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**VIDYA PRASARAK MANDAL's
R Z SHAH COLLEGE OF ARTS, SCIENCE AND
COMMERCE, MULUND-EAST, MUMBAI**

(Affiliated to the University of Mumbai)

Organized

National Multidisciplinary E-Conference on

**SUSTAINABLE DEVELOPMENT GOALS 2030: CHALLENGES
AND OPPORTUNITIES**

On 21st May, 2022

ABOUT THE COLLEGE

VPM's R Z Shah College was established by Vidya Prasarak Mandal Charitable Trust in the year 2003 and located in the vicinity of Mulund East, Mumbai, Maharashtra. The College was renamed as **VPM's Ramniklal Zaverbhai Shah College of Arts, Science and Commerce** in 2009. The College is affiliated to the University of Mumbai. Under the supervision of Principal, various committees function proactively to achieve their goals. With the vision of **'facilitated student centered environment where the intellectual, cultural, social, physical and recreational needs of the students are fulfilled'**, the College is dedicated towards providing quality education, well equipped infrastructure, nurturing talent and developing intellectual abilities of the learner. Our College welcomes all aspirants to create an incredible legacy with the courses such as B.Com, B.A., B.Sc., B.Sc(IT), B.Sc(CS), BAF, BMS,BBI and BAMMC.

The College also provides students with opportunities to excel in extra-curricular fields like NSS, DLLE, Avishkar and WDC.

The College has a vibrant placement cell to equip students to get placed in highly reputed companies by mentoring their necessary skill set with various add on courses like Personality Development, Labour Law, Cloud computing, Foreign Language, Tally, Advanced Excel etc. The College in collaboration with Bankedge and Ideal Management has been instrumental in launching training programmes and courses for the students. The Management of the institution has eminent personalities from academics and industry on its advisory board.

THEME OF CONFERENCE

The Sustainable Development Goals 2030, outlines 17 Goals and 169 targets, and sets out an ambitious vision for sustainable development and integrates its economic, social and environmental development for the International community.

The transformative agenda places equality and dignity at the centre and calls for a change in our development pattern while respecting the environment. It is a universal commitment, undertaken by developed and developing countries alike, in the framework of a strengthened global partnership that takes account of the means of implementation to achieve this change, the prevention of natural disasters, and climate change mitigation and adaptation.

The SDGs also represent a planning and follow-up tool for the countries at the national and local levels. With their long-term approach, they offer support for each country on its path towards sustained, inclusive and environment friendly development, through the formulation of public policies, budget and monitoring & evaluation instruments.

Its implementation will require the engagement of all sectors of society and of the State. Accordingly, the representatives of governments, civil society, academic institutions and the private sector have to take ownership of this agenda, to discuss and embrace it as a tool for the creation of inclusive and fair societies that serve the citizens of today as well as future generations.

SUB-THEMES OF THE CONFERENCE

- Industrialization & Technology in a sustainable world
- Economic growth and employment
- Green Economy
- Labour Migration
- Human rights in changing economic landscapes
- Financial Sustainability - Need of the hour
- Role of politics in achieving Sustainable Development
- Climate and Bio-diversity
- Food security and sustainable agriculture
- Water-Energy Nexus
- Clean Water and Good Hygiene
- Green Chemistry
- Integrated watershed management
- Socio-economic constraints in soil and water conservation
- Health, Hygiene and Sanitation
- Gender equality and non-discrimination
- Empowerment of women
- Inclusive development
- Work stress and psychological sustainability
- Urban planning and ecological sustainability
- Need of Poverty eradication for sustainability
- Density of population and urban life sustainability
- Role and impact of media on Contemporary world
- Social media and psychological sustainability
- Assessing teaching and learning for sustainable development
- Adult education
- Research, development and Innovation
- Technology innovation for sustainable development
- Digitalization security and sustainability
- E - commerce and social sustainability
- Cyber practices and proliferation
- Information management practices
- Data privacy and issues
- ICT – an enabler for sustainable development

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2. POTENTIAL APPLICATION DOMAINS OF IOT

The possible use of the Internet of Things is not only plentiful but also very diverse as it permeates almost every aspect of daily life of individuals, institutions, and communities. In accordance with, the application of IOT covers a wide range of areas including manufacturing or industry, health, agriculture, smart cities, security and emergencies among many others.

2.1 Smart Cities

IOT plays a key role in improving urban intelligence and developing conventional infrastructure. Some of the areas for IOT applications in creating smart cities include; smart transport systems, smart building, traffic congestion waste management, smart lighting, smart parking, and urban maps. This may include various activities such as; monitor parking spaces within the city, monitor vibrations and property conditions of bridges and buildings, placing noise monitoring equipment in critical parts of cities, and monitor pedestrian and motor vehicle quality. IOT-enabled Artificial Intelligence (AI) can be used to monitor, control and reduce traffic congestion in Smart Cities. In addition, IOT allows for the installation of Smart Street and weather lights as well as access to waste containers and waste containers by keeping tabs for waste collection schedules. Smart highways can provide warning messages and important information, such as access to diversions depending on weather conditions or unexpected events such as traffic jams and accidents.

The use of IOT for the benefit of smart cities may require the use of radio frequency and sensory detection. Some of the applications are already built in this area are Aware Home and Smart Santander functionality. In the United States, some big cities like Boston have plans for how to use Internet of Things in their many systems ranging from their parking meters, street lights, spray systems, and sewage systems all designed to connect and connect to the internet. . Such requests will provide significant relief in terms of savings and energy.

2.2 Healthcare

Many health care systems in many countries are ineffective, slow and often unavoidable. This can easily be changed as the healthcare industry relies on many functions and devices that can be automated and technologically advanced. Additional technologies that can assist in various tasks such as sharing information with people and places, record keeping and dispensing medicine can go a long way in transforming the healthcare sector.

Many of the benefits offered by the IOT system in the healthcare sector are broadly divided into patient monitoring, staffing, and materials, identification, and verification, individually, and automated data collection and hearing. Work flow in the hospital can be greatly improved if the flow of patients is monitored. Additionally, authenticity and identification reduce potentially dangerous patient events, record keeping and a few cases of infant malformations. Additionally, automated data collection and data transfer are essential for automation, reduction of form processing times, automated process evaluation and medical asset management. Sensory devices allow patient-centred operations, in particular, to diagnose conditions and obtain real-time information about patient health indicators.

Application domains in this field include; ability to monitor patient compliance with instructions, telemedicine solutions, and patient well-being warnings. Thus, sensors can be used in outpatients and inpatients, Bluetooth dental devices and toothbrushes that can provide post-operative information and patient monitoring. Other IOT elements in this position include; RFID, Bluetooth, and Wi-Fi among others. This will greatly improve ways of measuring and monitoring important functions such as blood pressure, temperature, heart rate, blood sugar, cholesterol levels, and much more. The applications of Internet of Things (IOT) and Internet of Everything (IoE) are further being extended through the materialization of the Internet of Nano-things (IONT).

2.3 Retail and Logistics

Using IOT in Supply Chain or Retail Management has many benefits. Some include; looking at storage conditions throughout the supply chain, product tracking to enable tracking capabilities, payment processing depending on location or time of public transport work, theme parks, gyms, and more. Within retail properties, IOT can be used for a variety of applications such as store-based tracking, quick payment processes such as auto-checking with the help of biometrics, discovery of potentially incompatible products and controlling product fluctuations on shelves and warehouses to automate stock recovery processes.

2.4 Smart Living

In this domain, IOT can be used on remote control devices where one can turn on and off remote devices thus preventing accidents and energy saving. Other smart home appliances include refrigerators fitted with LCD screens (Liquid Crystal Display), which let a person know what is inside, what is left over and what will be

replaced. This information can also be linked to a smartphone application that allows a person to access it outside the home and therefore purchase the necessary equipment. In addition, washing machines can allow a person to remotely monitor clothing. In addition, a variety of kitchen appliances can be connected via a smartphone, making it easy to adjust the temperature, as in the oven. Some self-cleaning ovens can also be easily monitored. For home security, IOT can be used with alarm systems and cameras can be installed to monitor and detect the opening of windows or doors thus preventing intruders.

2.5 Smart Environment

Wise natural strategies in combination with IOT technology should be created to detect, track and evaluate natural resources that offer potential benefits to achieving sustainable livelihoods and a green world. IOT technology allows for the viewing and management of air quality through data collection from remote sensors in all cities as well as providing spatial environments to achieve better traffic control systems in major cities. Additionally, IOT technology can be used to measure water pollution levels and therefore enlighten decisions about water use.

