided into three major components, called behavioral, cognitive, and affective. Behavioral involvement is the positive behavior shown by students who take part in learning activities demonstrating effort, persistence and attention and no sign of a negative, deviant behavior (Finn, Pannozzo, &Voelkl, 1995). Cognitive involvement refers to students' investment in mastering a certain subject (**Fredricks, Blumenfeld, & Paris, 2004**).

As for affective involvement, it has to do with students' willingness to perform the tasks that have been assigned to them, showing their interest through positive attitudes (**Appleton, Christenson, & Furlong, 2008**). It is possible to use game-based resources in a formal or informal school context, provided that there is some level of involvement for, according to **Denny (2013)**, this type of resources contributing to raising participation in learning activities.

According to **Klopfer, Osterweil and Salen (2009)**, all educational games should rely on certain mechanics and dynamics. Game mechanics are constructs of rules and rewards, whereas dynamics consists of the wishes and emotions the game awakens in the players. Some authors (e.g., **Lee & Hammer, 2011; Linehan, Kirman, Lawson, & Chan, 2011**) have drawn attention to a number of rules that must necessarily be part of a game: allowing the repetition of experiences so that a goal may be attained, including immediate feedback on performance during the game, allowing different opportunities for success, and awarding good performance.

2.1 Common learning theories that are associated with gamification:

In this section, we explore several prominent psychological theories often applied in the context of gamification. These theories include goal-setting theory, self-efficacy theory, self-determination theory, social comparison theory, flow theory, and operant conditioning theory. Each theory offers valuable insights into how gamification elements interact with human psychology, influencing motivation, engagement, and behavior within gamified environments.

Goal-setting theory: emphasizes the importance of setting clear, specific, and moderately challenging goals to enhance motivation and performance. According to this theory, goals provide individuals with a sense of purpose and direction, guiding their actions towards desired outcomes. Immediate feedback mechanisms, such as badges or progress bars commonly used in gamified practices, allow individuals to monitor their progress and adjust their strategies accordingly. Research by Locke, Shaw, Saari, and Latham (1981) highlights the effectiveness of immediate, specific goals in driving motivation and performance, as opposed to long-term or vague objectives.

Self-efficacy theory: proposed by Bandura (1982), focuses on individuals' beliefs in their capabilities to accomplish tasks and overcome obstacles. Self-efficacy can be enhanced through successful task completion and gradual increases in task difficulty. Gamified systems that start with simpler tasks and progressively introduce more challenging ones can help build users' self-efficacy. Additionally, features like point systems, badges, and progress bars provide users with tangible feedback on their performance, further enhancing their self-efficacy (Gnauk, Dannecker, & Hahmann, 2012).

Self-determination theory: posits that humans have innate psychological needs for autonomy, relatedness, and competence (Ryan & Deci, 2000). Autonomy refers to the desire to have control over one's actions and decisions. Gamified systems that offer users choices and control over their activities, such as selecting tasks or customizing avatars, can satisfy this need for autonomy. Relatedness pertains to the need for social connection and interaction with others. Features like multiplayer competitions or collaborative challenges in gamified environments foster a sense of relatedness among users. Lastly, competence reflects the desire to master skills and achieve success. Progress indicators, such as progress bars or level advancements, provide users with a sense of achievement and competence within the gamified system (Sailer et al., 2017).

Social comparison theory: proposed by Festinger (1954), suggests that individuals evaluate their own abilities and opinions by comparing themselves to others. Two types of social comparison—upward and downward—can be observed. Upward comparison occurs when individuals compare themselves to others who are more competent, motivating them to improve their performance. Gamified features like leaderboards or achievement badges facilitate upward social comparison, driving users to strive for higher rankings or achievements (Chen & Chen, 2015).

Flow theory: introduced by Csikszentmihalyi (1990), describes the state of complete immersion and focus in an activity. Flow is characterized by clear goals, immediate feedback, and an appropriate balance between challenge and skill. Gamified practices that provide clear objectives, prompt feedback, and adjustable difficulty levels can facilitate flow experiences among users. Features such as badges, which offer immediate feedback on accomplishments, contribute to maintaining flow states within gamified environments (Hamari & Sjöblom, 2017).

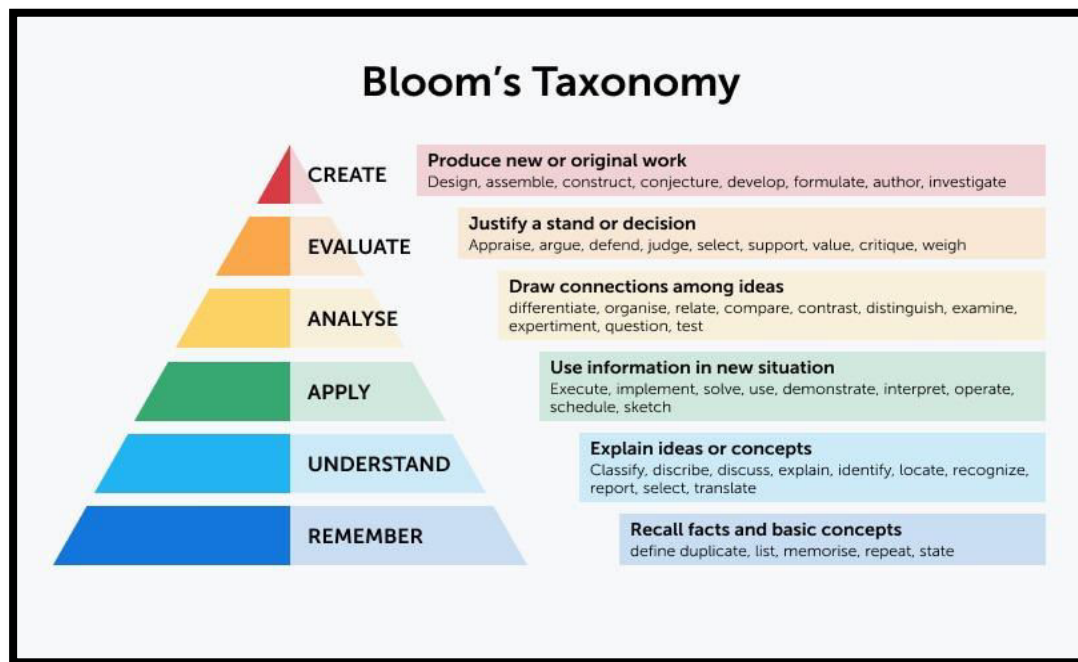
Operant conditioning theory: proposed by Skinner (1950), suggests that behavior is influenced by its consequences. Positive reinforcement, in the form of rewards or incentives, strengthens desired behaviors. In gamified systems, rewards like points or badges serve as positive reinforcement, encouraging users to engage in desired behaviors or tasks. The use of reinforcement schedules, such as continuous or intermittent reinforcement, can further sustain users' interest and motivation over time (Landers, Bauer, Callan, & Armstrong, 2015).

2.2 Bloom's Taxonomy and Gamification

Bloom's Taxonomy is a hierarchical framework developed by educational psychologist Benjamin Bloom in 1956, which categorizes learning objectives into six levels of cognitive complexity: remembering, understanding, applying, analyzing, evaluating, and creating.

The framework has been widely used in education to guide curriculum development, instructional design, and assessment. In recent years, the principles of Bloom's Taxonomy have been applied to the design of gamified learning experiences, with the aim of promoting higher order thinking skills and deeper learning.

Gamification can be seen as a natural fit with Bloom's Taxonomy, as it provides a structured and engaging way for learners to progress through the different levels of cognitive complexity.



Source: <https://www.valamis.com/wp-content/uploads/2022/09/revised-blooms-taxonomy.jpeg>

Research on Bloom's Taxonomy and Gamification

Several researchers have explored the relationship between Bloom's Taxonomy and gamification in the context of education. In their study, 'Gamification in Education: A Systematic Mapping Study', Filipe Portela and colleagues (2017) conducted a systematic review of the literature on the use of gamification in education. They found that many studies have used Bloom's Taxonomy as a guide for the design of gamified learning experiences, and that this approach has been effective in promoting higher order thinking skills and increasing student engagement.

In another study, 'Gamification in Education: A Bloom's Taxonomy-Based Approach for Effective Learning', Suleyman Yasar and colleagues (2018) proposed a framework for gamified learning based on Bloom's Taxonomy. Their framework integrates game design principles and Bloom's Taxonomy, and provides guidelines for designing gamified learning experiences that promote higher order thinking skills. The researchers found that this approach was effective in improving student motivation, engagement, and learning outcomes.

Furthermore, in their study 'Gamification in Education: A Review of the Literature', Shazia Zeb and colleagues (2019) analyzed the use of gamification in education and its impact on student learning. They found that gamification can be an effective tool for promoting higher order thinking skills and deeper learning, especially when combined with Bloom's Taxonomy. The researchers also highlighted the need for further research on the specific elements of gamification that align with each level of Bloom's Taxonomy.

A study by Sharma and Chauhan (2017) found that students who were exposed to gamified learning showed higher levels of motivation and engagement compared to those who were not. This is because gamified learning provides an interactive and immersive experience for students, making learning more enjoyable and engaging.

Furthermore, gamification has been found to have a significant impact on students' academic performance. A study by Singh and Singh (2019) showed that students who were taught using a gamified approach showed a significant improvement in their grades compared to those who were taught using traditional methods. This can be attributed to the fact that gamification provides immediate feedback and rewards, which can motivate students to perform better.

Moreover, gamification has also been found to be effective in promoting collaborative learning among students. A study by Bhatia et al. (2018) showed that gamified learning activities encouraged students to work together and share their knowledge and skills. This not only improves students' understanding of the subject but also enhances their social skills and teamwork.

Additionally, gamification has been found to be particularly effective in improving students' motivation and engagement in subjects that they find challenging or uninteresting. A study by Kumar and Kumar (2018) found

that students who were exposed to gamified learning in subjects like mathematics and science showed increased interest and motivation to learn these subjects.

However, the literature also highlighted a few challenges in the implementation of gamification in the education system of Delhi NCR. One of the main challenges is the lack of technical infrastructure and resources in schools.

A study by Mittal and Mittal (2016) found that the implementation of gamification in schools was hindered by the inadequate availability of technology and resources. This can limit the effectiveness of gamification as students may not have access to the necessary devices and technology to engage in gamified learning activities.

Another challenge is the resistance from teachers and students towards adopting gamification in the classroom. A study by Singh and Sharma (2020) found that some teachers were hesitant to adopt gamification, as they were not familiar with the concept and lacked the necessary training and support. This can result in a lack of effective implementation of gamification, limiting its potential benefits for students.

3. RESEARCH OBJECTIVE:

1. To measure the effectiveness of Gamification in learning management in terms of enhancing the level of employability skills.
2. To check the association between the better understanding of management concepts through gamification and Improvement in grades/Academic performance.

4. RESEARCH METHODOLOGY:

4.1 Research Design:

The research design for this study will be a single-methods approach, qualitative and quantitative methods. This approach will allow for a comprehensive and in-depth exploration of the research topic, providing a more complete understanding of the effectiveness of gamification in management learning.

4.2 Data Collection Methods:

Quantitative data will be collected through surveys distributed to students who have participated in gamified management learning activities. The surveys will measure variables such as motivation, engagement, knowledge, and skills before and after engaging in gamified activities. The pre- and post-surveys will allow for comparisons and analysis of the effectiveness of gamification.

4.3 Sampling:

The target population for this study will be students enrolled in management courses in universities and colleges in Delhi NCR. A convenience sampling method will be used, where participants will be selected based on their accessibility and willingness to participate in the study. The sample size will be determined based on data saturation, where no new information is obtained from additional participants, indicating that enough data has been collected for analysis.

The Likert scale is used to create the questions (5 levels) from 1 to 5 according to the degree of increasing with (1) strongly agree, (2) agree, (3) neutral, (4) disagree, and (5) strongly disagree. And apart from the Likert scale we have also used open ended questions, and some multiple choice questions for better results.

The sample for this study will comprise 102 management students from various colleges and universities in Delhi NCR. A purposive sampling technique will be employed to select students who have been exposed to gamified learning in their management courses.

4.4 Ethical considerations:

All ethical considerations will be adhered to during the research process. Informed consent will be obtained from the participants before data collection, and their privacy and confidentiality will be maintained. Moreover, the participants will have the option to withdraw from the study at any point.

5. DATA ANALYSIS:

Employability_Enhancement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	28	27.5	27.5	27.5
	Agree	25	24.5	24.5	52.0

Nutral	24	23.5	23.5	75.5
Disagree	18	17.6	17.6	93.1
Strongly Agree	7	6.9	6.9	100.0
Total	102	100.0	100.0	

Table-1

Employability_Enhancement

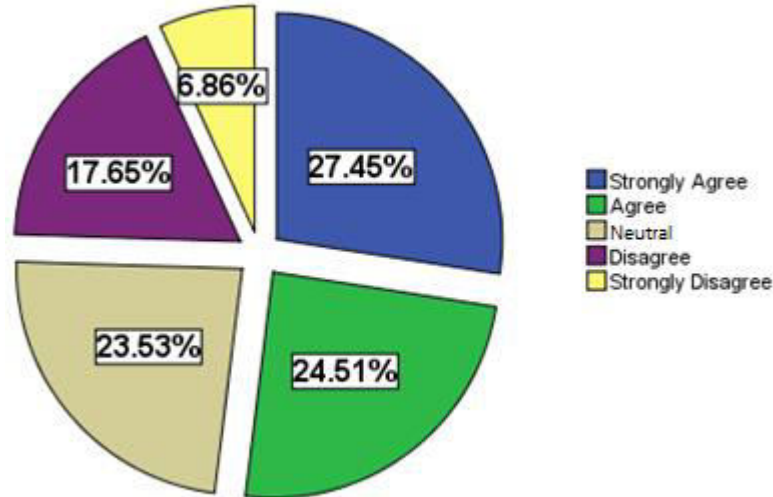


Chart-1

Better_understanding_the_management_concepts * Improvement_in_grades Crosstabulation

		Improvement_in_grades						Total
		Strongly Agree	Agree	Nutral	Disagree	Strongly Disagree		
Better_understanding_the_management_concepts	Strongly Agree	Count	24	6	2	1	0	33
		% within Better_understanding_the_management_concepts	72.7%	18.2%	6.1%	3.0%	.0%	100.0%
		% within Improvement_in_grades	85.7%	40.0%	5.6%	6.2%	.0%	32.4%
		% of Total	23.5%	5.9%	2.0%	1.0%	.0%	32.4%
	Agree	Count	1	6	9	2	1	19
		% within Better_understanding_the_management_concepts	5.3%	31.6%	47.4%	10.5%	5.3%	100.0%
		% within Improvement_in_grades	3.6%	40.0%	25.0%	12.5%	14.3%	18.6%
		% of Total	1.0%	5.9%	8.8%	2.0%	1.0%	18.6%
	Nutral	Count	1	3	21	0	2	27

		% within Better_understanding_the_management_concepts	3.7%	11.1%	77.8%	.0%	7.4%	100.0%	
		% within Improvement_in_grades	3.6%	20.0%	58.3%	.0%	28.6%	26.5%	
		% of Total	1.0%	2.9%	20.6%	.0%	2.0%	26.5%	
	Disagree	Count	0	0	4	9	0	13	
		% within Better_understanding_the_management_concepts	.0%	.0%	30.8%	69.2%	.0%	100.0%	
		% within Improvement_in_grades	.0%	.0%	11.1%	56.2%	.0%	12.7%	
		% of Total	.0%	.0%	3.9%	8.8%	.0%	12.7%	
		Stronly Disagree	Count	2	0	0	4	4	10
			% within Better_understanding_the_management_concepts	20.0%	.0%	.0%	40.0%	40.0%	100.0%
	% within Improvement_in_grades		7.1%	.0%	.0%	25.0%	57.1%	9.8%	
	% of Total		2.0%	.0%	.0%	3.9%	3.9%	9.8%	
	Total		Count	28	15	36	16	7	102
% within Better_understanding_the_management_concepts		27.5%	14.7%	35.3%	15.7%	6.9%	100.0%		
% within Improvement_in_grades		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
% of Total		27.5%	14.7%	35.3%	15.7%	6.9%	100.0%		

Table-2

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	125.821 ^a	16	.000
Likelihood Ratio	121.769	16	.000
N of Valid Cases	102		

Table-3

6. Interpretation

(i). Chart-1 is showing 51.96% of the respondents said that gamification is helpful for Employability enhancement of a learner. 24.51% of the respondents were disagree about the employability enhancement through gamification. Whereas 25.53% of the respondents were neutral about the question.

(ii). Table-2 is showing the cross-tabulation between the better understanding of management concepts through gamification and Improvement in grades/Academic performance after learning through gamification. Table-3 is showing the Chi-Square test to check association between the better understanding of management concepts through gamification and Improvement in grades/Academic performance. Results are showing that the test is significant, which means that Improvement in grades has dependency on understanding of management concepts through gamification.

7. DISCUSSION & RECOMMENDATIONS:

The future of gamification in management learning lies in its ability to provide personalized learning experiences. With the help of data analytics and AI, gamification can tailor the learning journey of each individual based on their knowledge, skill level, and learning style. This will result in a more efficient and effective learning experience, leading to better management skills. Investigate the impact of different game design elements: Game design elements, such as points, badges, and leader-boards have been widely used in gamification. However, there is a lack of consensus on which elements are most effective in enhancing students' learning outcomes. Therefore, further research is needed to explore the impact of different game design elements on students' engagement and learning in the context of management education.

8. The Future Scope of Gamification in Management Learning:

This research can further be extend to examine the role of motivation and engagement: Gamification has been found to be effective in motivating and engaging students in the learning process. However, there is a need for further research to understand the underlying mechanisms of this effect. Future studies could explore the relationship between gamification, motivation, and engagement in management learning among students. Compare the effectiveness of gamification with traditional teaching methods: While gamification has been found to be effective in enhancing students' learning outcomes, it is essential to compare its effectiveness with traditional teaching methods. This could provide insights into the potential benefits and limitations of gamification in management education. At present, the integration of gamification and AI in management learning is limited to basic applications, such as the use of AI-powered chatbots to provide personalized feedback and learning recommendations. However, the potential for deeper integration is vast, and organizations are beginning to explore the possibilities.

9. CONCLUSION

With 51.96% of the respondents saying that gamification is helpful for employability enhancement of a learner indicates that gamification is a powerful tool/technique by using it effectively a learner can improve his/her employability skills. Also from the results obtained we can say that Improvement in grades/Academic performance has dependency on understanding of management concepts through gamification.

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FOOD SECURITY AND LIVELIHOOD: A CASE OF UTTARAKHAND STATE

Dr. Nirmesh Sharma¹ and Dr. Vinay K Srivastava²¹Associate Professor & HOD- BBA, Quantum University, Roorkee Uttarakhand²Associate Professor, I.T.S Mohan Nagar, Ghaziabad**ABSTRACT**

The concept of Food Security is multi-dimensional. Food security exists when all people at all times have physical and economic access to sufficient and nutritious food that meets their dietary needs and food preference for an active and healthy life. Ensuring food and nutrition security is a challenge for India given its huge population and high level of poverty and malnutrition. This paper examines performance, issues, challenges and policies in food security in terms of availability, accessibility and affordability. In particular the paper addresses the following questions: (1) what is the advancement in supply side of food as far as accessibility at national level? (2) What are the policies that India is following as has followed in achieving food security? (3) What ought to be done to acknowledge food security for all citizens of India? This study adopted descriptive methodology to demonstrate the term food security and its scenario in India. It relied on upon auxiliary information from books, references, and in writing in subject to analyzing the data submitted by FCI and Food Security Portal and Food and agriculture Organization. The present paper attempts to analyze some issues related to food security in India and suggest some ways to achieve food and nutritional security in India for overall growth of an individual and sound and sustainable development of Indian economy.

Keywords: Food Security, Livelihood, Climate Crisis, Climate Risk, Yield of Crop

INTRODUCTION:

In the 1970s, food security was understood as the “availability at all times of adequate supply of basic foodstuffs” (UN, 1975). Amartya Sen added a new dimension to food security and **emphasized** the “access” to food through what he called ‘entitlements’ — a combination of what one can produce, exchange in the market along with state or other socially provided supplies. Accordingly, there has been a substantial shift in the understanding of food security. The 1995 World Food Summit declared, “Food security at the individual, household, regional, national and global levels exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (FAO, 1996, p.3). The declaration further recognizes that “poverty eradication is essential to improve access to food”.

Food security means availability, accessibility and affordability of food to all people at all times. The poor households are more vulnerable to food insecurity whenever there is a problem of production or distribution of food crops. Food security depends on the Public Distribution System (PDS) and government vigilance and action at times, when this security is threatened.

WHAT IS FOOD SECURITY?

Food is as essential for living as air is for breathing. But food security means something more than getting two square meals. Food security has following dimensions

- (a) Availability of food means food production within the country, food imports and the previous year’s stock stored in government granaries.
- (b) Accessibility means food is within reach of every person.
- (c) Affordability implies that an individual has enough money to buy sufficient, safe and nutritious food to meet one's dietary needs. Thus, food security is ensured in a country only if (1) enough food is available for all the persons (2) all persons have the capacity to buy food of acceptable quality and (3) there is no barrier on access to food.

OBJECTIVE OF THE STUDY

1. To study the food security and livelihood challenges in Uttarakhand region.
2. To find out the livelihood challenges faced by Uttarakhand people.

Uttarakhand Status of Agriculture:

The total reported area of Uttarakhand under land utilization is 60.01 lakh ha with net sown area of 6.38 lakh ha (10.63%) only. The net irrigated area of the State stands at 3.17 lakh ha (2020-21) which is 49.68 per cent of the net irrigated area. Irrigation is available mostly in the plains where 98% of the net sown area is irrigated.

However, in the hills, it is around 18.86% and rest being rainfed/snowfed. There is a need to create alternate sources of irrigation to increase the net irrigated area in the hills, which in turn shall also increase the cropping intensity of the State, which at present stands at 160.55%. Wheat and paddy are the main crops constituting 24.80% and 30.47%, respectively of the gross cropped area (10.24 lakh ha). The other important crops are sugarcane, maize, pulses and oilseeds. Major fruits are mango, litchi, guava and apple, while major vegetables are potato, tomato, green pea, cauliflower and capsicum. During the period from 2011-12 to 2019-20, allocation to agriculture & allied activities in the State Budget was in the range of 2.72% to 3.80% of the total budget allocations of the State.

*(ha-denotes hectares)

To Ensure Food security status in Uttarakhand let’s have a look at availability of FPS, SHGs & Godown in the state

Table 1: Fair Price Shops in Uttarakhand

Total Fair Price Shops:	9,046
Co-op. Societies:	16
Under Panchayat:	186
Self help Group:	6,032
Individuals:	619
Other FPS:	2,193

Source: National Food Security Portal, Department of Food and Public Distribution, GOI

Table 2: Total Quantity of Ration Cards

Total Ration Cards:	13,97,635
AAY:	1,83,959
PHH:	12,13,676

Source: National Food Security Portal, Department of Food and Public Distribution, GOI

Table 3: FCI Godowns in Uttarakhand

FCI Godowns:	22
State/Wholesalers Godowns:	209

Source: National Food Security Portal, Department of Food and Public Distribution, GOI

Though there is availability of sufficient FPS and Ration Cards too have been distributed to the inhabitants’ but still there is problem of Food Security prevalent in the state. The Himalayan state of Uttarakhand has been in the eye of the ongoing climate crisis for several decades. The state has been battling all possible forms of climate change impacts ranging from flooding to drought to forest fires to name a few. Both slow onset and extreme weather events have declined agricultural productivity in the state. Climate risks coupled with unsustainable development are posing serious threats to the mountain-dependent communities.

Uttarakhand has witnessed a rise of 0.46°C in mean annual temperature between 1911 and 2011 and it still continues to rise at an amplified rate of warming at higher elevations. It is a proven fact that higher altitudes are experiencing more rapid and acute temperature shifts as compared to lower-lying areas. Temperatures in hill districts, such as Uttarkashi, Chamoli, Rudraprayag, and Pithoragarh have increased more substantially than in Haridwar, Dehradun, and Pauri Garhwal.

In the predominantly agrarian state of Uttarakhand, nearly 71% of the population relies on rainfed agriculture, practiced through terrace farming on hill slopes. Reduced crop yield and mounting production costs amidst dwindling profits mar the prospects of hill cultivation in the state, with farmers staring at losses.

Let us take a closer look at how incessant warming in the Himalayas has been disrupting the agricultural practices in the hilly tracts of Uttarakhand.

Shrinking Acreage of Food Crops

Over the last century, there has been significant fall and variability in average annual rainfall in Uttarakhand with hill districts becoming drier. However, high-intensity rainfall extremes of shorter duration continue to loom large. In the last decade, the yield of paddy has decreased due to insufficient rainfall at the time of transplantation while warmer winters have reduced wheat production. Extreme rainfall events erode topsoil productivity and damage standing crops. The area under food grain cultivation in the state shrunk from 970.14 thousand hectares in 2005–06 to 883.93 thousand hectares in 2014–15 with higher altitudes experiencing a larger dip in agricultural production as compared to the plains. In 2020-21 the situation still prevails the same.

According to a report, reduction in stream flow due to glacier retreat or reduced snow cover has led to reduced water availability for irrigation of crops and declining agricultural yields in several mountain areas. Rising air temperatures increase crop evapotranspiration, thus increasing water demand for crop production to maintain optimal yield.

Declining Apple Production amidst Soaring Costs

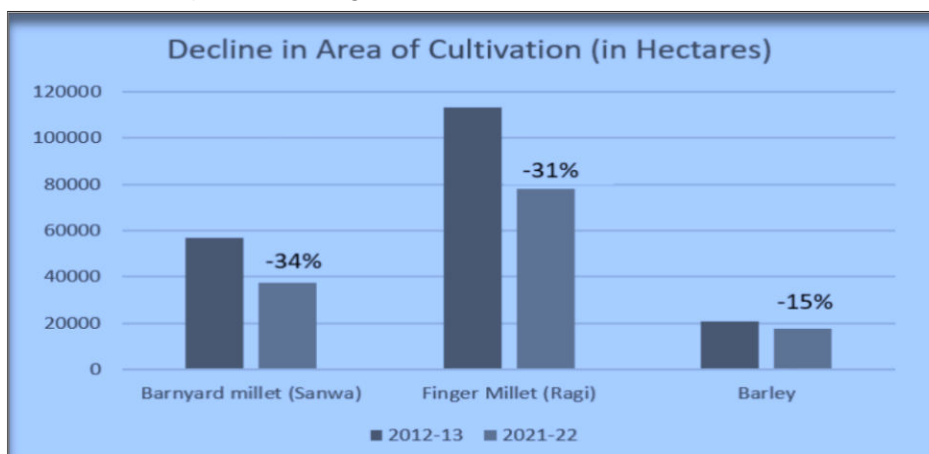
‘Elevation-dependent warming’ patterns in the state lead to changes in the snow line where mountain elevations that were earlier covered with snow may become snow-free. Warmer temperatures in the upper climbs of the Himalayas along with decreasing snowfall and receding snow line have sounded death knell for apple cultivators of Kumaon. Once a leading producer of apples in India, the state has seen a steep decline in apple production from 123.228 tonnes in 2013 to 64.881 tonnes in 2023. Earlier grown at an altitude of 6000 ft, farmers have been forced to shift apple cultivation to higher altitudes (6,500 ft – 7,000 ft) with optimum snowfall. Orange and apricot have also shifted from 4,500 ft to 6,000 ft. The initial investment for apples has now doubled on account of transportation and labour costs. Rising temperatures have led to a deterioration in the quality of fruits ultimately culminating in lower prices. Hailstorm events in the hills of Uttarakhand are also shifting from March to as late as May which damage fruit crops at the flowering stage.

Varieties of Millets on the Brink of Extinction

The state was once home to a rich repository of agro biodiversity with over 40 indigenous millets and coarse cereals, many of which are nearing extinction. Repeated crop failures from erratic monsoons and lighter snowfall are discouraging farmers from investing in the cultivation of local millet varieties like foxtail millet and flaxseed.

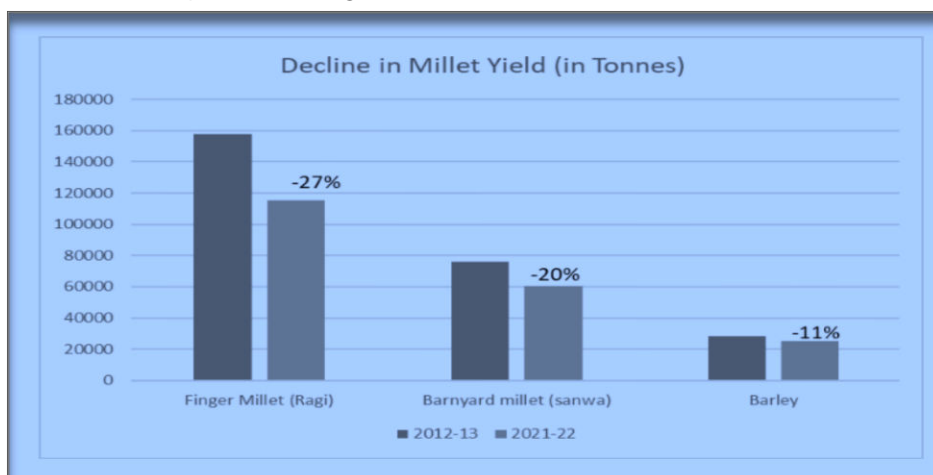
The yield and area under cultivation of finger millets (ragi), barnyard millet and barley have fallen drastically between 2012 and 2021 according to the Department of Agriculture, Uttarakhand. (Refer Fig A & B)

Fig A: Declining Area of Cultivation in Uttarakhand



Source: Department of Agriculture, Government of Uttarakhand

Fig B: Declining Yield of Millets between 2012-2022



Source: Department of Agriculture, Government of Uttarakhand

Fig B: The yield of barnyard millet has reduced by 20% from 75929 tonnes in 2012-13 to 60569 tonnes in 2021-22. The yield of finger millet cultivation has reduced by 27% from 157792 tonnes in 2012-13 to 115125 tonnes in 2021-22. The yield of barley has reduced by 11% from 28222 tonnes in 2012-13 to 25256 tonnes in 2021-22.

Socio-economic Impacts on Local Communities

The share of agriculture in state GDP has fallen down from 14% in 2011–12 to approximately 10% in 2021 on account of several factors with climate change being the prominent one. Declining profits and growing climate uncertainties have been prompting small and marginal farmers from hilly districts to abandon agriculture and migrate to the plains in the pursuit of alternative livelihoods.

According to a study, farmers in the state are on the verge of experiencing endemic poverty and food insecurity with a whopping 63% of the population remaining food insecure in the hilly areas.

From biodiversity loss to dwindling agricultural productivity and poor living standards - climate change in the recent decades has significantly eaten into the mountain ecosystems of the Himalayas. Experts and scientists have been rooting for nature-based solutions, best practices and investments that build resilience, reduce vulnerability and increase the ability of mountains to adapt to daily threats and extreme climatic events.

Issues in Agriculture Sector:

Although agriculture is the main occupation of the hill people, landholdings are small and fragmented. The Small and Marginal farmers (SF & MF) constitute around 91.67 percent of the landholdings. A large majority of about 65.53 percent of operational landholders are engaged in subsistence farming, which hardly leaves anything as marketable surplus. Thus, there is a need to change farm practices.

- Low economic returns from small land holdings make cultivation an unviable option for most of the farmers. Uncertain weather conditions & landslides, non-availability of quality certified seeds, scarcity of fodder, transportation & marketing problems, the dominance of multiple market players, lack of market information and difficulties in obtaining credit from banking channels have also reduced the attraction of farming as a financially viable occupation.
- The net irrigated area to net sown area for the State is 49.68%. Irrigation is available mostly in the plains where 98% of the net sown area is irrigated. However, in the hills, it is around 19%, and rest is under rainfed conditions.
- Migration from the hills to the plains also poses a challenge to agricultural development, leaving large numbers of farmlands abandoned and devoid of any crop production. Wild animal menace in hill districts is another major challenge for field crops.
- Horticulture sector has good scope especially in hill areas with fruits, vegetable, cash crops, medicinal plants and flowers with high potential. However, meagre presence of cold chain facilities & agro-processing facilities close to point of production in rural areas and lack of a well-developed market for horticulture crops is the challenge which needs to be addressed by the State Govt.
- Additionally, non-availability of certified planting material and very low number of nurseries for supply of quality planting material for horticulture, medicinal and aromatic plants creates another hindrance for utilizing the potential.
- Climate change and the vagaries of nature add to the uncertainty of farm production, etc.