3. RESEARCH CHALLENGES

In all of the above IOT applications, there should be appropriate scope for different domains in order to achieve the success of other applications and their functionality. Like any other technology or innovation, IOT has challenges and implications that need to be sorted out in order to be widely available. Although the current IOT technology has greatly improved in recent years, there are still many problems that need attention, which is why it paves the way for new research. As the concept of IOT emerges from a variety of technologies used to hear, collect, perform, process, consider, transfer, inform, manage, and store data, many research challenges will emerge. These attention-grabbing research challenges have taken on a wide range of research areas.

3.1 Processing, Analysis and Management of Data

The process of data processing, analysis and management is a major challenge due to the diverse nature of IOT, as well as the large amount of data collected, especially in the Big Data era. Currently, many systems use centralized systems to load data and perform complex computer tasks in the international cloud space. However, there are ongoing concerns about conventional cloud infrastructure that is ineffective in transferring large amounts of data generated and processed by IOT-enabled devices and capable of continuously supporting compatible computer load and meeting simultaneous challenges. So many systems rely on current solutions such as mobile cloud computing and fog computing both based on edge processing, to alleviate this challenge.

Another research guide on data management is using Information Centric Networking (ICN) on IOT. As these information-based programs provide support for retrieving active content and access to services, they appear to be very useful not only for accessing but also for transferring and managing the content produced and your transfer. Data analysis and context not only play an important role in IOT success, but also face major challenges. Once the data is collected it should be used wisely to achieve intelligent IOT functions. Thus, the development of machine learning techniques and artificial intelligence algorithms, derived from neural functions, genetic algorithms, evolutionary algorithms, and many other artificial intelligence systems are essential to achieving automated decisions.

3.2 Privacy and Security

Because IOT has become an important factor in the future of the internet and the growth of its use, it needs the need to effectively address security and trust functions. Researchers are aware of current weaknesses in many IOT devices. In addition, the IOT base is based on wireless sensor networks (WSN), the IOT thus inherits the same privacy and security issues as WSN. Various attacks and vulnerabilities in IOT systems prove the need for a variety of security projects that will protect data and systems from end to end. Many attacks often exploit vulnerabilities in certain devices thus gaining access to their systems and consequently making protected devices vulnerable. This security gap further enhances comprehensive security solutions including efficient data encryption research and data security systems, non-cryptographic security strategies and frameworks that help developers come up with secure systems on a variety of devices.

There is a need for more research to be done on cryptographic security applications that have the ability to work on IOT-blocked devices. This will enable different competent users too safely and use IOT systems without paying attention to the inadequate interoperability found in almost all IOT devices. In addition to IOT security and security features, additional areas such as confidentiality of communications, credibility, and authenticity of communications agencies, message integrity, and additional security requirements must be included. This may include factors such as the ability to block the communication of various organizations.

3.3 Machine-to-Machine Communication and Communication Protocols

Although there are already IOT-based communication systems such as Constrained Application Protocol (CoAP) and Message Queuing Telemetry Transport (MQTT), there is still no open IOT standard. While everything needs to be connected, everything does not have to be done online as they only need to have a certain ability to put their data at a certain gate. Additionally, there are many options regarding suitable wireless technologies such as LoRa, IEEE 802.15.4, and Bluetooth although it is not clear that this available wireless technology has the necessary capacity to continue to cover a wide range of IOT connections from now on. .

Device communication systems are a driving force in making IOT applications more realistic, and they form the primary data flow support between sensors and tangible objects or the outside world. Although various MAC protocols have been analyzed for a few domains with Frequency Division Multiple Access, Time Division Multiple Access and Carrier Sense Multiple Access (FDMA, TDMA and CSMA) for non-collision traffic efficiency, more rotation is needed. On nodes respectively. The main objectives of the transport layer include ensuring end-to-end fidelity and making end-to-end traffic control. In this aspect, many protocols cannot ultimately cooperate in order to eliminate distrust.

3.4 Interoperability

Traditionally with regard to the Internet, collaboration has always been and continues to be a fundamental value because the initial requirement for an internet connection requires that "connected" systems have the ability to "speak the same language" in terms of codes and protocols. Currently, different industries use different standards to support their applications. Due to the quantity and type of data, as well as the variety of devices, using common connections in different businesses is very important and even more important in systems that support cross-cutting organization, in addition to the broader system limitations. Therefore, IOT systems are designed to manage high levels of interaction

CONCLUSION

IOT can best be described as a CAS (Complex Adaptive System) that will continue to emerge which is why it needs new and innovative forms of software engineering, program engineering, project management, and many other areas for continuous development and future management years. The locations of the IOT system are very different to be able to help different users, who also have different needs. The technology works for three categories of users, individuals, communities or communities and institutions. As discussed in the application section of this research paper, IOT undoubtedly has the potential to be a force for change, and to some extent will have a positive impact on millions of lives worldwide. According to [25], this has become even more apparent, as various governments around the world have shown an interest in the IOT concept by providing additional funding for the field of further research. A good example is the Chinese Government.

A number of research groups have been started, and are still being developed, in different parts of the world, and their main goal is to follow IOT-related research. As more research is done, new levels of IOT processes, integrated technologies and connections, continue to emerge, which further opens the way for more IOT functionality. The fact that IOT is so widespread and affects almost every area of our lives, makes it an important subject for academic research in various related fields such as information technology and computer science. The paper highlights the potential use of Internet resources for objects and related research challenges.

REFERENCE

- [1] Borgia, D. G. Gomes, B. Lagesse, R. Lea, and D. Puccinelli, "Special issue on" Internet of Things: Research challenges and Solutions"., "Computer Communications, vol. 89, no. 90, pp. 1–4, 2016. [5] K. K. Patel, S. M. Patel, et al., "Internet of things IOT: definition, characteristics, architecture, enabling technologies, application future challenges," International journal of engineering science and computing, vol. 6, no. 5, pp. 6122–6131, 2016.
- [2] Mahmud, S. H., Assan, L. and Islam, R. 2018. "Potentials of Internet of Things (IOT) in Malaysian Construction Industry", Annals of Emerging Technologies in Computing (AETiC), Print ISSN: 2516-0281, Online ISSN: 2516-029X, pp. 44-52, Vol. 2, No. 1, International Association of Educators and Researchers (IAER), DOI: 10.33166/AETiC.2018.04.004.
- [3] Mano, Y., Faical B. S., Nakamura L., Gomes, P. G. Libralon, R. Meneguete, G. Filho, G. Giancristofaro, G. Pessin, B. Krishnamachari, and Jo Ueyama. 2015. Exploiting IOT technologies for enhancing Health Smart Homes through patient identification and emotion recognition. Computer Communications, 89.90, (178-190). DOI: 10.1016/j.comcom.2016.03.010.

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- [4] S. Rajguru, S. Kinhekar, and S. Pati, “Analysis of internet of things in a smart environment,” *International Journal of Enhanced Research in Man-agement and Computer Applications*, vol. 4, no. 4, pp. 40–43, 2015.
 - [5] J. A. Chaudhry, K. Saleem, P. S. Haskell-Dowland, and M. H. Miraz, “A Survey of Distributed Certificate Authorities in MANETs,” *Annals of Emerging Technologies in Computing (AETiC)*, vol. 2, no. 3, pp. 11–18, 2018, DOI: 10.33166/AETiC.2018.03.002.
 - [6] A. S. A. Daia, R. A. Ramadan, and M. B. Fayek, “Sensor Networks Attacks Classifications and Mitigation”, *Annals of Emerging Technologies in Computing (AETiC)*, vol. 2, no. 4, pp. 28–43, 2018, DOI: 10.33166/AETiC.2018.04.003.
 - [7] Z. Alansari, N. B. Anuar, A. Kamsin, S. Soomro, M. R. Belgaum, M. H. Miraz, and J. Alshaer, “Challenges of Internet of Things and Big Data Integration”, in *Emerging Technologies in Computing* (M. H. Miraz, P. Ex- cell, A. Ware, S. Soomro, and M. Ali, eds.), (Cham), pp. 47–55, Springer International Publishing, 2018, DOI: 10.1007/978-3-31995450-9_4.