Broad Strategy to Mitigate the Challenge:

Agriculture development in this tech. era needs to revolve around digital agriculture, Internet of thing (IOT), artificial intelligence, drone technology etc. and all stakeholders may focus on innovations & interventions.

- Transformation of Hill Agriculture: The agriculture sector has the potential for livelihood generation through diversification into areas such as horticulture, aromatic & medicinal plants, animal husbandry including dairy, fisheries, sericulture, bee-keeping, mushroom production, etc. The main horticultural crops grown in the State include fruits, vegetables, spices and flowers. There is further scope for growing temperate and sub-tropical fruits that would fetch a high price in both the domestic as well as international markets, given the variance in climatic conditions of the State. At present, around 4.5 lakh farmers (88% of whom are small and marginal farmers), are associated with horticultural activities. Further, livelihood expansion options in the form of food processing units provide a linkage to the labor-intensive MSME sector.
- Considering that agriculture is the key sector in the hills districts an adaptation of sustainable farming methods to withstand the vagaries of climate, switching to organic farming process, adopting integrated

farming methods, crop insurance, etc., are all strategies that can help the farmers as well as protect their fluctuating fortunes.

- Agriculture and tourism are the two main drivers for creating sustainable livelihoods. Keeping in view the twin objective of enhancing the viability of small farms and providing employment to local youth, a model of farm-based tourism/ rural tourism can be promoted in hill districts. This will supplement the existing efforts to promote livelihoods in the tourism sector with the help of the expansion of home stays, promotion of adventure sports while respecting the carrying capacities of tourist destinations. This will also arrest the large-scale migration from hills.
- In Uttarakhand, the variations in altitude and climate offer a natural advantage for crop diversification. In the prevailing climatic conditions, mixed farming systems seem to be a practical approach that should include agro-forestry, organic farming, off-season vegetables, floriculture and medicinal & aromatic plants besides fruit crops. It provides a much-needed opportunity for crop diversification and increased employment in the State where the scope of growth in conventional agriculture is limited due to peculiar topography with the majority of land holdings being marginal.
- Uttarakhand with a rich biodiversity offers abundance growth potential of medicinal plants in the upper altitude. The State has numerous varieties of fish species and various types of water resources both natural and manmade.
- Aquaculture can be a source of livelihood for the locals by providing them with opportunities for angling and eco-tourism. Proper identification of artisans in small clusters (250 -300 people on the pattern of North Eastern States) and linkage of clusters with the banks is required. A policy of cluster development needs to be pursued vigorously, particularly in respect of traditional arts and crafts.

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DE-DOLLARIZATION AND RUPEE-NIZATION: CHANGING GLOBAL BUSINESS MODELS**¹Professor Kumar Biswas and ²Dr. Shailendra Kumar Dube**²Professor of Management, I.T.S School of Management, Ghaziabad, Uttar Pradesh, India²Professor, Operations Management, I.T.S School of Management, Ghaziabad, Uttar Pradesh, India**ABSTRACT**

International business transactions are heavily dependent of US dollar. But beyond the area of business activities, the US is using US dollar as a strategic tool - through imposition of various kinds of economic sanctions and freezing of dollar accounts in several banks. The US dollar, as a lethal weapon, has been used by US, time and again, in geopolitics.

Getting anxious by this fact and various other factors, nations across the globe are making sincere efforts to move away from the dependency of single currency – US dollar. They are trying, individually as well as collectively, to promote their own currencies or assorted currencies of other nations to undertake business transactions. The process of de-dollarization, to reduce the supremacy of US dollar, is gaining momentum in the changed multi-polar world. Additionally, the government of India is making sincere attempts to promote Indian Rupee (INR) in the global market – as a process of Rupee-nization.

Keywords: De-dollarization, Rupee-nization, Greenback, Multi-polar currency, polycentrism.

1.0 INTRODUCTION

In today's interconnected globalized economy, banking relationships play a crucial role as critical channel for facilitating international trade and financial transactions. In international business, invoices for the trade can be raised and be settled in either of the following ways:

1. In the currency of the exporter country
2. In the currency of the importer nation
3. In the currency of a third country, called vehicle currency

Incidentally, across the globe, majority of international business is conducted by the third option. Irrespective of the status of the trading partner countries – developed, developing or least developed countries, international financial transactions stand on the strong foundation of greenback. Worldwide US dollar is the most used currency for international transactions.

Globalization and fast progress of electronic information and communication technology have resulted in a quantum jump in international business and so is the upswing in the popularity and demand of US dollar. The supremacy of US dollar remained unchallenged over the years. But worldwide things are changing fast in the process of international business, questioning the role of US dollar.

In this research paper, we shall trace the journey of US dollar from its historical past to present era of dominance. We shall examine the rising voices of different currencies to claim their shares in international financial transactions. The challenges and alternatives, if any, in the course of journey, at present and in future of international monetary domain, will be discussed and analysed.

India exported about \$450 billion worth merchandise in the financial year 2022-2023 and about \$323 billions of services exports in the same financial year. India's largest trade partners with their total trade (sum of imports and exports) in billions of US dollars for the financial year 2022–23, for top 20 countries were as follows¹:

¹ <https://tradestat.commerce.gov.in/eidb/ecomq.asp>

Table 1

Rank	Country	Exports	Imports	Total Trade	Trade Balance
1	United States	71.39	46.82	118.21	24.57
2	China	13.60	90.72	104.32	-77.12
3	United Arab Emirates	28.76	48.88	77.64	-20.12
4	Saudi Arabia	9.69	38.62	48.32	-28.93
5	Russia	2.80	41.56	44.37	-38.75
6	Indonesia	9.06	26.89	35.95	-17.83
7	Iraq	2.33	31.52	33.86	-29.18
8	Singapore	11.00	21.70	32.70	-10.70
9	Hong Kong	9.36	16.31	25.68	-6.95
10	South Korea	6.10	19.26	25.35	-13.16
11	Netherlands	18.53	5.52	24.04	13.01
12	Australia	6.49	17.50	23.97	-11.00
13	Germany	9.21	14.61	23.82	-5.40
14	Japan	4.99	14.78	19.77	-9.79
15	United Kingdom	10.27	8.43	18.70	1.84
16	Malaysia	6.63	11.68	18.31	-5.05
17	South Africa	7.86	9.86	17.72	-2.00
18	Qatar	1.82	15.50	17.31	-13.68
19	Belgium	8.16	8.36	16.53	-0.20
20	Brazil	9.19	6.28	15.46	2.92

Presently India is a net importer nation and depends heavily on US dollar for its international transactions. In this paper, we shall also examine the efforts of India to promote INR to reduce the dependency on US dollar.

2.0 Research Objectives:

A qualitative study was undertaken to understand the process and impacts of de-dollarization and also the initiatives of Indian government for promoting rupee-nization.

2.1 To examine whether is it feasible to replace or rather to be precise to minimize the dominance of US dollar in international business.

2.2 To understand that how effective can be the process of Rupee-nization, driven by India.

2.3 To explore how de-dollarization could change the global business models.

3.0 History in brief:

At the very beginning, let us understand the historical journey of US dollar, spanning centuries, to its present supreme position in global financial market.

Table 2

Sr.	Phase	Duration	Remarks
1	I	11th to 18th century	During medieval period, Silk Road was renowned for its trade connectivity, spanning different parts of the world. Various currencies were used viz. Byzantine solidus, gold dinar etc. From 16th century onwards gold and silver coins emerged as preferred mode of currency exchange among global traders.
2	II	18 th to 19 th century	The British Empire spread its tentacles over vast areas

			of the globe. The business interest and military might of the Great Britain popularized the acceptance of British pound sterling for financial transactions. London emerged as the powerful financial centre. The 19 th century witnessed the adoption of gold standard, further strengthening the position of British pound sterling.
3	III	End of 19 th century to early 20 th century	World War I (28 July 1914 – 11 November 1918) dented the economic strength of European countries, including the power of British pound sterling. Meanwhile, growth of industrialization catapulted US as major global player. In the global race between two currencies, US dollar sprinted ahead of British pound.
4	IV	Mid of 20 th century	<ul style="list-style-type: none"> World War II (1939 to 1945) further weakened the financial muscles of European economies. Post war, the Bretton Woods Agreement (1944)¹ established a new global monetary system. According to it, a currency was required to be pegged to US dollar, which was further pegged to gold price. As a resultant, US dollar emerged as the reserve currency for all kinds of international businesses. In 1971, Richard M. Nixon, US President, announced a set of economic policies which was known as the Nixon Shock². It heralded a new era where the convertibility of US dollars into gold came to an end.
5	V	Late 20 th century onwards	<ul style="list-style-type: none"> In spite of abolishment of Bretton Woods Agreement, the supremacy of US dollar in international market continued as US remained major economic might in global arena. The US financial system remained a powerful magnet for international financial investments. Oil-rich exporting countries agreed to receive their sale proceed in terms of US dollar. The term petro-dollar³ was coined and it fuelled further demand of US dollar.
6	VI	Present and future tense	The absolute position of US dollar is presently challenged by various economies of the world. This research paper examines the current situation and the likely future of reducing the omni-presence effects of US dollar in international business through a process of de-dollarization. The role of Rupee-nization of India, in the overall process of de-dollarization, in the current era of multi-polar currency, will also be examined.

4.0 Theoretical concerts: De-dollarization

4.1 Role of USA

The US has been repeatedly using the power of US dollar as tactical weapon in the arena of global diplomacy. Economic sanctions were imposed instead of deploying military hardware and human forces against Iran, North

¹ <https://www.federalreservehistory.org/essays/bretton-woods-created>

² <https://history.state.gov/milestones/1969-1976/nixon-shock>

³ https://www.washingtonpost.com/outlook/how-petrodollars-rearranged-the-world/2021/08/11/3474aee2-ca09-11eb-81b1-34796c7393af_story.html

Korea etc. Subsequent to the launch of Special Military Operation by Russia against Ukraine, the US has put economic sanction against Russia. It removed Russia from the user list of SWIFT, the international money transfer system. It also seized about \$600 billion in Russian assets.

Affected nations as well as others are making efforts to reduce the supremacy and their dependence on US dollar. The world has moved away from bi-polar system to multi-lateral globalization. Consequently, several attempts are being made, at different corners of the world, to de-throne the uncrowned king of currencies. Various global pockets of actions are actively trying for ousting the US dollar from its prime position as the global currency. Nations with their currencies, ranging from renminbi to rupee, are flexing their currency muscles.

4.2 De-dollarization

De-dollarization is a process through which a country or a region (a group of countries) attempts to reduce its dependency on US dollar as a medium of international business transaction and replace with another currency or a set of assorted currencies to settle the financial transactions.

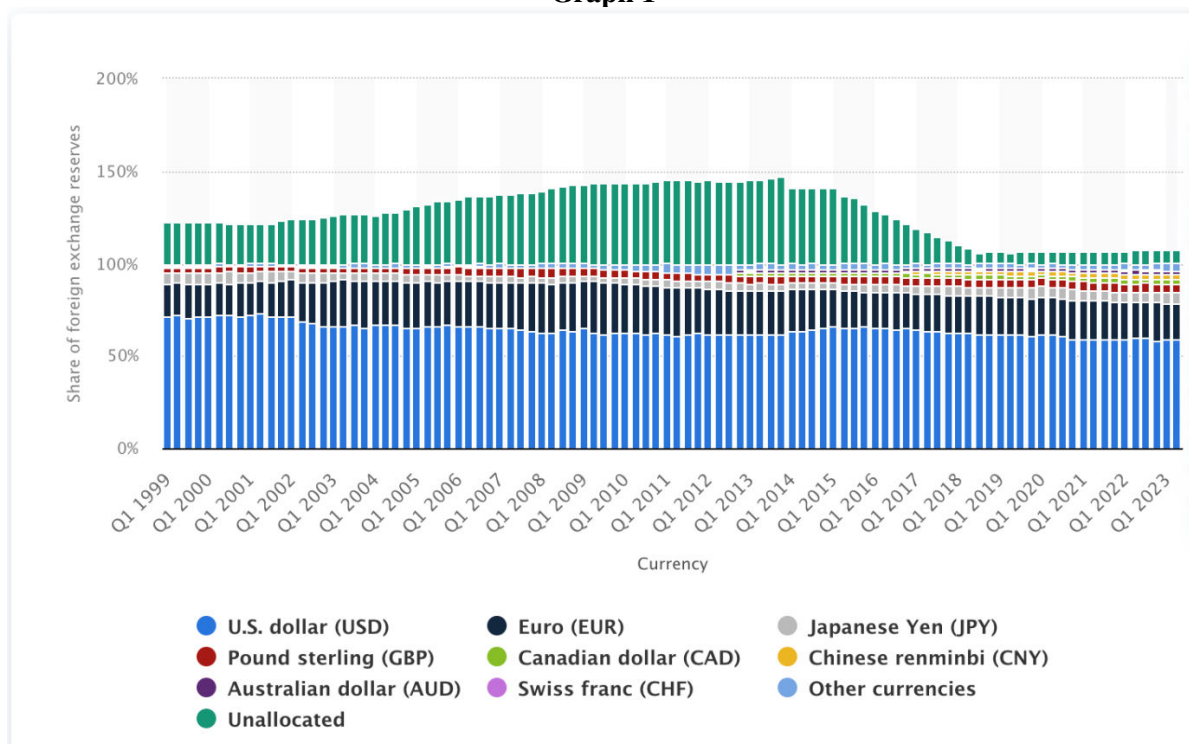
The efforts to move away from the greenback as the chief reserve currency are mainly driven mainly by geopolitical justifications and partly by technological advancement (digital currency). At the background, there is a lethal combination of forces like politics, economics, financial factors, technology and diplomacy.

De-dollarization entails a mix of macroeconomic and microeconomic policies to enhance the attractiveness of the local currency in economic transactions and to raise awareness of the exchange-risk related costs of dollarization, thus providing incentives to economic agents to de-dollarize voluntarily. It may also include measures to force the use of the domestic currency in tandem with macroeconomic stabilization policies.

De-dollarization requires credible macroeconomic stabilization complemented by microeconomic measures. In addition to macroeconomic stabilization, two-way exchange rate volatility and stable and low inflation are key ingredients of de-dollarization.

In short, a process of gradual and steady replacement of US dollar by other currencies in international business transactions to benefit local economy is de-dollarization. The share of currencies held in global foreign exchange reserves from 1st quarter 1999 to 2nd quarter 2023¹:

Graph 1



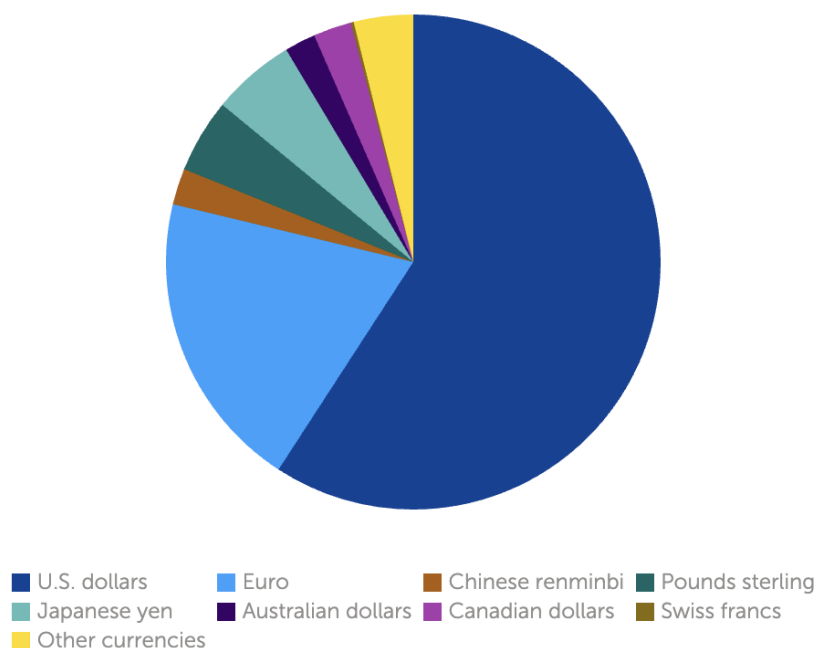
¹ <https://www.statista.com/statistics/233674/distribution-of-global-currency-reserves/>

One of the requirements for de-dollarization process is that central banks should have a substitute reserve currency, may be in the form of the British pound sterling, the euro, the yen etc. This would enable the national economy to provide stability for internal financial system as well as support in engagement for international trade practices.

According to the International Monetary Fund (IMF), the US dollar accounted for 59 percent of global currency reserves at the end of Q1 2023, down from more than 70 percent in 2001, but still well ahead of the euro at around 20% and the Japanese yen at around 5%¹.

Graph 2

World - Allocated Reserves by Currency for 2023Q3



The major objectives of de-dollarization are:

1. To reduce the over-dependency on a single currency i.e. US dollar for international financial transactions.
2. To minimise the risks associated with dollar dominance in global trade settlements. Several risks are associated with it viz. shift in US monetary policy, potential US sanctions or restrictions etc. Additionally, the US government has had a sizable budget deficit for a long time. This raises questions about the dollar value and inflation.
3. To insulate the domestic financial operations, to certain extent, from abrupt changes in US monetary policy on US dollar.
4. For blunting the US policy of weaponization of dollar. The US was embroiled in wars with Iraq and Afghanistan. Its current role in Russia-Ukraine war has partially dented global confidence.
5. For establishing the might of own currency, in the arena of international business.
6. To attain greater financial stability as a nation in the competitive world.
7. For protecting the nation from volatility arising out of global currency fluctuations.

The goals of de-dollarization can be achieved through the use of other currencies of the world viz. euro, rouble, renminbi, dirham, INR and cryptocurrencies etc. Growth of cryptocurrencies is another factor that is adding fuel to the fire of de-dollarization. Here we examine the attempts/efforts made by select countries to expedite the process of de-dollarization.

¹ De-dollarization: The dollar in doubt? (2023, October 4). Chan & Brown Wealth Management

4.3 De-dollarization drive by China

China is the second-biggest economy in the world. The country is pushing for the adoption of its own currency yuan (RMB) as a substitute for the US dollar. For international business, China is considered to pioneer the concept of de-dollarization. Salient features of its chronological progress-report:

Table 3

Sr.	Year	Remarks
1	Pre-2011	International business of China was conducted chiefly in US dollar.
2	2011	For international business, China took baby steps to promote yuan (RMB) in place of US dollar.
3	2014	As a concrete step, China established its first RMB clearing bank in Hong Kong, outside mainland China.
4	2015	<ul style="list-style-type: none"> The international recognition of yuan became official when International Monetary Fund (IMF) included the yuan in its Special Drawing Rights (SDR) basket. Later in November 2023, with SDR, Argentina met US dollar 2.6 billion obligation to IMF utilizing equivalent yuan. In 2015, at the backdrop of sanction imposed by the US and EU on Russia for its annexation of Crimea, China introduced the Cross-Border Interbank Payment System (CIPS).
5	2016	When China globally launched its flagship Belt and Road Initiative (BRI) initiative, it was obvious that project contracts were favoured in RMB denomination.
6	2019	With intensifying US-China trade war, China pushed its de-dollarization measures to minimize the vulnerability to US sanctions.
7	2020	Intensifying further its efforts for de-dollarization and getting out of US controlled financial transaction system, the People's Bank of China (PBoC) developed its own Central Bank Digital Currency (e-CNY or digital RMB).
8	March 2023	China and Brazil signed an agreement to carry out trade using their respective currencies. Subsequently, China and Brazil decided to stop using the US dollar for their commercial operations and started utilizing their indigenous currencies instead.
9	October 2023	By buying 1 million barrels of crude oil, PetroChina International Corp Ltd completed the first-ever international crude oil trade to be settled in e-CNY at the Shanghai Petroleum and Natural Gas Exchange (SHPGX) ¹ .
10	12 January 2024	China-Russia dollar-denominated trade hit \$240.1 billion in 2023, growing 26.3% from a year earlier. While Russia ramped up Chinese yuan payments for imports amid Western sanctions, China also increased the use of yuan to buy Russian commodities. In yuan terms, two-way trade value between China and Russia stood at 1.69 trillion yuan (\$235.90 billion) last year, up 32.7% year-on-year, the customs data showed ² . (\$1 = 7.1641 Chinese yuan renminbi)

Besides, in recent years, China has been gradually reducing its holding of US Treasury bonds.

4.4 De-dollarization drive by European Union

Table 4

Sr.	Year	Remarks
1	2007	EU launched TARGET2 (Trans-European Automated Real-time Gross Settlement Express Transfer) system for cross-border financial transactions within European Union. The system allowed EU members to transact in euros among themselves.

¹ <https://global.chinadaily.com.cn/a/202310/21/WS65330f53a31090682a5e9ddb.html>

² <https://www.reuters.com/markets/china-russia-2023-trade-value-hits-record-high-240-bln-chinese-customs-2024-01-12/>

2	2019	The EU established INSTEX to enable non-dollar and non-SWIFT trade with Iran, specifically to bypass US sanctions. Even Russia expressed interest in joining INSTEX.
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4.5 De-dollarization drive by Russia

“The objective, irreversible process of de-dollarization of our economic ties is gaining momentum.” - Russian president Vladimir Putin¹.

2022: Subsequent to Special Military Operation launched by Russia against Ukraine on 24 February 2022, US and its allies, limited the access of Russian banks to international Society for Worldwide Interbank Financial Telecommunications (SWIFT) payment system. Russia responded by developing its own System of Transfer of Financial Messages (SPFS) and focused on using other currencies viz. euro, yuan etc.

Since mid-2022, Russia has been steadily reducing its reliance on the US dollar for natural gas sales. In August, they struck a deal with Turkey to use rubles for transactions. This trend continued in September with Gazprom announced settlements in rubles and yuan, and by November, all gas sent to China was priced in these currencies. This shift away from US dollar intensified in March 2022 when Russia demanded payment in rubles from "unfriendly" countries following sanctions imposed due to the Ukraine invasion. It's worth noting that Russia is a major player in the global energy market, accounting for 17% of global gas exports. Russia planned to buy more yuan in the foreign exchange market in 2023 for trade settlements. The Russian Finance Ministry and Central Bank of Russia stated that it would sell around 54.5 billion rubles in foreign currency from January 2023.

December 2023: Russia and Iran, both facing US economic sanctions, have reportedly agreed to avoid the dollar in bilateral trade and use their own currencies avoiding use of greenback.

“A big portion of the world is always under threat of US or European sanctions. And it’s in their interest to create an alternative system. The initial promise or purpose of SWIFT wasn’t to be used in the sanctions system, and they changed the rules.”

- Elvira Nabiullina, Governor, Russia’s Central Bank²

For trade between Russia and India, a rupee-rouble settlement has been working and Sberbank, the leading Russian bank has played a key role when India purchased discounted Ural crude oil in very large quantity.

4.6 De-dollarization drive by BRICS



¹ <https://english.alarabiya.net/News/world/2023/08/22/De-dollarization-is-an-irreversible-process-says-Russia-s-Putin>

² <https://watcher.guru/news/brics-alternative-to-swift-can-dethrone-us-dollar>

In 2001, the term "BRICS" was coined by Jim O'Neill, the Goldman Sachs economist in his published paper titled "Building Better Global Economic BRICs". The present nine member intergovernmental organization with acronym 'BRICS' was founded in 2009 by four countries - Brazil, Russia, India and China (BRIC). South Africa joined on 24 December 2010 (BRIC became BRICS). These countries together represent more than 40 percent of global population.

Four countries - Egypt, Ethiopia, Iran and the United Arab Emirates joined the block on 01 January 2024. Kingdom of Saudi Arabia has put their decision to join the block on hold for the time being. While Argentina has expressed inability to join the group, Zimbabwe (formerly Rhodesia) and Cameroon have expressed their interests to join. BRICS is not only gaining strength in number but also demonstrating convergence of developing economies who could challenge the hegemony of US dollar.

"The expansion and modernization of BRICS sends a message that all global institutions should adapt to changing times" and that "This step [the expansion] will further strengthen the faith of many countries of the world in the multipolar world order" - Narendra Modi, Indian Prime Minister¹.

The present constitution of BRICS is significant because it has world's second (China) and third largest (India) importer of petroleum products from Asia. It has also onboard very large producers and exporters of petroleum oil – Russia, Iran, Brazil, and United Arab Emirates. The collective import and export of these countries, if done in alternative currencies, might pose a serious threat to supremacy of US dollar.

One of the major objectives of founding this country block was to conduct fair and smooth international business among member countries and beyond. The reduction of costs and lowering the dependency on single currency of US dollar in the emerging multi-polar world was another key focus area.

In 2015, BRICS nations established the New Development Bank (NDB) – a source of development fund, alternative to the IMF and the World Bank (read alternative to US dollar provided by Western powers). Interestingly, all member countries have equal shareholding structure (\$10 billion per member country) and same share of voting rights.

"Bilateral currency swaps can provide emergency liquidity support in times of turmoil in international financial markets and banking crises in some countries,"

- Pan Gongsheng, Governor of the People's Bank of China²

However, with respect to the idea of BRICS currency, India has preferred to strengthen its own INR.

4.7 De-dollarization drive by Indonesia

September 2023: Indonesia was the latest to join the bandwagon of de-dollarization movement. The island nation has launched a National Task Force to promote local-currency rupiah transactions.

5.0 De-dollarization and rupee-nization drive by India

India is the most populous country and fifth largest economy of the world, as per GDP. It was found that about 86% total import by India is in terms of USD. The imports by India from other global sources viz. Russia, China, South Korea, Japan etc., are also billed and settled in USD. In the financial transactions, neither in INR (India Rupee) nor the currency of the Exim partner country enjoys preference. The resultant was obvious – over dependency on dollar. This over dependency has its own shortcomings and limitations.

"Trade in local currencies paves the way for enhanced economic collaboration and will make international financial interactions simpler."

Narendra Modi, Indian Prime Minister

15 July 2023³

India is seizing the opportunity of global economic slowdown by jacking up its export potential through entering into INR-local currency exchange system as India's strategic responses.

¹ <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1951681>

² <https://watcher.guru/news/brics-china-makes-major-financial-announcement>

³ <https://www.newindianexpress.com/business/2023/Aug/15/india-uae-make-first-crude-oil-trade-in-local-currencies-2605447.html>

5.1 Why India should tread the path of de-dollarization?

- a. India should be able to diversify the risk of depending on sole and single foreign currency
- b. India needs to reduce, to the extent feasible, dependency on US dollar
- c. India should minimise the impact of fluctuation of dollar value
- d. Indian rupee is to gain strength by way of trading in the fierce international competitive world
- e. India can have better diplomatic ties through INR transactions with like-minded countries
- f. While the whole world is moving from bi-polarity to multi-literalism, India should gradually slide from single currency (USD) trading to multi-currency (euro, dirham, renminbi, yen etc.) transactions

5.2 Challenges of de-dollarization for India:

1. Lack of acceptance of INR by partner countries
2. Question of liquidity of INR in the global market
3. Issue of trade imbalance with trading partner countries
4. Expected backlash from USD based established financial as well as political organisations
5. The hurdle of implementation - mis-match of payment systems
6. Printing of more rupee to allow transaction by Reserve Bank of India (RBI) may cause inflation in the domestic market

5.3 Rupee-nization or Rupee-fication:

Rupee-nization or Rupee-fication is the process of promoting Indian Rupee (INR) for international trade and transactions. The objective is to enhance the global acceptance of INR and thereby reducing the dependence on US dollar, to the extent feasible. Rupee-nization is a strategy of government of India to reap further benefits of de-dollarization for cross-border transactions. The objective is to position INR as one of the global currencies and undertake transactions with partner countries in terms of INR. This move is further aimed at improving the resilience of the Indian economy and achieving autonomy at the global stage. The process can offer numerous benefits to national economy but not before posing a couple of serious challenges.

In 1994, India had accepted Article VIII of the IMF Charter. It was the first step towards promoting INR in the international transactions as a free-floating currency. It made INR freely convertible for current account transactions¹.

In 1997, RBI appointed S S Tarapore, former RBI deputy governor as Chairman, to the Committee on Capital Account Convertibility (CAC)² to lay a road-map for CAC. When a nation's currency is freely convertible into foreign exchange at a market-determined exchange rate that is, a rate set by the supply and demand for the currency—it is said to be convertible. For instance, the rupee's convertibility allows holders of foreign currency, like as US dollars or British pounds, to convert money into rupees and vice versa at the market exchange rate³.

'Report on Currency and Finance 2020-21'⁴ of RBI was the next major step towards making INR an international currency. Subsequently, RBI set up an interdepartmental committee to draw a roadmap on the subject. The entire process is something that would enable trade partners to make transactions in INR and have greater access to the Indian currency and market.

Factors favouring rupee-nization⁵:

1. Sufficient forex reserve and it is growing
2. Well-capitalized banking sector
3. Indian banking sector if not best but in the pink of health condition

¹ <https://www.elibrary.imf.org/display/book/9781616351045/ch08.xml>

² https://www.rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=18533

³ <https://ebooks.inflibnet.ac.in/mgmt12/chapter/convertibility-of-rupee/>

⁴ <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=20350>

⁵ Internationalising the Rupee - Prakash Balakrishnan (Economic Times 09 April 2024)

4. NPA level has drastically come down
5. Trade deficit gap is also narrowing down
6. Newly born digital Indian rupee can bridge the technological differences between physical and digital payments

5.4 India-UAE:

Narendra Modi, Prime Minister of India, visited UAE on 15 July 2023. On the occasion, two agreements were signed between Reserve Bank of India (RBI) and Central Bank of UAE (CBUAE) for cross-border transactions in local currencies (INR and AED) and a real time payment gateway for trade settlement. India is the second largest trade partner of UAE and UAE is India’s secured source of petroleum products.

On the same day, a gold trader (Peekay Intermarket) from UAE exported 25 kg of gold to one Indian buyer (YES Bank), who paid 128.4 million INR, which otherwise could have drained \$1.54 million (approx.) from India's forex reserve. It was followed by purchase of one million barrel of crude petroleum oil by Indian Oil Corporation Limited (IOC) from Abu Dhabi National Oil Company (ADNOC)¹. The payment was made in INR and Dirham. Incidentally, this was the first crude oil purchased by energy hungry India through payment in INR under the newly implemented Local Currency Settlement (LCS) policy.

The bilateral trade between India and the UAE, for the financial year 2022-23 was \$84.5 billion. Out of which, petroleum products were worth \$35.1 0 billion i.e. 41%. UAE is the fourth largest supplier of crude oil for India. It ranks second position as supplier of LPG and LNG for Indian market.

5.5 India-Bangladesh:

A few major exports from Bangladesh to India are apparels and clothing, textile fabrics, paper yarn, woven fabrics of paper yarn, animal/vegetable fats and oils, fish etc. and major commodities exported from India to Bangladesh are cotton, electrical machinery, vehicles, iron and steel, plastic and allied materials etc.

Export of data of 2022 in billion USD².

Table 5

Sr.	From	To	Value Billion USD
1	India	Bangladesh	13.69
2	Bangladesh	India	2.00

During the year 2022, there was no import-export of services between the countries, in either direction.

Growth in exports during last 27 years between two countries at an annualized rate:

Table 6

Sr.	From	To	From Year 1995	To Year 2022	Growth (%)
1	India	Bangladesh	1.05 billion USD	13.69 billion USD	10
2	Bangladesh	India	12.2 million USD	2.00 million USD	12.2

A big trade deficit exists, however that is no deterrent to take a baby step forward. India and Bangladesh are jointly working together to conduct businesses in INR through SRVAs. To open SRVAs, banks nominated from India side were State Bank of India and ICICI Bank. On the other hand, from Bangladesh, state owned Sonali Bank, private Eastern Bank Ltd. (EBL) and State Bank of India in Bangladesh were authorised to open SRVAs.