A STUDY OF USE OF OVER-THE-TOP (OTT) PLATFORMS AMONG YOUNG ADULTS DURING THE PERIOD OF COVID-19

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ABSTRACT

The Covid-19 pandemic accelerated the use of Over-The-Top (OTT) platforms and has taken them to great heights in the past couple of years. It has completely transformed the entertainment industry. Previous studies have focused on the scope of OTT Platforms and their expansion but the ill-effects of online streaming on young adults (18 years -25 years) haven't been studied. This research paper is based primary data collected by an online survey. Along with this, secondary data from the internet has also been taken into consideration. The paper reveals that online streaming on OTT Platforms have caused more harm than good to the mental and physical health of young adults.

Keywords: OTT Platforms, Binge Watching, Online streaming, Physical Health, Mental Health, Entertainment Industry

INTRODUCTION

The acronym OTT stands for Over-the-Top. This means streaming across different devices whenever we want. "Over-the-Top," a convenient little term that explains the new delivery method of film and TV content over the internet without the need for traditional broadcast, cable or satellite pay-TV providers. In simple terms, we're talking about people paying an internet provider for internet access to watch Netflix, without paying for cable TV.

Over-the-Top (OTT) video platforms, once considered a luxury, are today a commodity. In India, there is an increasingly growing number of consumers adapting to it. Unlike most industries, the Covid-19 pandemic was game-changing for the media and entertainment industry. If the last decade was about the boom of multiplexes, 2020 turned out to be the year of OTT entertainment, with cineplexes and movie theaters being shut down for most parts of the year.

Stuck inside their houses, people across the globe turned to digital screens to seek entertainment. India is the world's fastest-growing market for streaming platforms, also known as Over-the-Top or OTT service providers.

OTT Platforms have done worse than good to the young adults of today's world. As the contents being played are handpicked by the viewers, there is a room for undivided attention. This, in turn, results in a viewership engaged without distraction/disturbance. Uninterrupted streaming has opened doors to diseases such as insomnia, depression, obesity, and eyes disorder amongst the youth. With an adverse effect on the academic performance of these young adults, the entire process of socialization of the youth has also been affected.

RATIONALE OF STUDY

The rationale of this research paper is to analyze and realize 'the effects and use of Over-The-Top (OTT) platforms among young adults during the period of Covid-19.'

Digital India plays a major role in promoting the use of OTT platforms to stream diverse content from all over the world. A youth-oriented population has led to the increase in the viewership of OTT platforms such as Netflix, YouTube, etc. The drop in prices of smartphones and cellular data has enabled a large chunk of the population to gain access to online platforms. India currently has 1.18 billion mobile connections, 700 million Internet users, and 600 million smartphones, which are increasing 25 million per quarter.

There are also platforms like Saavn, Wynk, etc. that have become more popular due to its wide variety of choices in music. YouTube is the 4th most used app in India, as the number of smartphone users increases in India, there is scope for an increase in viewership.

REVIEW OF LITERATURE

- 49% of India's youth spend 2-3 hours a day binge watching content. (Dentsu Aegis Network (DAN) India's Data Sciences Division)
- 4 hours is the average time spent in consuming OTT video content in a day by millennials and Gen Z. (Dentsu Aegis Network (DAN) India's Data Sciences Division)

- On average, people signed on to 3 new OTT platforms during lockdown. (Dentsu Aegis Network (DAN) India’s Data Sciences Division)
- 65% of millennials and Gen Z Prefer consuming video content on an OTT platform over TV. (Dentsu Aegis Network (DAN) India’s Data Sciences Division)
- “While a large chunk of India is a single TV household, affordable data and advancements in mobile technology has been a huge boost to the country’s growing online content and gaming consumer base. This, coupled with the effects of the lockdown has led to the dramatic growth of online video content consumers and gamers with a high increment of audiences coming from a very young segment of the population”, Gautam Mehra, CEO, DAN Programmatic & Chief Data Officer
- A report published by the Data Sciences Division of Dentsu Aegis Network (DAN) India showed that OTT platforms increased the popularity of binge-watching video content in the comfort of the home. The younger generation or Gen Z spend more time watching video content while eating and before sleeping. And Indian youngsters spend more than 11 hours a week watching videos online, while the number is 8 hours a week on a global timeline on average.

OBJECTIVES OF THE STUDY

- To know the addiction of young adults to OTT Platforms.
- To know the humongous effects of OTT Platforms on the physical health and mental health of young adults.
- To know the energy level of young adults after online streaming.

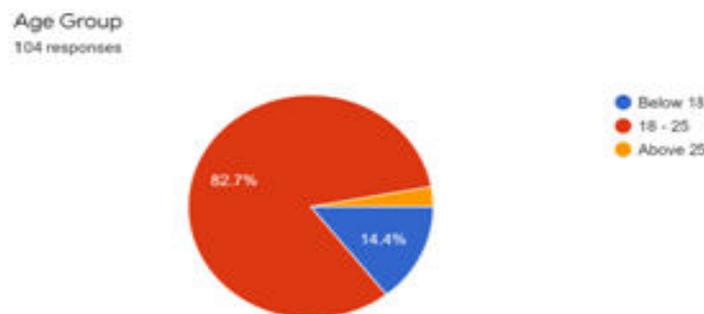
RESEARCH METHODOLOGY

The research methodology used for this research paper is a questionnaire survey among people of different ages who are regular OTT Platform users. This questionnaire was conducted for obtaining primary data. The sample size used for the survey is 104 users. The sample consists of 86 users of age between 18 years to 25 years (82.7%) and 15 users below 18 years of age (14.4%) and 3 users above 25 years of age (2.9%). Some secondary data is also extracted from the internet for further assistance

ANALYSIS OF RESEARCH

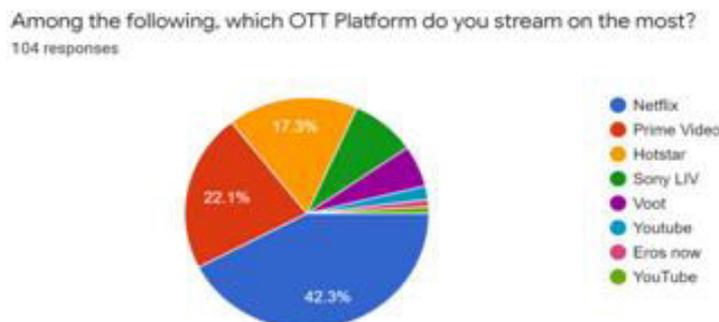
The following questions were put forward in the survey:

Question 1 – What is the age group of the participant?



86 users were of the age between 18 years to 25 years - also known as young adults (82.7%) and 15 users were below 18 years of age (14.4%) and 3 users were above 25 years of age (2.9%).

Question 2 – Among the following, which OTT Platform does the participant stream on the most?

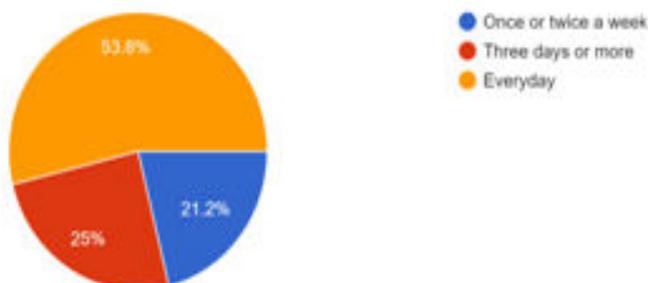


The term ‘Netflix and Chill’ stands true in this question because most of the participants who participated in the survey streamed on Netflix, followed by Prime Video and Hotstar.

Question 3 – On an average, how many days of the week does the participant stream online?

On an average, how many days of the week do you stream online?

104 responses

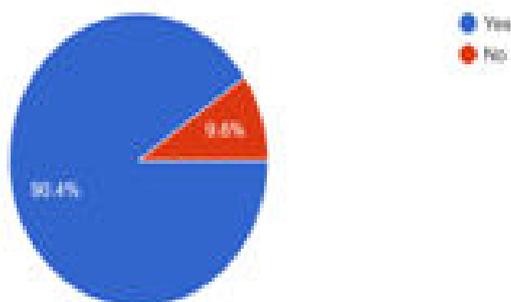


A total of 53.8% (56) of the participants streamed online everyday which is very much greater than the number of days people used to watch television before the growth of OTT Platforms! 25% (26) of the sample watched online for three days or more and only 21.2% (22) people streamed online once or twice a week

Question 4 – Has the participant started streaming online more than you used to after the rise of OTT Platforms?

Have you started streaming online more than you used to after the rise of OTT Platforms?