Indian importers could open Letters of Credit (LCs) in those two Indian banks to import goods from Bangladesh in INR and Bangladeshi importers could open LCs in those selected Bangladeshi banks to import products from India in INR. Tamim Agro Industries was the first company in Bangladesh to open an export LC worth 16

¹ <https://www.reuters.com/business/energy/india-makes-first-crude-oil-payment-uae-indian-rupees-2023-08-14/>

² <https://oec.world/en/profile/bilateral-country/ind/partner/bgd>

million INR. On the other hand, Nita Company Ltd., Dhaka was the first exporter of India that opened 12 million INR worth LC¹.

11 July 2023: The first trade transaction, in terms of INR, commenced between India and neighbouring Bangladesh. Nita Company Ltd., imported 30 pickup vans from Indian manufacturer and exporter Tata Motors Ltd. The consignment worth INR 1.23 crore passed through India-Bangladesh border at Benapole land port².



On 01 November 2023, Prime Minister Sheikh Hasina of Bangladesh had launched country's first ever local currency card, "TakaPay"³. This would be followed by the introduction of a Taka-Rupee card.

According to Bangladesh Bank Governor Abdur Rouf Talukder⁴:

"Holders of this card will be able to use it as a debit card within Bangladesh. When traveling to India, they will have the convenience of spending up to \$12,000 worth of rupees through their travel quota using this card."

".....hereby saving the 6% expenditure loss incurred in converting taka to dollars and then dollars to rupees."

"We have nearly \$2 billion worth of exports to India, and this portion will be settled in rupees."

5.6 India-Maldives:

Maldives imports goods worth USD 780 million and USD 720 million from India and China respectively, per annum⁵. The country is in talks with both the exporting nations to settle business transactions in local currencies. They have proposed to make payment for Indian imports through Maldivian rufiyaa (RBI has permitted Maldives to open SRVA). They are also in talk with Central Bank of China for currency swap using yuan or Maldivian rufiyaa, avoiding use of US dollar⁶.

6. Special Rupee Vostro Accounts (SRVAs):

Nostro-Vostro accounts are types of banking accounts used in international banking relationships between two banks. Vostro and Nostro are Latin words which mean "yours" and "mine", respectively.

¹ <https://www.dhakatribune.com/business/320166/bangladesh-looks-to-launch-taka-rupee-card-by>

² <https://thefinancialexpress.com.bd/trade/bangladeshi-firm-imports-30-pick-up-vans-from-india-using-rupee>

³ <https://www.dhakatribune.com/business/banks/329761/takapay-bb-launches-debit-card-in-a-bid-to-rival>

⁴ <https://www.tbsnews.net/economy/banking/bb-launch-taka-rupee-based-debit-card-september-652054>

⁵ <https://www.firstpost.com/world/maldives-in-discussion-with-india-to-pay-in-maldivian-rufiyaa-for-imports-minister-13758984.html>

⁶ <https://www.businesstoday.in/latest/economy/story/amid-tense-ties-maldives-wants-to-settle-payment-for-imports-from-india-in-local-currency-425382-2024-04-13>

A bank that operates in its home country is called home bank. When this home bank maintains an account with a foreign bank in the foreign bank's local currency this is nostro account.

On the other hand, a foreign bank is a bank located in a foreign country where the home bank wants to do business. The account which the foreign bank holds in the home bank in the currency of foreign bank country is vostro account. Rupee Vostro accounts are opened and operated to facilitate international financial transaction between India and other willing countries in terms of INR.

Indian banks already had Rupee Vostro account but Special Rupee Vostro Account (SRVA) is a special type of vostro account introduced by India for international banking. In July 2022, the Reserve Bank of India (RBI) decided to allow the settlement of India's international trade in INR. Accordingly, RBI authorised Indian banks to open and to maintain Special Rupee Vostro accounts of the partner trading country's banks. Prior approval is required from Reserve Bank of India (RBI) to open a SRVA account. RBI has the responsibility for the establishment and governing the operation of Special Rupee Vostro Accounts, as per laid down guidelines. It ensures that the process is transparent, and strictly in compliance with Indian laws and regulations.

SRVA maintained by a foreign bank with an Indian bank, enables them to conduct import-export transactions in INR or in Rupee-denominated transactions. It uses freely convertible currencies and intended to reduce dependence on hard (freely convertible) currency. The objective is to facilitate operations of foreign banks in India in INR. It has multi-pronged objectives viz. simplified currency conversion, reduced transaction costs, and efficient cross-border fund transfers. It helps to build stronger ties between foreign banks and the Indian banking system¹.

On 02 April 2023, Union Bank of India became the first bank to open a Special Rupee Vostro Account through its corresponding bank in Malaysia i.e. India International Bank of Malaysia. Sberbank and VTB Bank, the largest and second-largest banks of Russia, respectively were the first foreign bankers to receive the RBI approval, in this regard.

Table 7

Feature	India	Russia
Regulations Supervisions Guidelines	Subject to Reserve Bank of India (RBI) regulations/ supervision/ guidelines	Subject to The Central Bank of Russian Federation (Bank of Russia) regulations/ supervision/ guidelines
Purpose	Promote trade between India and other countries	Promote trade between Russia and other countries
Currency	Indian Rupee	Russian Rubles
Balance	Can be held in Indian rupee	Can be held in Russian Rubles

The financial transaction system consists of the following key elements:

1. Invoicing: Invoicing requires that all exports and imports are priced and billed in INR.
2. Exchange rate: The exchange rate between the currencies of the trading partner nations will be determined by the market.
3. Settlement: The ultimate settlement of transactions also occurs using INR.

Typical features of SRVAs:

1. Limited Purpose: SRVAs are maintained exclusively for the purpose of handling trade-related transactions and investments.
2. Repatriation: Funds in SRVA can be repatriated without any restrictions.
3. No Interest: SRVA doesn't earn interest as they are non-interest-bearing accounts.
4. Multiple Currencies: SRVA can be denominated in various foreign currencies.

Presently, State Bank of India, Union Bank of India, HDFC Bank, IndusInd Bank etc., are holding majority of SRVAs in India. As on July 2023, RBI permitted 20 Indian banks to open 92 SVRAs of partner banks from 22

¹ <https://www.thehindu.com/business/Economy/explained-vostro-accounts-and-how-they-facilitate-trade/article66537848.ece>

countries viz. Bangladesh, Belarus, Botswana, Fiji, Germany, Guyana, Israel, Kazakhstan, Kenya, Malaysia, Maldives, Mauritius, Myanmar, New Zealand, Oman, Russia, Seychelles, Singapore, Sri Lanka, Tanzania, Uganda, and the United Kingdom etc.

Advantages of SRVAs:

- 1) Will reduce net demand for foreign currencies /exchange
- 2) Need for holding foreign exchange reserves will reduce
- 3) Reduction in currency volatility
- 4) Promotion of INR as the international currency

The framework has a potential to substantially reduce the net demand for foreign exchange.

Situation in other countries:

Special Rupee Vostro Accounts (SRVAs) are not unique to India. Many other countries also have similar accounts, although the regulations and benefits can vary significantly. In the United States, such accounts are known as Correspondent Banking Relationships. These accounts serve a similar purpose as SRVAs in India, but they are subject to different regulations and compliance requirements. In Europe, the European Central Bank has implemented a system of Target2-Securities (T2S) that allows for cross-border settlement of securities transactions. This system is similar in concept to SRVAs, but it operates on a larger scale and involves multiple parties.

7.0 Likely impact on US

By ruthless use of strength of US dollar, America is dictating global financial policies. Directly or indirectly, financial decisions taken by US are being imposed on other economies. Washington enjoys the power of seat largely because of supremacy of US dollar. The process of de-dollarization of global economy could have serious consequences for the economy of United States. With erosion of power of US dollar, the position of US as global leader may be weakened. The time tested deterrence of economic sanction, imposed by US, may lose its muscle power as the process of de-dollarization would open gates for bypasses. The domestic American sectors likely to be impacted are:

1. Banking and Finance - Biggest impact is expected as the global demand for US dollar would drop. It might witness return of US dollar to homeland from other countries. The US economy to suffer if other nations start refusing accepting US dollar as a mode of payment
2. Technology and Fintech - Serious impact in technology sector is forecasted which would cause job loss.
3. Consumer Goods and Retail - High commodity prices coupled with inflation may cause life difficult for common citizens

8.0 Impact on global business

There exist a close link between the process of de-dollarization and global business models.

The US dollar has been the dominant currency in international business for several years. The impact of de-dollarization on international business could be multifaceted. The process of dedollarization could limit the use of the US dollar in global business dealings. Avoiding US dollar for settling global business transactions may potentially disrupt the established trade practices and upset a stable world-wide financial system. This may increase uncertainty in the whole business process and financial settlement. The resultant may be impediments in the flow of investment.

But dedollarization also has the potential to reshape the global business landscape. Future international businesses may adapt to new currency dynamics and regulations which will usher a new era of true multi-polar currency and polycentrism. Global business entities should adapt new strategies in the changed world to minimize risks and capitalize on potential opportunities.

9.0 CONCLUSION:

De-dollarization process is a complex global issue. It has multiple dimensions and advocates polycentrism in a modern multi-polar world. It is not an one-size-fits-all kind of solution. Countries have to customise and decide their own strategies for effective implementation. On one end, countries would make efforts to erode the supremacy of USD, on the other hand, once challenged, US the superpower and its organisations may retaliate. However, it is a long drawn game which may change the way international business would be transacted in the years to come.

For India, one major benefit of de-dollarization would be increased economic sovereignty and reduced exposure to the fluctuations of the US dollar. This would allow India to diversify its reserves and reduce its reliance on a single currency, making its economy more resilient to external shocks.

However, de-dollarization would also come with challenges. One of the biggest challenges would be finding alternative currencies or assets to replace the US dollar in the country's reserves. De-dollarization could also lead to increased transaction costs and currency volatility, which could impact trade and investment flows.

Overall, while de-dollarization could bring certain benefits to India, it would also require careful planning and coordination to manage the potential challenges that could arise. The influence of INR will be limited in global scale, till it becomes an SDR basket currency of IMF or India becomes permanent member of UN Security Council. It would be important for India to work with other countries and international institutions to navigate this process effectively.

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HOW THE GROWING DEMAND FOR LUXURY COUNTERFEIT GOODS IS IMPACTING CONSUMER BEHAVIOUR ON A GLOBAL SCALE AND WHAT IT MEANS FOR THE GLOBAL ECONOMY**Dr. Sonali Banerjee¹ and Shagun Pandey²**¹Assistant Professor, Amity Business School²PhD Scholar, Amity Business School**ABSTRACT**

There has been a significant increase in the level of counterfeiting in the luxury industry. The impact of consumption of counterfeit luxury goods is not only limited to the luxury sector but has adverse impact on the overall global economy. This study aims to identify key relevant factors influencing the consumers' decision regarding the purchase of counterfeit luxury items along with the comparative analysis of factors influencing consumer behaviour across the United Kingdom (UK), the United States of America (USA), Canada, India, Indonesia, and Africa. This study shall use quantitative method for gathering data, and the analysis of the same shall be done on Microsoft Excel. This study will help in delineating the issue of luxury counterfeit goods on a global scale by accounting for the perceptions of individuals based in the UK, US, Canada, India, Indonesia, China, and Africa.

Keywords: Counterfeiting, Luxury Brands, Global Economy, Consumer Perceptions, Consumer Attitudes.

INTRODUCTION

The luxury market, renowned for rarity, artisanship, and prestige, has long enraptured its clientele. However, for a developing fragment of the populace, the excessively high prices related with these sought after luxury items present a impediment to entry. This reality has powered the ascent of a flourishing counterfeit or black market or the domain of fake luxury merchandise. This research paper examines the complex set of elements driving the interest for counterfeit luxury product offerings, investigates its miscellaneous influence on customer purchasing behaviour on a worldwide scale, and determines the ramifications for the worldwide economy.

The attractiveness of counterfeit luxury products comes from a conjunction of financial and social powers. The rapidly growing working class in developing economies, combined with their rising discretionary or disposable income, encourages individuals to participate in the emblematic universe of luxury brands (OECD, 2018). However, the extravagant costs associated with legitimate luxury products make them aspirational in the eyes of consumers at large instead of feasible. Replicas of luxury product offerings provide consumers with a captivating arrangement by giving the sought after brand logo and visual allure at an essentially lower cost.

The widespread availability of e-commerce platforms further proliferates the availability of fake products. The obscurity and simplicity of online exchanges make a favorable place for unscrupulous vendors, permitting them to contact a more extensive crowd with negligible obstructions. Thus, impacting buying propensities for both luxury and non-luxury product offerings (Fink et al., 2016)

In conclusion, the demand for fake luxury product offerings, which is driven by financial aspirations, social impacts and easy access to the internet, has a significant impact on the global economy at large. This paper dives into the developing peculiarity of fake luxury products and its broad outcomes. We will investigate the variables driving this interest, examine its effect on customer conduct by taking data from individuals based worldwide, and talk about expected answers to battle this intricate issue.

REVIEW OF THE LITERATURE***What is luxury?***

As per Heine (2012), luxury can be explained as being a relative term, which changes its definition based on the kind of person one is interacting with. As an example, a Volkswagon Beetle could be seen as a luxury car to a school-going student, but an Audi R8 Spyder could be viewed as a normal car to a wealthy heir. Furthermore, as per Hudders et al. (2013), due to the dynamic nature as well as subjectivity of the term "luxury", there is no possible way to have a standard definition.

In addition to the impact of cultural and societal factors, varied psychological factors are also conducive to the appeal of luxurious products and services. The craving for status, confidence and social approval can persuade individuals to seek out luxurious merchandise and experiences (Veblen, 2017). Furthermore, the psychological concept of scarcity further enhances the apparent worth and desirability of a luxurious item (Mullainathan and Shafir, 2013).

What is a Luxury Brand?

Becker et. al (2018) have aimed to define a luxury brand as a product offering which highlight and convey distinct social and cultural meanings to the consumers. According to Keller (2017), the luxurious brands have a total of ten attributes which include sustaining a premier image, production of ethereal brand collaborations, alignment with quality, brand equity is substantiated by logos and exterior packaging, ancillary connections from renowned individuals and events, complete regulation of the distribution channels, superiority in strategies related to pricing, careful management of brand design, clearly outlined level of competition, and legally protecting the brand and its associated products with the help of trademarks.

Thus, according to Ko et al. (2019), the definition of a luxury brand, with the consumer perspective in mind, encompasses the following:

- 1) superior quality;
- 2) provide genuine value, be it functional or emotional
- 3) convey a distinguished image which highlights artisanship, craftsmanship, or service quality;
- 4) be laudable of securing a superior price; and
- 5) be capable of creating a connection with the customers.

Current market share/ growth rate of the luxury industry

As per Ko et al. (2019), the augmentation of the luxury market across the world has become a theme of utmost importance among researchers. As per Bain and Company (2024), due to the advent of covid pandemic in 2019, the cumulative value of the luxury market dropped significantly in 2020, then it gained momentum leading to a growth in revenues in the luxury industry to \$387 billion. The economic downturn had only a minor impact on the revenues and profit margins of the luxury industry (Becker et al., 2018). Furthermore, on a global level, the luxury market is envisaged to grow to \$16.28 trillion by 2030 (Danziger, 2024). As per Bain and Company (2024), luxury cars, luxury hospitality and personal luxury goods collectively comprise of more than 80% of the entire luxury market. An increase in the global consumption of luxury goods is due to improvement in demand in the Asian countries, particularly China, India, and the Middle East (Ko et al., 2019). As per Statista (2024), the luxury goods segment is expected to produce \$368.90 billion in revenues. The luxury market is expected to grow at 3.22% CAGR from 2024 to 2028.

Factors influencing customer decision making in the luxury industry

As per Ko et al. (2019), various theories exist which explain the reason behind the consumer's motivation to purchase luxurious product offerings. According to Veblen (2017) and Halls and Mauss (2002), consumers purchase luxury products to indicate wealth to others who associate these consumers with status and power.

Ko et al. (2019) also highlighted the existence of self-concept theory. According to this theory, the relationship an individual has with regards to oneself also causes inducement of motivation for consumption of luxury goods. Sociology and social psychology also plays a critical role in dominating the consumer buying process (Eagly and Chaiken, 1993). Their research paper highlighted that individuals are influenced to maintain their social image through their purchasing behaviour.

According to Ko et al. (2019), consumers of luxury items have the need to distinguish themselves from others, especially when there is vast similarity within their community. According to a study conducted by Reis (2015), the marketing of luxury goods to ultimate consumers consists of eight factors instead of the traditional four factors in marketing. These eight factors have been propositioned by Atwal & Williams (2009), Arora (2011), and Tynan et al. (2010). The eight elements of luxury marketing are performance, pedigree, paucity, persona, public figures, placement, public relations, and pricing.

As per the findings of Godey et al. (2012), the country of origin is the same as country of design as well as the country where the luxury product offerings are manufactured or assembled. As per Godey et al. (2012) two key reasons as explanation for the same. The first argument has been highlighted by the findings of Verlegh and Steenkamp (1999) and Vale and Quester (2009). According to their studies, due to globalization and free trade policies among various countries, the consumers can freely purchase their desired luxurious product offering with utmost ease. The second argument, as propositioned by Verlegh and Steenkamp (1999), highlights that various studies have concluded that there is low relationship between consumer purchasing process or decision-making process and the country of origin.

Counterfeit products

The purchase of counterfeit or fake products has become a socially and economically problem on a global level. As per Wilcox et al. (2009), counterfeit or fake product offerings are those which are considered unlawful, inexpensive, and proletarian copies of greater quality as well as superior value luxurious bands. Furthermore, Grossman and Sapiro (1988) stated that counterfeit products are copies of intellectually protected that are traded in the market to exploit the financial rewards generated by the luxury brands.

According to an article published by Forbes (2024), the counterfeit luxury items sold on a global level have a value ranging from \$1.7 trillion to \$4.5 trillion. Not only that, but the global luxury counterfeiting industry is also accountable for a loss of 2.5 million jobs worldwide. Counterfeiting has created a massive issue for luxurious product offerings from a financial point of view as well (Forbes, 2024).

Furham and Valgeirsson (2007) have substantiated that the continuous utilization of fake products by majority of the population has resulted in a serious economic issue. As per Furham and Valgeirsson (2007), it is generally the criminal groups which are engaging in the sale of fake luxury goods.

According to Furham and Valgeirsson (2007), there are various reasons why individuals purchase counterfeit luxury product offerings. Firstly, the inexpensive price of the fake luxury items is the most common reason as to why people purchase such items. Kapferer and Michaut (2014) have substantiated in their study that the rising disposable income, especially in the BRIC (Brazil, Russia, India, and China), has given rise to the consumption of counterfeits. Individuals believe that they can purchase happiness or satisfaction by the consumption of such goods.

Secondly, the easy accessibility and availability of counterfeit luxury items is another reason why people acquire these items (Gentry et al., 2001). According to Basu and Sondhi (2021), easy availability of luxury counterfeit products, particularly through the online distribution channels have facilitated a wider reach on a global level.

Thirdly, the importance given to materialism by individuals is also another factor which influences their purchase decisions regarding fake luxury items. Gamble et al. (2019) have defined materialism as neglect of spiritual and mental facets of life (Perez et al., 2010; Ahmed, 2016).

Fourthly, the lack of awareness along with indifference regarding ethical implications is another factor influencing consumer buying behaviour of fake luxury product offerings (Basu and Sondhi, 2021). The final reason as to why individuals purchase counterfeit products is the value placed by the individuals on their personal system of values.

RESEARCH METHODOLOGY

The objective of this research is to firstly, individually examine the factors influencing consumption of counterfeit goods of individuals based in the UK, US, Canada, India, Indonesia, and Africa. Secondly, carry out a comparative analysis of the counterfeit consumption of luxurious items by participants across countries.

The research methodology was based on descriptive method as the issue as well as the theory of the research topic has been thoroughly investigated. Cross-sectional means of analysis is used based on descriptive method. The primary data collection technique has been used to obtain data for carrying out this research as it was deemed the most appropriate method of data collection.

According to Wilcox et al. (2012), primary data collection techniques involve surveys, interviews, and observations, which are usually done in person. For the purpose of this research, online surveys have been utilized to draw out generic conclusions.

The data collection methodology has been described in the following manner:**1. Participants**

A sample of 144 people consisting of both men and women belonging to generation Z, which includes individuals born between 1996 to 2012, was collected. The participants ranged from highly educated individuals or currently in universities to working professionals from the UK, US, Canada, India, Indonesia, and Africa. The individuals who participated in this study were from the upper middle-class category.

2. Questionnaire Design

Since self-administered online questionnaire is being used in this study, one had to choose between open-ended or close-ended questionnaire. According to Reja et al. (2003), the major distinction between open-ended and close-ended questionnaires is that open-ended questionnaires allow participants to respond using their own words, whereas in close-ended questionnaires, participants are obligated to choose between various pre-

determined answers. For the purpose of this research paper, close-ended questionnaire has been utilized. This is because close-ended questionnaires provide a high level of convenience regarding analysis of results (Reja et al., 2003).

3. Questionnaire

The completion of the questionnaire that was prepared was on Google Forms, from which data was collected. The five-point Likert scale, as propositioned by Rensis Likert (1932), was used to test the participants based on certain set of statements. Where 1 indicated Strongly Disagree and 5 indicated Strongly Agree. The questionnaire began with a set of questions relating to the country of origin and some other personal information such as name and age were also asked. The statements that were used in the questionnaire were: (1) I am willing to pay a premium price for genuine luxury items to avoid counterfeits. (2) Owning an authentic luxury item makes me feel more confident about my social status. (3) I firmly believe that buying genuine luxury products will make me fit into a particular social class. (4) Observing people with fake luxury products makes authentic luxurious products seem less special. (5) I am careful about which country I purchase luxury goods from. (6) I would be disheartened if I unknowingly purchased a fake luxury item. (7) I would never consider buying a fake luxury product even if it was inexpensive. (8) The easy availability of counterfeit luxury items diminishes my desire to purchase authentic luxury products. (9) Individuals who knowingly purchase counterfeit luxury items are engaging in unethical behaviour.

DATA ANALYSIS METHOD

Post the collection of data, the results should be analysed (Wilcox et al., 2012). Since the quantitative research methodology has been utilised, this research paper applies statistical analysis to examine the data which has been collected. The aforementioned data analysis through statistics has been done by making use of Microsoft Excel.

According to Williams (2007), analysis using quantitative methods can be categorised into bivariate, univariate or multivariate. Since multivariate analysis employs the examination of three or more variables, it will not be used. This research paper utilises all the above mentioned methods. Correlation analysis, Regression analysis and one sample t-test will be discussed based on data collected for this thesis.

INTERPRETATION OF DATA & DISCUSSION

The evaluation of the research began with the examination of individual factors impacting the choice of counterfeit luxury goods and authentic luxury items based on individual developed (USA, UK, and Canada) countries and developing (Indonesia, India, and Africa) countries. The hypothesis that was used is given below:

$$\begin{aligned}
 Respondent_t = & Wealth_{t-1} + Status_{t-1} + Social\ Class_{t-1} + Differentiation\ need_{t-1} \\
 & + Image\ of\ country_{t-1} + Unknowingly\ purchase_{t-1} + Inexpensive_{t-1} \\
 & + Easy\ acessability_{t-1} + Unethical\ Behaviour_{t-1} + \epsilon_t
 \end{aligned}$$

Mean	3.4
Median	4
Mode	4

The methodology of descriptive statistics was first used to determine the measures of central tendency, which consists of mean, median, and mode, in the case of United Kingdom (UK). Since the Likert scale was used, the values shall range between 1 and 5. The following results were found in the context if UK.

In addition to this, correlation analysis was carried out for all the factors on the basis of them influencing customer behaviour in the luxury market. This is given at Appendix A.

From the above table in Appendix A, it can be stated that only USA, Canada, Indonesia and Africa had negative correlation with the variables pertaining to choice of place from which the respondents purchase the product, purchasing luxury goods making respondents feel as though they belong to a particular social class, purchasing luxury goods makes them feel confident about their social class, and respondents feel that they are willing to pay a higher price for authentic luxury items, respectively.

After this, regression analysis was done which consisted of creation of hypotheses for all the factors individually which have an influence on customer consumption behaviour with respect to counterfeit luxury items. Since the total number of responses was below 30, one-sample t-test was used to conduct regression analysis (Wilcox et al, 2012). The same has been done on Microsoft Excel.

Ha: I am concerned about which country they purchase their luxury goods from

Ho: I am not concerned about which country i purchase their goods from

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.4	3.1
Variance	0.2	1.1
Observations	23.0	23.0
Hypothesized Mean Difference	0.0	
df	29.0	
t Stat	1.0	
P(T<=t) one-tail	0.2	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.3	
t Critical two-tail	2.0	

The value of alpha or (1- p-value) should be less than 0.05 for the one-tailed t-test to be successfully conducted to test a hypothesis. The same is not observed first in the case of United Kingdom. From the above analysis, based on the hypothesis that the respondents are indifferent to choice of place when it comes to purchasing luxury product offerings, it can be deduced that the result is statistically significant. Furthermore, based on the p value, it can be stated that one can fail to reject the null hypothesis. This means that the country of origin for luxury goods is insignificant.

The second factor that is tested in the case of United Kingdom is that respondents are willing to pay a very high price for authentic luxury products. The one-tailed t-test exhibited the following results:

Ho: I am not willing to pay a high price for genuine luxury items

Ha: I am willing to pay a high price for genuine luxury items

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.4	3.7
Variance	0.2	1.1
Observations	23.0	23
Hypothesized Mean Difference	0.0	
df	28.0	
t Stat	-1.2	
P(T<=t) one-tail	0.1	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.2	
t Critical two-tail	2.0	

From the aforementioned test, we can see that p-value of the test is greater than 0.05, indicating that the result is statistically insignificant. It further indicates that that we reject the null hypothesis, and individual respondents prefer paying a high price for luxury items.

The third factor that was tested relates to whether the respondent feels that his/her social status increases after purchasing legitimate luxury goods. The results of the t-test are as follows:

From the results, it can be deduced that the null hypothesis is statistically insignificant (p-value is greater than 0.05), and we can reject the null hypothesis. This is in line with the findings of Ko et al. (2019).

Ho: Owning a luxury brand does not make me feel more confident about my social status

Ha: Owning a luxury brand makes me feel confident about my social status

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.4	3.1
Variance	0.2	1.4
Observations	23.0	23.0
Hypothesized Mean Difference	0.0	
df	27.0	
t Stat	0.9	
P(T<=t) one-tail	0.2	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.4	
t Critical two-tail	2.1	

The fourth factor that has been tested using the t-test determines whether the respondents believe that owning a luxury product will make them fit into a social class. The results are given below:

Ho: I Believe that owning a luxury counterfeit good will make me fit into a social class

Ha: I Believe that owning a luxury counterfeit good will not make me fit into a social class

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.4	2.2
Variance	0.2	0.7
Observations	23.0	23.0
Hypothesized Mean Difference	0.0	
df	32.0	
t Stat	6.1	
P(T<=t) one-tail	0.00000039	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.0	
t Critical two-tail	2.0	

The results from the test indicate that the null hypothesis is statistically significant (p value is less than 0.05) and that we can fail to reject the null hypothesis. This has also been substantiated by Eagly and Chaiken (1993) as well as Ko et al. (2019).

The fifth factor that has been tested using the t-test relates to the belief of respondents regarding seeing other people use counterfeit luxury items make authentic luxury product offerings seem less special. The results of the test are as follows:

Ho: Seeing people with counterfeit luxury goods makes genuine luxury items seem less special

Ha: Seeing people with counterfeit luxury goods does not make genuine luxury items seem less special

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.4	3.1
Variance	0.2	1.3
Observations	23.0	23.0
Hypothesized Mean Difference	0.0	
df	28.0	
t Stat	0.9	
P(T<=t) one-tail	0.2	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.4	
t Critical two-tail	2.0	

Since the p value is greater than 0.05, we can reject the null hypothesis and state that the result is statistically insignificant. This has also been supported by Basu and Sondhi (2021)

The sixth factor that has been tested using the t-test relates to how respondents would feel if they unknowingly purchased counterfeit luxury items. The results are delineated below:

Ho: I would be disappointed if I unknowingly purchased a counterfeit luxury good
Ha: I would not be disappointed if I unknowingly purchased a counterfeit luxury good

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.3623	4.1304
Variance	0.1731	0.9368
Observations	23.0000	23.0000
Hypothesized Mean Difference	0.0000	
df	30.0000	
t Stat	-3.4967	
P(T<=t) one-tail	0.0007	
t Critical one-tail	1.6973	
P(T<=t) two-tail	0.0015	
t Critical two-tail	2.0423	

The results indicate that we fail to reject the null hypothesis since the p value is less than 0.05 and is statistically significant. This result has also been confirmed in the findings of Kapferer and Michaut (2014).

The seventh factor pertains to whether individuals based in the United Kingdom would consider purchasing counterfeit products even if they were cheaper.

Ho: I would never consider buying a counterfeit luxury item even if it were cheaper
Ha: I would consider buying a counterfeit luxury item even if it were cheaper

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.36	4.0
Variance	0.17	1.5
Observations	23.00	23.0
Hypothesized Mean Difference	0.00	
df	27.00	
t Stat	-2.20	
P(T<=t) one-tail	0.02	
t Critical one-tail	1.70	
P(T<=t) two-tail	0.04	
t Critical two-tail	2.05	

Based on the results of the t-test, it can be deduced that p value is less than 0.05. This highlights that the results are statistically significant, and we can fail to reject the null hypothesis. Thus, respondents from the United Kingdom would never purchase counterfeit luxury items even if they were inexpensive as purported by Furham and Valgeirsson (2007).

The eighth factor includes determining whether respondents from the United Kingdom are influenced by easy availability of counterfeit luxury goods.

Ho: The easy availability of counterfeits reduces my desire to purchase genuine luxury goods.
Ha: The easy availability of counterfeits does not reduce my desire to purchase genuine luxury goods.

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.36	3.26
Variance	0.17	2.11
Observations	23.00	23.00
Hypothesized Mean Difference	0.00	
df	26.00	
t Stat	0.32	
P(T<=t) one-tail	0.38	
t Critical one-tail	1.71	
P(T<=t) two-tail	0.75	
t Critical two-tail	2.06	

The results conclude that since the p-value of the t-test is greater than 0.05, the result is statistically insignificant, and we reject the null hypothesis. This has been supported by the findings of Gentry et al. (2001).

The final factor tests the general perception of individuals based in the United Kingdom regarding the purchase of counterfeit luxury product offerings as unethical. The results from the one-tailed t-test are described as the following:

H₀: People who knowingly buy counterfeit luxury goods are not being unethical.

H_a: People who knowingly buy counterfeit luxury goods are doing something wrong or are being unethical.

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1	Variable 2
Mean	3.36	3.70
Variance	0.17	1.13
Observations	23.00	23
Hypothesized Mean Difference	0.00	
df	29.00	
t Stat	-1.40	
P(T<=t) one-tail	0.09	
t Critical one-tail	1.70	
P(T<=t) two-tail	0.17	
t Critical two-tail	2.05	

Based on the p-value of the test, it can be concluded that the results are statistically insignificant, and we reject the null hypothesis. This is substantiated by the findings of Furham and Valgeirsson (2007).

The results for USA, Canada, India, Indonesia and Africa along with UK have been tabulated at Appendix B attached under the section Appendices of this Dissertation.

Thus, from the above results one can easily compare which factors were significant for developed nations, which consisted of UK, USA, and Canada, with the factors which were significant for developing nations like India, Indonesia, and Africa. For example, the factor of willingness of respondents toward paying a high price for luxury items demonstrated from the one-tailed t-test that it was highly insignificant for developed nations, while it was significant for developing nations. Similarly, in contrast to developed nations, the test was statistically significant for India and Africa with respect to from which country the respondents purchase luxury items from.

Furthermore, the results pertaining to the participants' feelings regarding social status indicated that it was statistically significant only for USA and Indonesia. In addition to this, for the respondents the test for whether they believe that purchasing luxury items will make them fit into a social class was statistically significant for the developed nations along with India. In continuation of the comparative analysis of factors affecting consumption behaviour, the factor pertaining to seeing others use fake luxury items making respondents feel that authentic luxury items are less attractive indicated that the results were statistically insignificant only for Canada.