104 responses

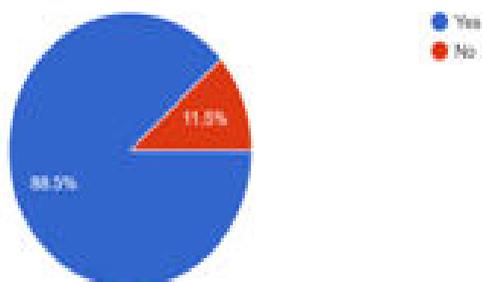


Due to OTT Platforms being available at any time of the day and at any location as compared to televisions and theaters, a large number of 94 (90.4%) people out of 104 people started streaming online more than they used to.

Question 5 – Does the participant feel lethargic/energy less after watching something for too long/binge watching?

Do you feel lethargic/energy less after watching something for too long/binge watching?

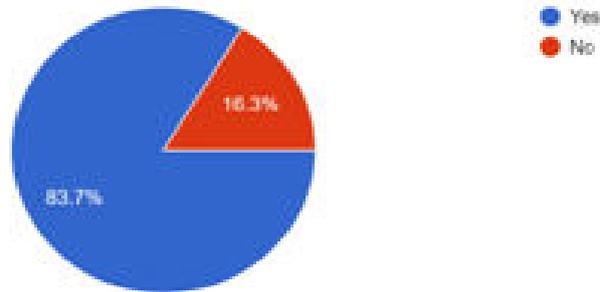
104 responses



On answering this question, a total of 92 people agreed to feeling lethargic after streaming online for too long. The reason for the same is because every hour you spend streaming is an hour, you're not spending doing something else--not even moving. This affects both your mental and physical health.

Question 6 – Has the participant’s sleep pattern been affected due to binge watching?

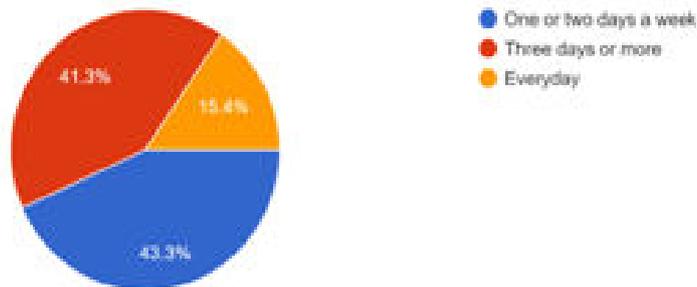
Has your sleep pattern been affected due to binge watching?
104 responses



Psychologically, a show may get you wound up, perhaps for hours, when you should be winding down for sleep. We enjoy the drama, tension, suspense, and action of good TV shows, but these also increase your heart rate, blood pressure, and adrenaline. When you finally go to bed, you may feel like you’ve just been through a stressful or even mildly traumatic experience, which is not conducive to sleep. 83.7% people who participated in the survey agreed to disturbed sleeping pattern due to binge watching.

Question 7 – How long can the participant stay without streaming online?

How long do you think you can stay without streaming online?
104 responses



Addiction is an inability to stop using a substance or engaging in a behavior even though it is causing psychological and physical harm. This question was asked to find out the level of dependency on online streaming platforms and it was shocking to see that majority of the people cannot go more than 2 days a week without online streaming.

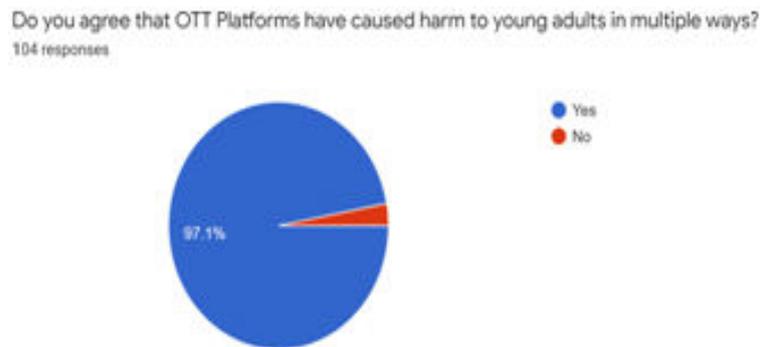
Question 8 – Is the participant aware of the fact that online streaming has caused multiple illnesses such as insomnia, depression, obesity, eyes disorder, etc.?

Are you aware of the fact that online streaming has caused multiple illnesses such as insomnia, depression, obesity, eyes disorder, etc.?
104 responses



In Spite of being aware of the ill-effects of online streaming on the mental and physical health of the people, participants still choose to engage in binge watching without consideration for the consequences. A major total of 96.2% of the participants is aware of the side effects of online streaming.

Question 9 – Does the participant agree that OTT Platforms have caused harm to young adults in multiple ways?



The response to this question is crystal clear and proves the findings of the entire paper to be true that binge watching on OTT Platforms has done more harm than good to the young generation of today's world. 101 people out of 104 agreed to the same.

FINDINGS OF THE STUDY

Streaming platforms are changing the way we watch television. With access to thousands of TV shows, movies and documentaries, we can watch just about anything we want, commercial-free, at any time, day or night.

There's a good chance you spent the past year streaming more video than ever before. In fact, according to market research firm Nielsen, the total amount of time people spent per week streaming video in 2020 increased by nearly 75% compared with 2019. Watching anywhere between two and six episodes of a TV series in one sitting is a behavior called binge watching, and it can have a negative impact on your health. Before you curl up for your next binge, here are three health considerations you should know.

Binge Watching is Like a Drug

When you're engaged in an activity you enjoy, your brain produces dopamine, a chemical that promotes feelings of pleasure, excitement and happiness. The release of dopamine helps us feel good, and it results in a "high" similar to that induced by drugs and other substances with addictive qualities. Your brain craves more and more, and as long as you continue to binge, your brain produces dopamine.

Binge Watching Isolates You

Watching TV has traditionally been a way to wind down. It can bring temporary relief from the daily stress of work, school and parenting. However, binge watching makes it easy to disconnect from other people. With multiple streaming accounts and multiple ways to view a show, it's easy to retreat to your corner of the house and zone out for hours at a time.

Binge Watching Interferes with Sleep

Watching back-to-back episodes of your favorite show may excite your brain, and as a result, interfere with your ability to sleep. Squeezing in just one more episode can cause you to stay up late at night, leaving you feeling tired and drained the next day.

There are Other Negative Health Effects:

- Depression and anxiety
- Back problems
- Respiratory function
- Lack of physical activity

Tips for Managing Binge Watching:

- Limit yourself to a certain (small) number of episodes, like two or three at a time. When you've reached your limit, turn off the TV and move on to something else.
- Set a time limit. Decide the amount of time you watch TV per night. Use a timer for accountability.
- Balance TV-viewing with other activities, such as physical exercise, seeing friends and reading.
- Keep lights turned on in the viewing area and your house so you don't lose sense of time.
- Make it a social thing and invite a friend, spouse or kids to watch TV with you. Chat with fellow fans about characters, plots and cliffhangers.

FUTURE SCOPE OF STUDY

Streaming video on demand has changed the audience experience more in a few years than cable television did over a few decades, and industry executives are unanimous in the belief that the new model has not reached its full potential. Technology continues to revolutionize how we experience entertainment, which programming we have access to and which storytellers are given the means to tell the stories. Some of the most valuable companies in the world are placing big bets on what's coming next.

REFERENCES

1. Usage of OTT platforms during covid-19 lockdown: trends, rationale and implications Navsangeet Saini
2. Emergence and future of Over-the-top (OTT) video services in India: an analytical research Sundaravel E. and Elangovan N.
3. <https://www.mid-day.com/lifestyle/infotainment/article/the-rise-of-ott-platforms-in-india-during-the-pandemic-23180042>
4. <https://udayindia.in/impact-of-ott-platforms-on-youth/>
5. <https://sambadenglish.com/the-rise-of-ott-platforms-in-india-and-the-fall-that-may-come-soon/>
6. https://www.business-standard.com/article/international/the-future-of-television-binge-watching-is-only-the-beginning-118121000033_1.html
7. <https://www.nm.org/healthbeat/healthy-tips/emotional-health/binge-watching>

**A COMPARATIVE STUDY FOR THE VALIDATION OF BODY COMPOSITION ASSESSMENT
USING DUAL ENERGY X-RAY ABSORPTIOMETRY AND BIOELECTRIC IMPEDANCE
ANALYSIS**

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ABSTRACT

Background: *Body composition assessment is a valuable technique for estimating the nutritional status of individuals and populations. It is a good predictor of nutritional and metabolic disease risk.*