Another factor relating to how respondents would feel regarding purchase of counterfeit luxury goods unknowingly resulted in statistically insignificant results only for UK and India. When the respondents were asked about their decision to purchase a counterfeit luxury item if it was inexpensive, the results highlighted that it was statistically insignificant for Canada and India. Similarly, when examining the easy availability of counterfeits impacting purchase decisions of luxury items, the results indicated that they were highly insignificant for both developed and developing nations. Finally, when the respondents based in various countries were asked whether they thought that people who knowingly purchase counterfeits are engaging in unethical behaviour, the results indicated that they were statistically significant just for USA.

CONCLUSION AND RECOMMENDATION

The emergence and growth of fake luxury product offerings have grown to become a critical threat to the economy at a global scale. There are a growing number of the population for which premium prices of luxurious items creates a division or a barrier to entry. This has further led to the rise and growth of counterfeit luxury market or black markets for the luxury product offerings.

The increasingly growing number of middle-class individuals in developing countries, along with the rising personal disposable income, encourages participation in the symbolic world of luxurious product offerings (OECD, 2016). It should also be noted that the premium or exorbitant price of authentic luxury items make them more of aspirational than feasible for many individuals across the globe. The younger generations, who have easy accessibility to social media are easily attracted towards these fake items which is supported by the need to self-express (Godey et al., 2012).

In addition to this, these fake luxury goods are easily available due to easy accessibility of e-commerce platforms. This allows unethical vendors to reach a wider range of consumers with less barriers. Uninformed consumers, who have limited knowledge about genuine luxury goods, tend to be misled by deceptive marketing strategies as well as decent-looking fake luxury items.

Consumers opting for fake luxury items often tend to give importance to the visual presentation and relationship with the brand over intrinsic quality and craftsmanship present with genuine luxury product offerings. Thus, the rising growth of fake luxury merchandise critically impacts the behaviour of consumers, their shopping habits, and changing notions of value and genuineness.

Furthermore, trust of the consumers has been eroding from authentic luxury brands owing to easy availability and accessibility of counterfeits. The line between authentic and counterfeit luxurious offerings has increasingly become narrow, thus diminishing the value proposition of various luxury brands and undermining the efforts undertaken by authentic brands to maintain exclusivity. This may cause consumers to become cynical towards genuine luxury brands.

The economic impact of the fake luxury items market is significant. There is revenue which is lost by authentic brands due to counterfeit market taking away the sales which ultimately leads to a fall in tax deductions. This, consequently, has an impact on government budgets along with economic slowdown.

Furthermore, the funds generated from the sale of counterfeits are generally used for illegal activities. As an example, it may be used to fund terrorist organizations, increased child labor, or endangering the health of the people working in the industry.

This research has highlighted the various factors influencing the choice of products, be it genuine or counterfeit goods, of individuals present in various countries. It has highlighted the importance of taking strict actions against counterfeit goods producers by ensuring a proper implementation of Intellectual Property laws on a global level. This is necessary to curb the infestation of counterfeits in the modern society.

Furthermore, strict regulation and verification procedures should be implemented with respect to the online marketplace. One possible solution to this could involve collaboration with brands to develop tools that authenticate the products. Another possible solution could involve the implementation of uncompromising screening processes for vendors.

Finally, as a part of this research, it was necessary to determine the common key factors that were influencing the factors impacting the demand for fake luxury items by cumulatively examining the data pertaining to both developed as well as developing nations.

RECOMMENDATIONS

The battle against duplicating in the extravagance area requires consistent endeavors and variation. This study fills in as a venturing stone, giving significant bits of knowledge into purchaser conduct and the worldwide monetary effect of fake extravagance products. Further exploration can dig further into explicit parts of the issue, for example, the mental elements affecting customer decisions or the adequacy of various purchaser mindfulness crusades.

Coordinated effort among partners - legislatures, extravagance brands, policing, and purchaser insurance associations - is fundamental to make a complete and viable system for battling this worldwide issue. Furthermore, research regarding the entire data relating to different countries could be done.

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Appendix A (on Correlation and results for US, UK, Canada, India, Indonesia, Africa)

FACTORS INFLUENCING RESPONDENTS	Pearson Correlation (UK)	Pearson Correlation (USA)	Pearson Correlation (Canada)	Pearson Correlation (India)	Pearson Correlation (Indonesia)	Pearson Correlation (Africa)
I am careful about which country I purchase luxury counterfeit goods from	0.16	-0.24	0.34	0.56	0.17	0.59
I am willing to pay a premium price for genuine luxury items to avoid counterfeits.	0.58	0.70	0.69	0.63	0.52	-0.13
Owning a genuine luxury good makes me feel more confident about my social status.	0.39	0.51	0.72	0.63	-0.17	0.52
I believe that purchasing counterfeit luxury goods will make me fit into a specific social class.	0.48	0.35	-0.10	0.62	0.09	0.38
Seeing people with counterfeit luxury goods makes genuine luxury items seem less special.	0.33	0.39	0.30	0.50	0.67	0.74
I would be disappointed if I unknowingly purchased a counterfeit luxury good.	0.42	0.27	0.42	0.63	0.29	-0.19
I would never consider buying a counterfeit luxury good, even if it were much cheaper.	0.39	0.50	0.75	0.58	0.45	0.30
The easy availability of counterfeits reduces my desire to purchase genuine luxury goods.	0.16	0.51	0.24	0.36	0.51	0.57
People who knowingly buy counterfeit luxury goods are doing something wrong or are being unethical.	0.56	0.32	0.66	0.58	0.38	0.30

	Country of Origin	UK	USA	Canada	India	Indonesia	Africa
1	I am careful about which country I purchase luxury goods from	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.
2	I am willing to pay a premium price for genuine luxury items to avoid counterfeits.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.
3	Owning a genuine luxury good makes me feel more confident about my social status.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.
4	I believe that purchasing counterfeit luxury goods will make me fit into a specific social class.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.
5	Seeing people with counterfeit luxury goods makes genuine luxury items seem less special.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.
6	I would be disappointed if I unknowingly purchased a counterfeit luxury good.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.
7	I would never consider buying a counterfeit luxury good, even if it were much cheaper.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.
8	The easy availability of counterfeits reduces my desire to purchase genuine luxury goods.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.
9	People who knowingly buy counterfeit luxury goods are doing something wrong or are being unethical.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Fail to reject null hypothesis because P value is less than 0.05. Statistically significant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.	Reject null hypothesis because P value is greater than 0.05. Statistically insignificant.

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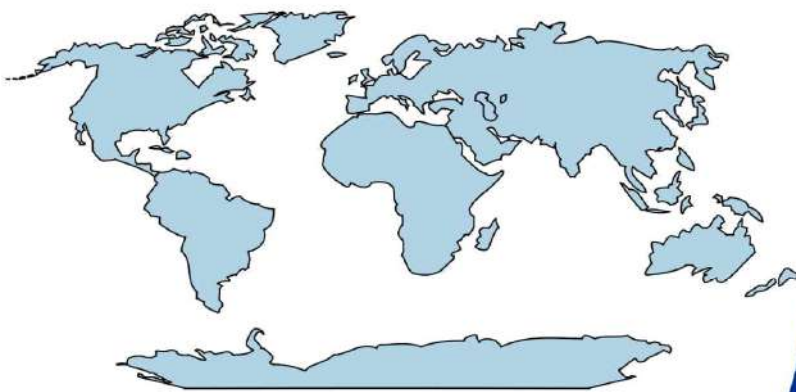
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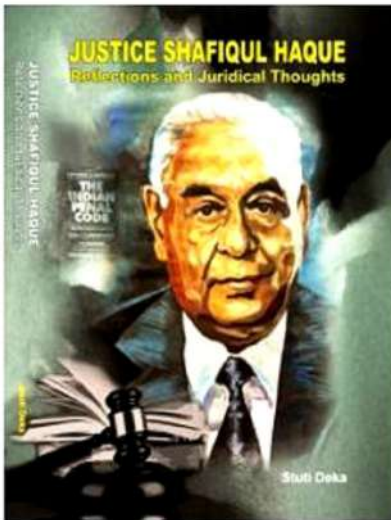


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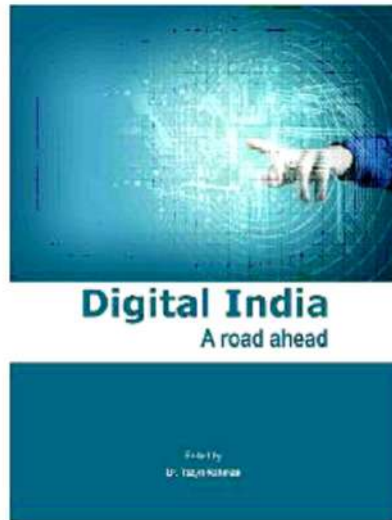
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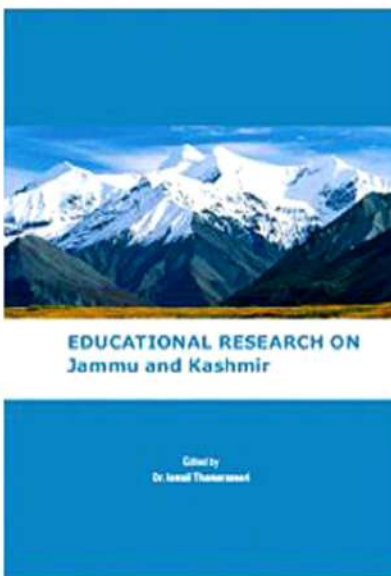
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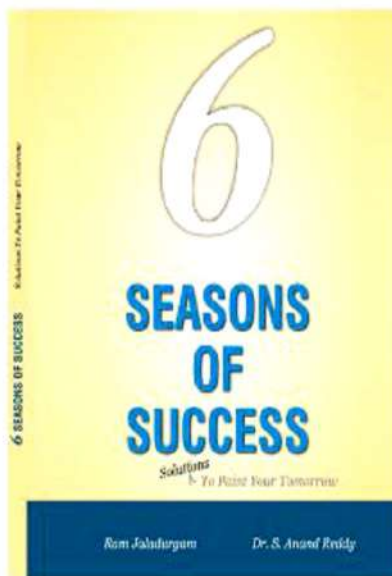
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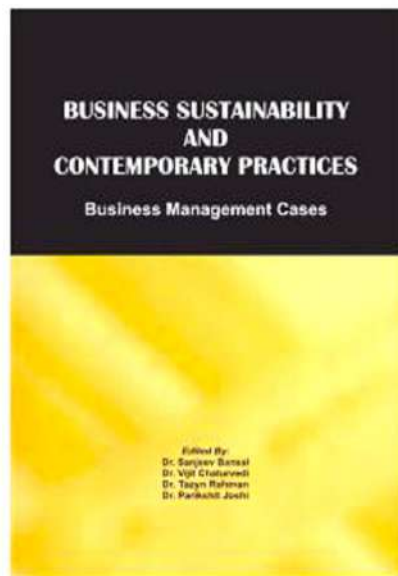
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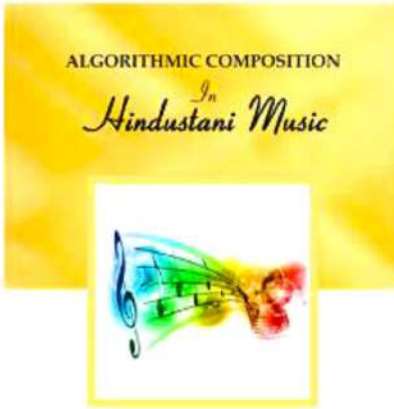
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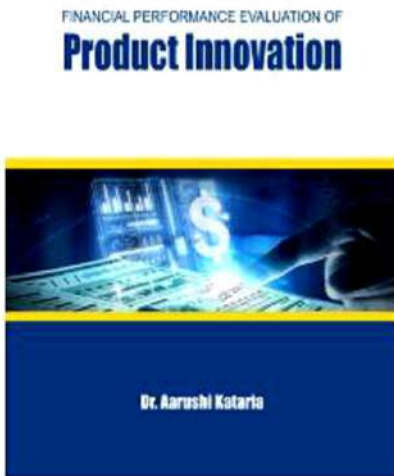


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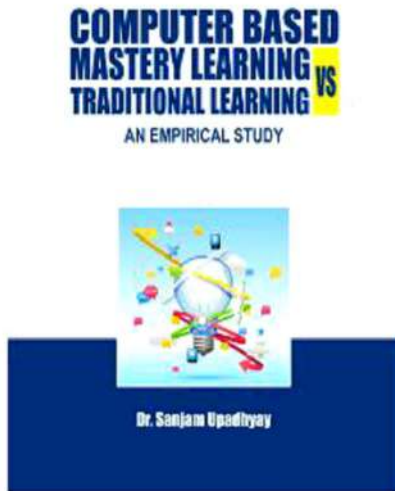
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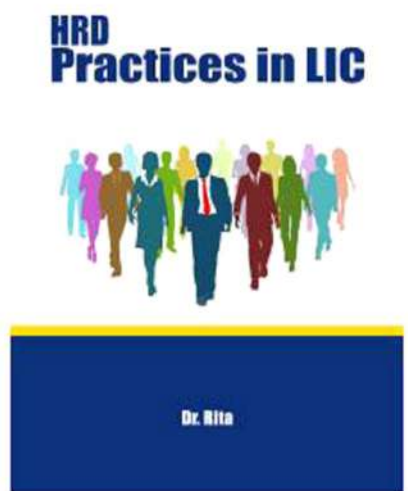
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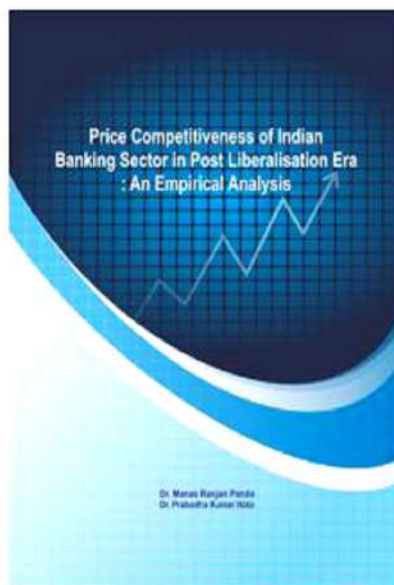
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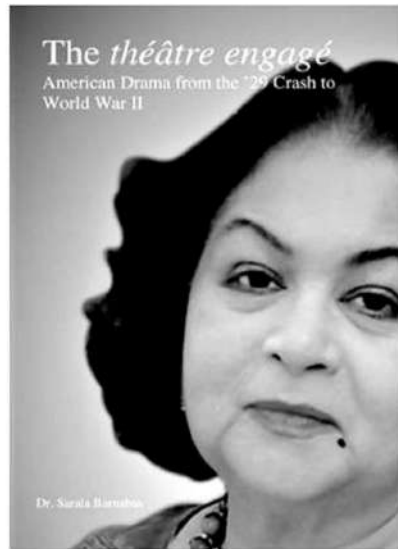
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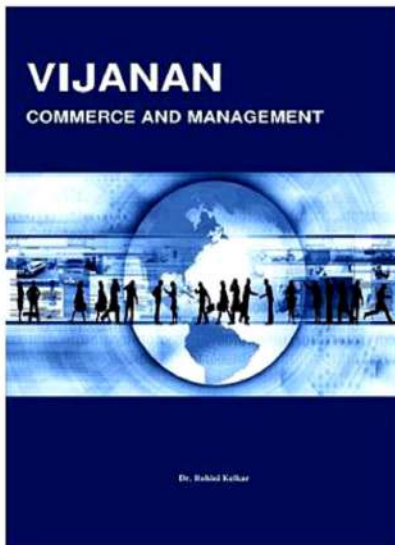
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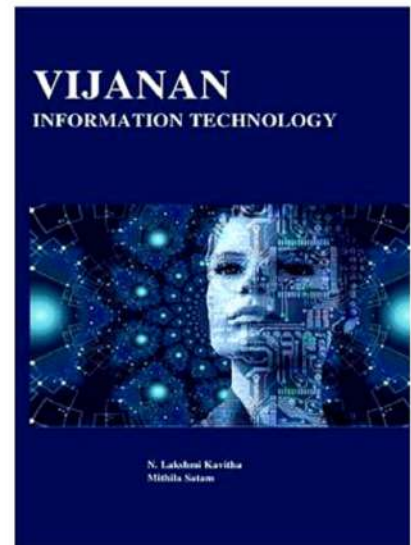
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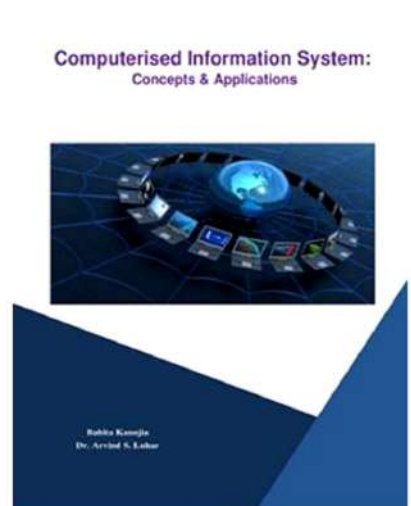
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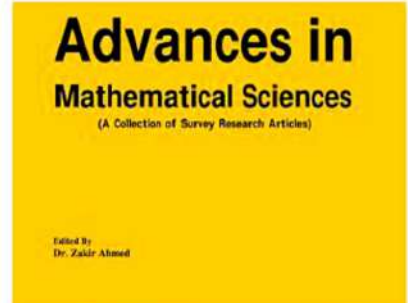
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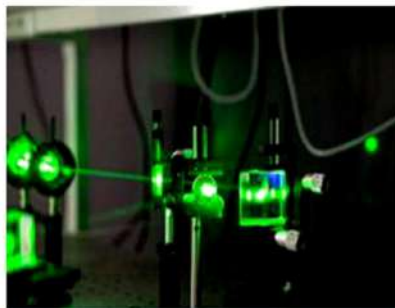


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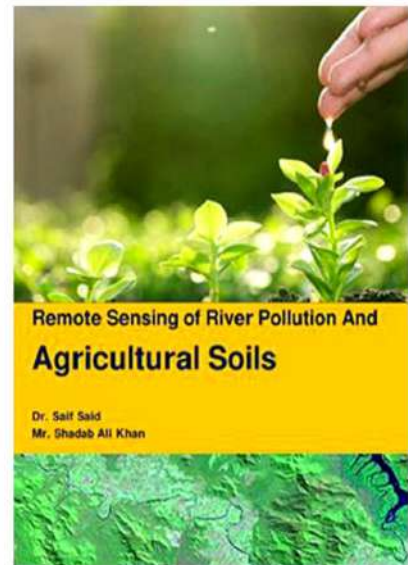
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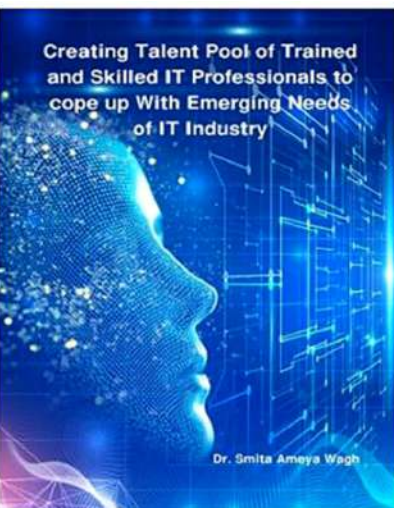
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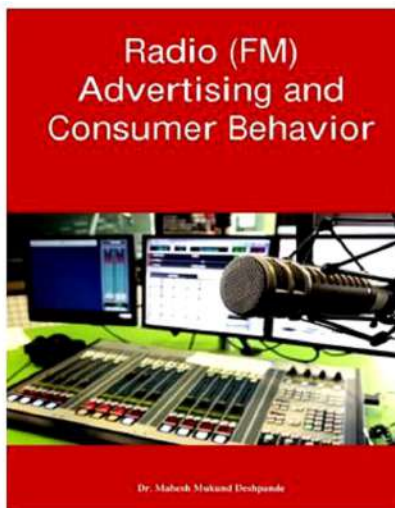
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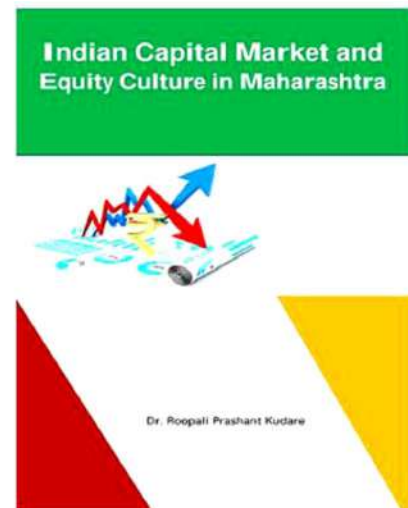
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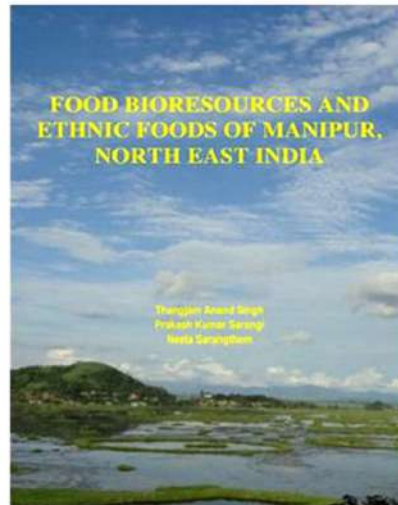
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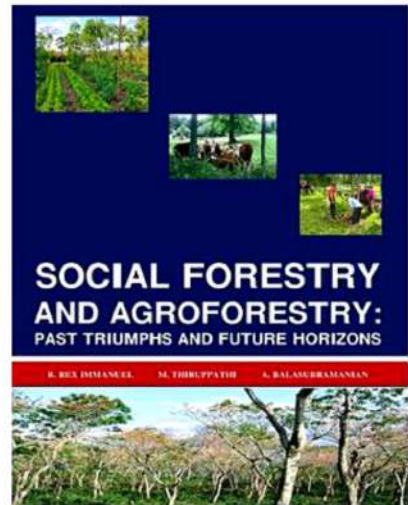
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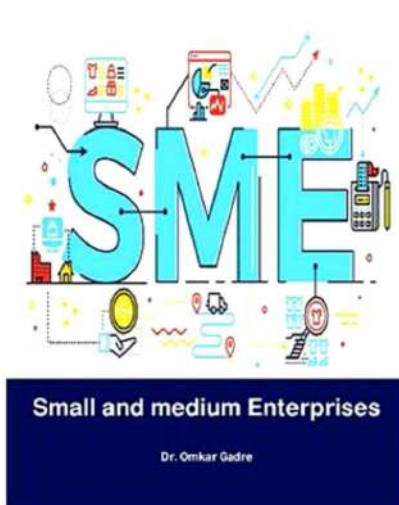
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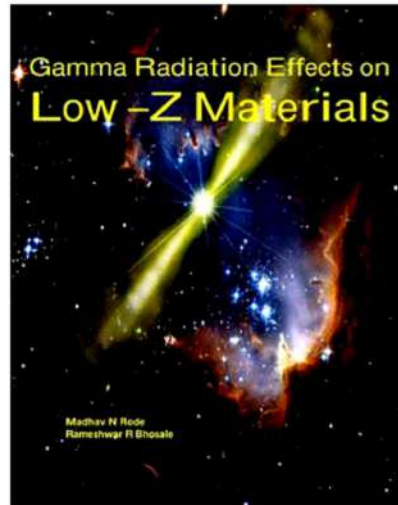
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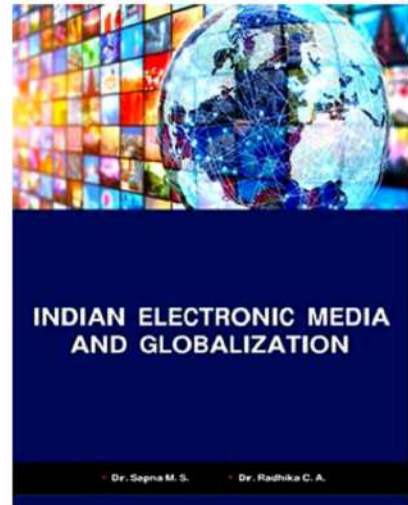
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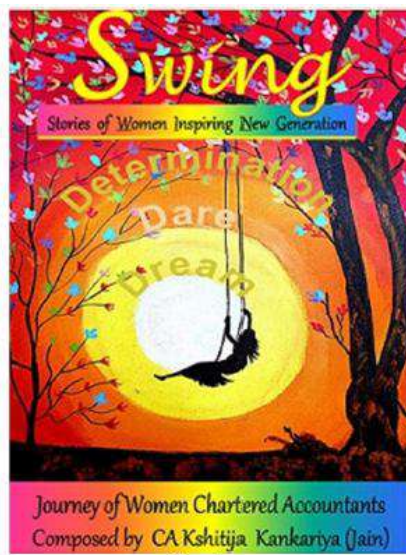
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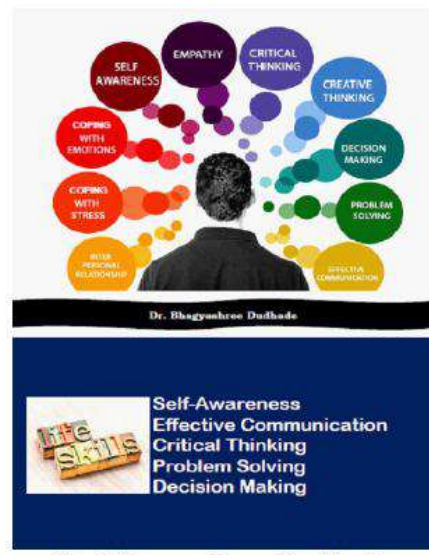
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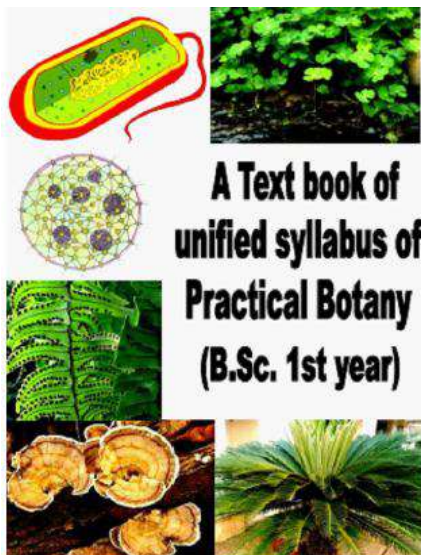
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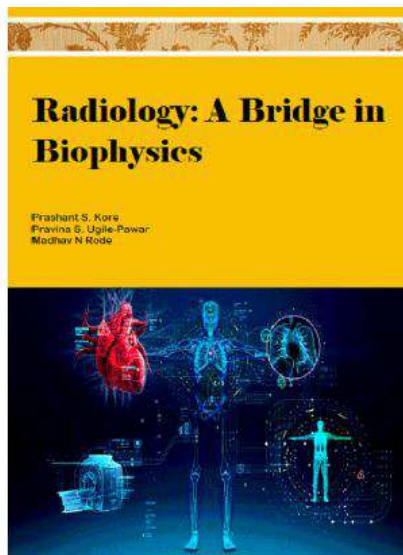
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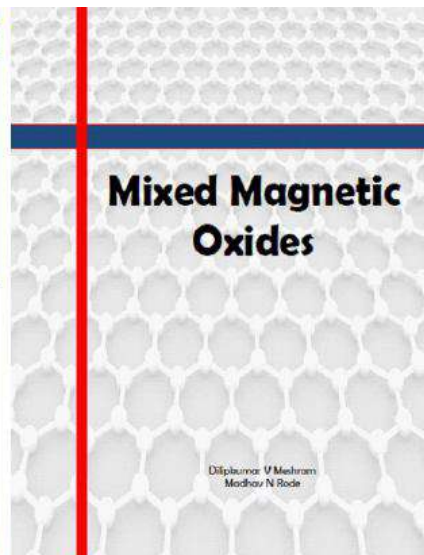
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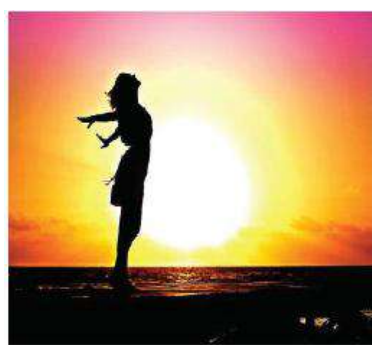
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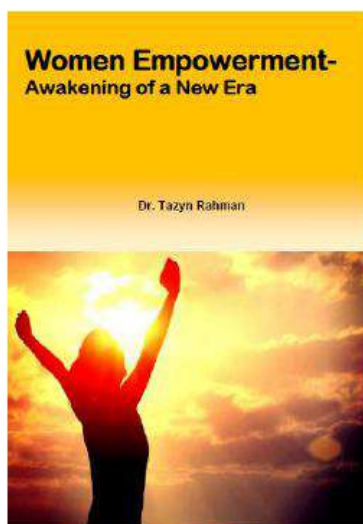
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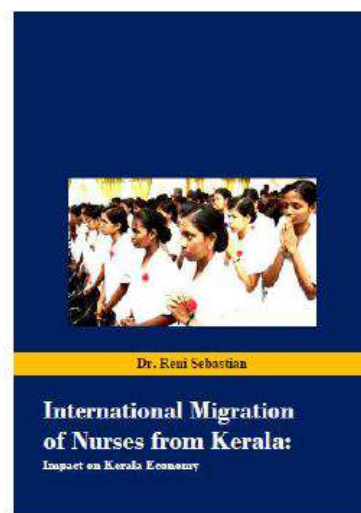
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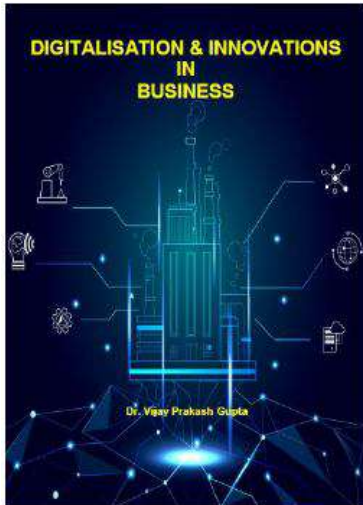
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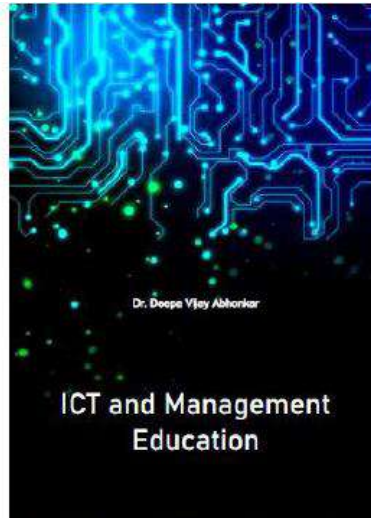
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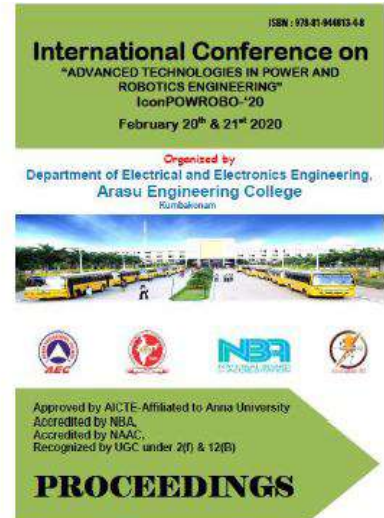
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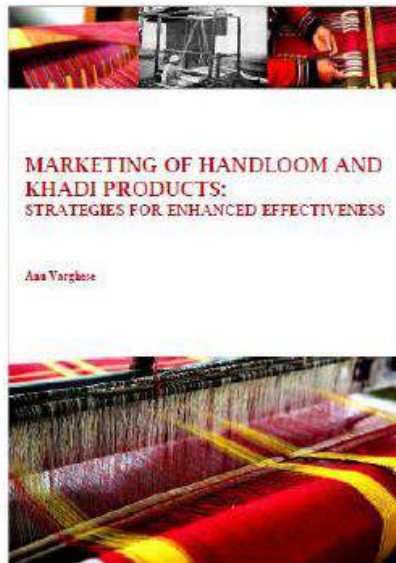
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