Methods: *Body composition assessment was carried on 30 in-patients at the Pandit Dinanath Mangeshkar Hospital, Pune using both DX and BIA. Pearson's correlation coefficient ($p < 0.001$) and concurrent validity was estimated to assess the concordance between the two methods for body composition assessment*

Results: *The present study showed significantly positive correlation range between 0.58 to 0.89 for all the parameters measured which shows that data collected from BIA technique is as good as measurement collected from DXA.*

Conclusions: *BIA, as a body composition assessment technique, showed good concordance with DXA in this study and therefore can be used interchangeably for the assessment of nutritional status in large studies.*

Keywords: *Body Composition, Dual Energy X-Ray Absorptiometry, Bioelectric impedance analysis*

INTRODUCTION

The nutritional status of an individual is the result of multiple interacting factors with nutrient intake being one of its most important determinants. The most common methods of determination of nutritional status include direct methods such as anthropometric, biochemical, clinical and dietary intake measurements and indirect methods such as vital statistics obtained from the community healthcare and surveillance agencies (Shrivastava et al, 2014). Body composition assessment is another useful method for nutritional status assessment, monitoring changes associated with normal growth and development, designing nutritional strategies and measuring the efficacy of nutrition intervention programs (Kuriyan, 2018). The human body composition is a reflection of net lifetime accumulation of nutrients and other substrates acquired from the environment and retained by the body with components ranging from elements to tissues to organs (McArdle & Katch, 2010). Assessment of body composition assumes significance due to the fact that individuals of the same age, weight, height and BMI are likely to have different body compositions and metabolic profiles, which determines immediate and future health risks. The primary intent of assessing body composition is the objective evaluation of nutritional status through the quantification of fat mass, fat free mass, bone mineral content and body water. It is important to note that though at present, there are various methods available for the assessment of nutritional status in general, there is no universally accepted best method and that there is a continuous need to evolve methods that are valid and reliable and applicable for epidemiological settings. Assessment of body composition provides worthwhile information identification, diagnosis and management of many conditions amenable to nutrition therapy (Holmes and Racette, 2021)

Different methods of assessment of body composition based on different physical principles, using different models and assumptions have been developed. Body composition assessment methods are based on one of the following models including the two-compartment (2C), three-compartment (3C), four-compartment (4C) and the multicompartment models (Kurian, 2018).

The two-compartment model divides the body into two parts, fat mass (FM) and fat free mass (FFM). Hydrodensitometry, Air Displacement Plethysmography and Hydrometry are some of the common methods based on the two-compartment model. In the three-compartment model the fat free mass is divided into lean tissue mass and bone mineral content. Dual Energy X-ray Absorptiometry (DXA) is a method of body composition assessment based on the three-compartment model that provides a rapid and non-invasive regional and whole-body composition assessment by the transmission of high and low-energy x-rays through the body. The four-compartment model partitions the body mass into fat, mineral, total body water and protein. The multicompartment or atomic models of body composition assessment directly analyze the major elements of the body such as calcium, sodium, chloride, phosphorus, nitrogen, hydrogen, oxygen and carbon using methods such as Neutron activation Analysis.

Dual Energy X-ray Absorptiometry (DXA) is one of the most widely used methods for the assessment of body composition providing a highly accurate, multi-compartment assessment, across age ranges at a comparatively lower cost. It involves a whole-body scan that measures tissue absorption of high and low energy x-ray beams that pass through an individual lying supine on a scanning bed. It uses the attenuation of these beams to measure the various compartments namely bone mineral and soft-tissue composition. However, the DXA method has some important limitations including the need for a skilled radiologist, radiation exposure, the inability to directly quantify body water and is not portable. The involvement of radiation exposure makes it unsuitable for pregnant women and is not always the acceptable method for caregivers of young children (Lemos and Gallagher, 2017; Holmes and Racette, 2021),

Bioelectrical impedance analysis (BIA), on the other hand, is a technique used to predict body composition based, on the electrical conductive properties of the body and involves measuring the impedance to the flow of a low-electrical current, at a fixed frequency. The principle of BIA is that lean tissue consisting of water and electrolytes, is a good electrical conductor, while fat, which does not have water, is a poor conductor. With optimal standardization of methods, instruments and preparation of the individuals, the BIA can provide quick, easy and relatively inexpensive estimates of FFM and TBW in healthy populations and in obese individuals (Kuriyan, 2018). The advantages of the BIA technique is that the instrument is portable, safe, easy to use, relatively low cost with minimal participant burden, thus making it a useful tool for large studies (Lee and Gallagher, 2008). Several studies have reported that the BIA and DXA methods are interchangeable at the population level though studies have also reported that the BIA method is likely to estimate fat mass accurately and overestimate fat free mass when compared to other gold standard methods of body composition assessment namely DXA (Duren et al, 2008; Achamrah et al, 2018, Borga et al, 2018) while many other studies have reported good concordance between the two methods and that BIA is a reliable method for the assessment of body composition (Kyle et al, 2004; Ellegard et al, 2016; Francis et al, 2017; Genton et al, 2018;

The present study was conducted with the objective of comparing the validity of body composition parameter assessment using bioelectric impedance (BIA) with dual electron x-ray absorptiometry (DXA).

METHODOLOGY

The present study was conducted at Pandit Dinanath Mangeshkar Hospital at Pune, Maharashtra, India on a small sample of 30 subjects selected to be included in the study using the purposive convenience sampling method. The subjects were patients admitted to the hospital for treatment of various conditions and were recommended body composition analyses using DXA by the doctors treating them. These subjects were requested to also undergo body composition analysis based on BIA using our automated body composition analyzer. Data for the study was collected only after receiving informed consent from the subjects. This study has also been approved by the Institutional Ethics Committee of Dr BMN College of Home Science, Mumbai.

Information Obtained from the Subjects Included

- Anthropometric details of weight (kg), height (cm) was measured and BMI kg/m^2 was calculated. Body weight was measured to the nearest 100 gms on the body composition analyzer with subjects wearing light clothing. Height was measured to the nearest centimeter using a portable stadiometer. BMI (kg/m^2) was calculated using the weight (kg) and height (m) measurements and interpreted as per the World Health Organization (WHO) Asian BMI Classification (Table 1).

Table 1: WHO Asian BMI Classification

Nutritional Status	BMI Cut-Off (kg/m^2)
Underweight	<18.5
Normal	18.5 – 22.9
Overweight	23 – 24.9
Pre-Obese	25 – 29.9
Obese	≥ 30
Obese Type I (obese)	30 – 40
Obese Type II (morbid obese)	40.1 – 50
Obese Type III (super obese)	>50

Body Composition of Subjects Included in the Study was Assessed Using

- Dual Energy X-Ray Absorptiometry (Prodigy Advance GE Machine) and
- Calibrated, portable body composition analyser (Tanita model no. MA 420 with a Tetrapolar 8-Point Tactile Electrode System) which works on the principle of bioelectrical impedance (BIA).

The collected data was entered into Microsoft Excel 2019 master chart and the statistical software Statistical Package for Social Sciences version 22.0 was used for data analysis. Statistical significance was assessed at $p < 0.001$ (99% confidence interval)

Descriptive statistical analysis has been carried out in the present study. Results on continuous measurements are presented as Mean \pm Standard deviation and results on categorical measurements in numbers.

Concurrent validity was calculated to assess the correlation between measurements obtained using dual energy x-ray absorptiometry (DXA) and bioelectrical impedance analysis (BIA).

RESULTS & DISCUSSIONS

Anthropometric Parameters of the Study Sample: Tables 2 and 3 show the Mean \pm SD age, weight (kg), height (cm) and BMI (kg/m^2) of the study sample. The BMI classification of the study sample showed that 43.3% (n=13) were in the ideal range of BMI and the remaining subjects were either overweight or obese as per the WHO BMI Classification for Asians (Table 1).

Table 2: Description of Participants:

Characteristics	Minimum	Maximum	Mean \pm SD
Age (years)	28.80	82.40	58.95 \pm 14.91
Weight (Kg)	35.00	148.00	64.33 \pm 19.69
Height (cm)	129.00	170.00	152.98 \pm 8.99

Table 3: BMI Distribution of the Sample

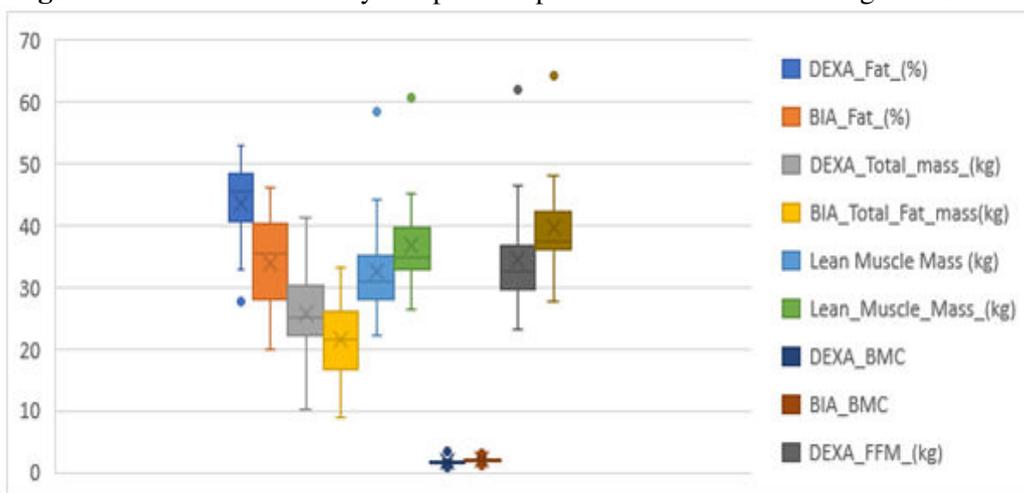
BMI Classification	N	%
Normal Weight	13	43.3
Overweight	10	33.3
Obese	07	23.3

Comparison of Body Composition Measurements Obtained Using BIA and DXA: Table 4 shows the means of the body composition parameters, namely, total fat mass (TFM), fat free mass (FFM), lean body mass (LBM), fat percentage (FM) and bone mineral density (BMD) as measured using both BIA and DXA. Figures 1 depicts the distribution of measurements of the various body composition parameters as obtained using both BIA & DXA. The correlation between the measurements obtained using both the methods.

Table 4: Means of Distribution of Measurements

Parameters	N	BIA			DXA		
		Min	Max	Mean \pm SD	Min	Max	Mean \pm SD
TFM (kg)	30	9.10	33.20	21.48 \pm 6.11	10.20	41.20	25.64 \pm 7.01
FFM (kg)	30	27.60	64.10	39.71 \pm 6.69	23.20	61.80	34.42 \pm 7.43
LBM (kg)	30	26.30	60.80	36.64 \pm 6.90	22.30	58.40	32.65 \pm 7.06
FM (%)	30	20.10	46.00	33.98 \pm 7.54	27.80	52.90	43.53 \pm 6.82
BMD	30	1.10	3.30	2.10 \pm 0.44	0.90	3.40	1.75 \pm 0.45

Figure 1: Distribution of body composition parameters assessment using BIA & DXA



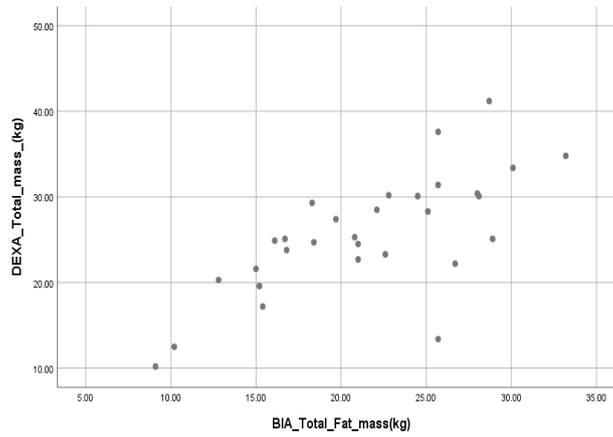


Figure 1: Correlation between DXA and BIA Fat Mass (kg)

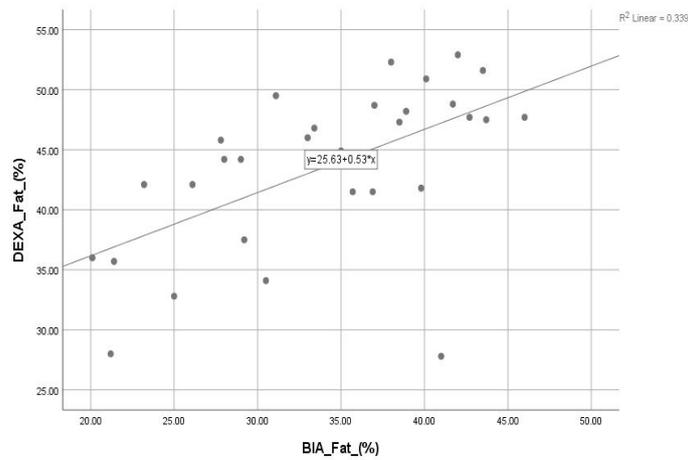


Figure 2: Correlation between and DXA and BIA Fat Percentage (%)

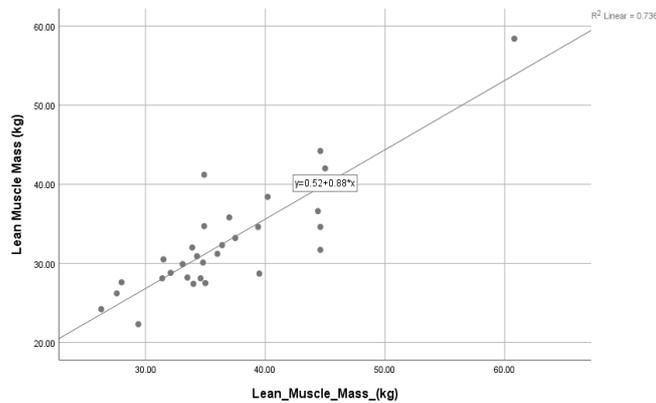


Figure 3: Correlation between DXA and BIA Lean Body Mass (kg)

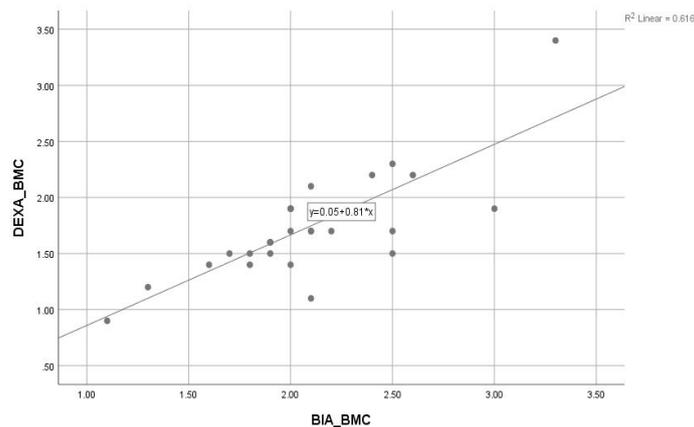


Figure 4: Correlation between and DXA and BIA BMC (%)

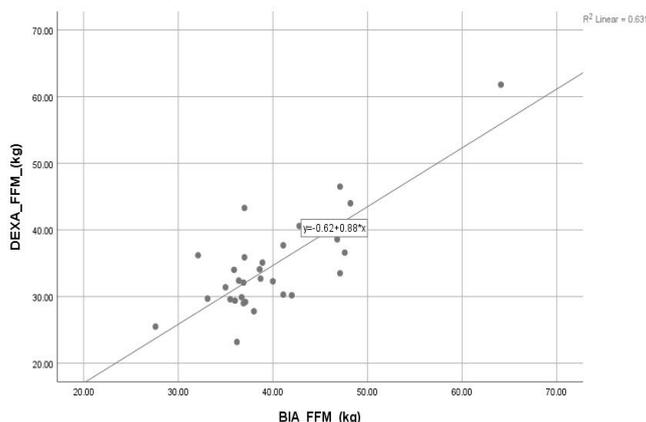


Figure 5: Correlation between DXA and Fat Free Mass (kg)

Validity refers to the degree to which a measure accurately taps the specific construct that it claims to be tapping. Criterion-related validity is concerned with the relationship between individuals’ performance on two measures tapping the same construct. It typically is estimated by correlating scores on a new measure with scores from an accepted criterion measure. There are two forms of criterion-related validity: predictive validity and concurrent validity.

Concurrent validity focuses on the extent to which scores on a new measure are related to scores from a criterion measure administered at the same time, whereas predictive validity uses the scores from the new measure to predict performance on a criterion measure administered at a later time.

Table 3.2: Correlation of DXA & BIA body composition parameters

Body composition parameters	Fat%	Total fat mass (kg)	Lean muscle mass (kg)	BMC	Fat free mass (kg)
N	30	30	30	30	30
Correlation	0.58	0.711	0.858	0.785	0.794
Significance value	0.001	0.000	0.000	0.000	0.000

Table 3.3: Paired Sample Test between DXA & BIA with significance 2-tailed tests

Body composition parameters	Mean + SD	95% confidence interval		T	Df	Significance 2 tailed
		Lower	Upper			
Fat %	9.54 ±6.59	7.08	12	7.93	29	0.00
Total fat mass	4.15 ±5.05	2.27	6.04	4.506	29	0.00
lean muscle mass	-3.99 ±3.72	-5.38	-2.60	-5.87	29	0.00
BMC	-0.3 ±0.29	-0.46	-0.24	-6.65	29	0.00
FFM	-5.29 ±4.58	-7.00	-3.58	-6.3	29	0.00

The present study shows that data collected from BIA technique is as good as measurement collected from DXA and that there is good concordance between the body composition measurements for various parameters using both the techniques.

CONCLUSION

A comparison of the body composition assessment for various parameters including fat mass, fat free mass, lean body mass, bone mineral content and total body water showed that both the methods are comparable for the assessment of body composition and that BIA can be used interchangeably with a reasonable level of accuracy in large populations and field studies.

LIMITATIONS AND RECOMMENDATIONS

One of the major limitations of the present study was its small sample size. It is recommended that similar studies be conducted on larger sample sizes to enable better extrapolation of results and interpretations.

REFERENCES

Achamrah, N., Colange, G., Delay, J., Rimbart, A., Folope, V., Petit, A., ... & Coëffier, M. (2018). Comparison of body composition assessment by DXA and BIA according to the body mass index: A retrospective study on 3655 measures. PloS one, 13(7), e0200465.

- Borga, M., West, J., Bell, J. D., Harvey, N. C., Romu, T., Heymsfield, S. B., & Leinhard, O. D. (2018). Advanced body composition assessment: from body mass index to body composition profiling. *Journal of Investigative Medicine*, 66(5), 1-9.
- Duren, D. L., Sherwood, R. J., Czerwinski, S. A., Lee, M., Choh, A. C., Siervogel, R. M., & Chumlea, W. C. (2008). Body composition methods: comparisons and interpretation. *Journal of diabetes science and technology*, 2(6), 1139-1146.
- Ellegård, L., Bertz, F., Winkvist, A., Bosaeus, I., & Brekke, H. K. (2016). Body composition in overweight and obese women postpartum: bioimpedance methods validated by dual energy X-ray absorptiometry and doubly labeled water. *European Journal of Clinical Nutrition*, 70(10), 1181-1188.
- Francis, P., Lyons, M., Piasecki, M., Mc Phee, J., Hind, K., & Jakeman, P. (2017). Measurement of muscle health in aging. *Biogerontology*, 18(6), 901-911.
- Francis, P., Lyons, M., Piasecki, M., Mc Phee, J., Hind, K., & Jakeman, P. (2017). Measurement of muscle health in aging. *Biogerontology*, 18(6), 901-911.
- Genton, L., Herrmann, F. R., Spörri, A., & Graf, C. E. (2018). Association of mortality and phase angle measured by different bioelectrical impedance analysis (BIA) devices. *Clinical nutrition*, 37(3), 1066-1069.
- Holmes, C. J., & Racette, S. B. (2021). The Utility of Body Composition Assessment in Nutrition and Clinical Practice: An Overview of Current Methodology. *Nutrients*, 13(8), 2493.
- Kuriyan R. (2018). Body composition techniques. *The Indian journal of medical research*, 148(5), 648-658. https://doi.org/10.4103/ijmr.IJMR_1777_18
- Kyle, U. G., Bosaeus, I., De Lorenzo, A. D., Deurenberg, P., Elia, M., Gómez, J. M., ... & Composition of the ESPEN Working Group. (2004). Bioelectrical impedance analysis—part I: review of principles and methods. *Clinical nutrition*, 23(5), 1226-1243.
- Lee, S. Y., & Gallagher, D. (2008). Assessment methods in human body composition. *Current opinion in clinical nutrition and metabolic care*, 11(5), 566.
- McArdle, William D., Frank I. Katch, and Victor L. Katch. 2010. *Exercise Physiology-Nutrition, Energy & Human performance* 7th ed. Lippincott Williams & Wilkins.
- Shrivastava, S. R., Shrivastava, P. S., & Ramasamy, J. (2014). Assessment of nutritional status in the community and clinical settings. *Journal of Medical Sciences*, 34(5), 211.
- Thibault, R., Genton, L., & Pichard, C. (2012). Body composition: why, when and for who?. *Clinical nutrition*, 31(4), 435-447.

SUSTAINABLE DEVELOPMENT GOALS 2030: CHALLENGES AND OPPORTUNITIES**SUB THEME: E-COMMERCE AND SUSTAINABILITY****Mrs. Anita Allwyn Lopez**

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ABSTRACT

The growth in Internet has led to the advancement of online business all over the world. The environmental, social, and economic aspects are significant to the e-commerce sector, on both the retailer and consumer sides. It cannot be over-emphasized how important the sustainability of e-commerce in all three dimensions is. E-commerce will allow consumers to shop online easily, 24 ×7, using secure payment systems; furthermore, trust in retailers' websites is of paramount importance to consumers. This calls our attention to the gap in previous studies, and consequently, the purpose of this study is to fill the gap, to ensure sustainable e-commerce in three dimensions; environmental, social, and economic. The question and aim under investigation are: How to integrate three dimensions into e-commerce to ensure that sustainability is achieved now and for future generations, while thriving as an industry? Collaboration is required, and all stakeholders in the virtual market must take appropriate responsibility.

Achieving sustainable development goals is the task of all countries, both developed and developing. At the same time, almost all countries are heading towards digital economy, with the core of e-commerce. The study aims to identify the connections between these two areas and analyze the effects that may arise as a result. The analysis showed that ecommerce is linked to 10 of the 17 UN Sustainable Development Goals. For the most part, these effects are positive. However, to achieve the most positive impact, the interest of both Internet companies and consumers is required.

Environmental and sustainability awareness has long been a trend in e-commerce. In a bid to successfully address increasing demands for sustainability from their consumers, online retailers have been pondering for some time now on topics like corporate social responsibility and eco-friendly approaches in the supply chain.

Keywords: e-commerce sustainability, environment, consumer

INTRODUCTION

In September 2015, during the United Nations Summit on Sustainable Development in New York, 193 UN member states officially adopted a new sustainable development agenda "Transforming our world: the 2030 Agenda for Sustainable Development". This plan includes 17 goals and 169 tasks. The goal of this program is to improve the quality of life and prospects for humanity.

Sustainability is not a negligible factor for online shops. The growing trend of environmental sustainability is humanity's reflex to fight the destructive nature of the "grow or die" imperative of capitalism. In e-commerce, the concept of sustainability can range from business models to packaging products and its role will become increasingly important in the coming years. Online shopping is becoming more and more popular worldwide. In 2021, the total number of digital buyers were 289 million in India. The number of digital buyers is likely to increase to 378 million by 2025. The rapidly growing e-commerce sector in the country is driven by personalized advertisements, discounts, quick delivery and return infrastructure, not to mention a high penetration rate of smartphones. This retail ecosystem combined with the comfort of being at home, a variety of choices, and door delivery has turned the tables for this sector quite significantly.

According to the Sustainability Annual Trends report, produced by the think tank agency Sustainability, indicates that e-commerce has experienced rapid growth in recent years and by doing so, this had an unprecedented environmental impact. To put this into a perspective, more than 2 billion tons of waste end up in landfills worldwide annually. All those cardboard boxes, plastic packing puffs, and Styrofoam peanuts have to be disposed of somewhere... and more often than not, that "somewhere" is the Great Pacific Garbage Patch.

If sustainability is not ensured, there will be some negative consequences, which can be a trigger for a shrinking ecosystem. In this regard, businesses should implement functions that take into account consumer preferences, which will make it as easy as possible to interact with them. The proliferation of e-commerce aims to increase the number of orders going to consumers, causing significant CO2 emissions and increasing traffic congestion in cities. B2C e-commerce delivery now accounts for a significant portion of total e-commerce shipments, causing increasing pollution. This pollution is not expected to decrease in the near future, as there is a growing trend in the number of customers and retailers using the Internet.

In addition, new businesses are being created day by day in the online marketplace, making serious demands on the distribution of goods that can damage the environment if appropriate measures are not taken. High emissions contribute to environmental pollution, affecting both the environment itself and the people who inhabit it. Consequently, e-commerce should pay special attention to environmental sustainability by seeking lower cost-dependent prices from logistics service providers and providing alternative transportation options for doing business whenever possible.

RESEARCH OBJECTIVES AND APPROACH

The overall purpose of this study is to establish the relationship between e-commerce and social sustainability. Then, the result of opinion survey, shall clarify the majority belief with respect to the effect of e-commerce activities on sustainability factors present in an organization. The result of the study will help the business to justify sustainable development and compliance; with e-commerce as a support activity. E-commerce proponents will also get an additional sustainability development point of view.

METHODS

The data for the study were open sources of information on the Internet and research paper presented in many publications.

LITERATURE REVIEW

The future of sustainable e-commerce can change daily due to dynamic e-commerce trends, but the primary focus should consider the following:

1. **Sustainable Packaging:** Organizations need to create innovative packaging solutions. What a package is made out of is equally important to how it is made and the way it is shipped. Reduce packaging size, find different sustainable packaging options online like compostable boxes etc.
2. **Sustainable Shipping:** Organizations can also create different shipping options for customers ordering multiple items like item consolidation. This helps by reducing the number of trips to the customer's home and the number of boxes used to ship the items;
3. **Supply Chain Integration:** There are many diverse industries active in e-commerce, but they all have opportunities to reduce wastes and inefficiencies up and down the supply chain through smarter digital integration. Connecting all stakeholders, inputs, and information sources through a unified ERP system and powering savvier decision-making can be the key to unlocking a leaner, lower footprint supply chain.
4. **Decreased Energy Waste:** This category is broad and it encompasses a variety of business factors like switching to solar or outsourcing specific work locally, but there should be an immediate focus on transportation waste. For example, Amazon revealed its electric delivery van in an effort to produce zero net carbon by 2040. Organizations can also provide detailed product descriptions and shipping processes to help decrease the number of items returned/exchanged due to lack of information, or misunderstanding.

CONCLUSION

The analysis showed that the contribution of e-commerce to achieving sustainable development goals is relatively high. E-commerce can help achieve 10 of the 17 SDG in one way or another. E-commerce has a positive impact on the sustainable development of both individual countries and the world. This impact is especially evident in the labor market, as the number of Internet companies are overgrowing, and with them, the number of jobs increases. Most vacancies require some qualifications, but in 2020 we saw a rise in areas such as courier delivery, where additional education is not required. E-commerce offers opportunities for access from anywhere globally to the same market for education and health services. Often, these services obtained over the Internet are cheaper. It includes primary and additional education, advanced training, getting medical consultations via the Internet from specialists from other countries, etc.

At the same time, e-commerce can have adverse effects on the environment. Searching, packaging, shipping and returning items purchased through online stores leave their carbon footprint. E-companies can affect their carbon footprint by using rational packaging and shipping methods, although this can come with additional costs. They can influence sustainable consumption by educating their customers about sustainable behavior and opportunities to reduce environmental pollution. E-companies can significantly reduce their negative contribution to sustainable development goals.

REFERENCES

1. <https://www.iso.org>
2. Topic: E-commerce worldwide, Statista, <https://www.statista.com/>
3. <https://www.iosrjournals.org/>
4. https://www.researchgate.net/publication/353214111_E-commerce_effects_for_the_sustainable_development_goals

**TATA'S CONTRIBUTION IN INDUSTRIALIZATION AND DEVELOPMENT OF TECHNOLOGY
IN SUSTAINABLE FUTURE OF ENERGY REQUIREMENTS IN INDIA THROUGH VERTICAL
INTERGATION****Dr. Ankur Randhelia**

Associate Professor, Department of Management, Eklavya University

ABSTRACT

The chairperson of Tata Sons Mr Natarajan Chandrasekaran has created an eco system which will benefit a group of companies in the Tata Group, this eco system is created by vertical integration of companies and is build around manufacturing of electric vehicles which are the future mode of transportation, since the non renewable sources of energy are about to exhaust and the price of crude oil is on an increase, our country and the rest of the world needs an alternative mode of transportation driven by renewable sources of energy. We can call this system as electric vehicles electronic vehicles eco - system.

The participant companies in this electronic vehicles eco - system are Tata Elxsi, Tata Chemicals, Tata Motors and Tata Power

Tata Group has designed the eco system in such a way that all of the companies will be able to increase the sales and their revenues as their final products will be utilised by the customers of this eco system. The design of the electric vehicles will come from Tata Elxsi, battery will come from Tata Chemicals, automobile will be manufactured by Tata Motors and when the vehicle will come on road it will be charged by the charging stations of Tata Power which will be producing energy through renewable sources . So this eco system developed by Tata Group will not only earn huge profits for the Tata Group but will help share holders of the respective companies earn good profits also it will provide latest technology to the end customers and make our country self dependent in terms of the growing needs of energy.

Keywords: Vertical Integration, Eco - System, Electric Vehicles, Renewable Sources of Energy.

Tata power one of the flag ship companies of the Tata group is one of the oldest power generation companies in India started in the year of 1910 under the leadership of legendary Sir Jamshed Ji Tata earlier known as Tata Hydroelectric Power Supply, today in the patronage of Mr. Ratan Tata today it is known as Tata Power.

Tata Power aims to develop an integrated approach towards a sustainable environment for a continuous supply of energy and fulfilling the growing energy needs of our country so that India would no longer be depended on supply of crude oil from the foreign countries. This will not only reduce our risk of being short of energy supplies in crucial periods of war, but in turn will also save billions of dollars as our precious foreign reserves we now have to spend on purchase which we are bound to spend in exchange of crude oil.

Talking about the revenue about 44% of the revenue comes from the power distribution 36% of revenue comes from thermal and hydropower generation and 10% of revenue comes from wind and solar power it is notable that Tata power aims to increase its share of solar and wind power in its power generation capacity so that continuous supply of power is maintained even after the non-renewable sources of energy are exhausted.

The Chairperson of Tata Sons which is the parent company of the Tata Group, Mr. Natarajan Chandrasekaran has created a master plan which is turning out to be a game changer in the field of energy requirements in India, Mr. Chandrashekhra has created an eco-systems through vertical integration which would result in connecting different companies of Tata group and in turn help in increasing the revenue of the organization. we can call this eco system as Electric Vehicle eco system.

ELECTRIC VEHICLE ECO SYSTEM

One can assume that the most beneficiary company of electric vehicle eco system would be Tata Motors but the main aim of this eco system is to benefit Tata Power one of the important part of this eco system is development of infrastructure for the electric charging stations taking the early mover advantage Tata Power has started installing its charging stations in various cities till date Tata Power can boast of more than 1000 charging stations in about 100 cities of our country till the year of 2026 Tata Power aims to take the no of charging stations to over 100000, the increasing competition in market of electric vehicles with the entry of global giants like Tesla will only benefit the already established electric charging stations of Tata Power. Entry of global giants like Tesla will increase competition in the electric vehicle market and in turn benefit the end customers as the existing companies will be under a pressure to provide better technology in the market and lower the cost of their products, with passing time the future of electric vehicles in our country will only become brighter.

The development of this eco system also goes parallel to the objectives of the government which aims to convert 70 percent of the total four wheeler vehicles and 80 percent of two and three wheelers on road to electric vehicles recently Tata Power has collaborated with Hindustan Petroleum a government owned oil corporation in India to set up electric charging stations on its retail outlets this collaboration will provide Tata Power to extend its reach to even the innermost parts of our country.

Another company which is going to get a huge advantage from this electric vehicle eco system is Tata Chemicals. Since lithium ion battery is the most important component in an electric vehicle as it comprises of about 30 percent of the overall cost of an electric vehicle this implies that increasing sales of the electric vehicles will further benefit the demand of Lithium ion batteries, Tata Chemicals has established one of the biggest Lithium ion battery plant of our country it has purchased 126 acres of land at Dholera in Gujarat, currently China is the biggest manufacturer and exporter of Lithium ion batteries in the world but Tata chemicals wishes to takeover the Chinese markets in the near future. Currently Tata chemicals imports Lithium from Bolivia and also they have established a capacity to recycle smart phones and get some raw material for manufacturing of Lithium ion batteries. This is how Tata Group is getting leverage through vertical integration of Tata Power and Tata chemicals.

Another important company of the Tata Group which is getting leverage through the electronic vehicle eco system is Tata Motors. Since last one year sales of electric vehicles in India have seen a growth of over one hundred percent and as Tata Motors is already having an early mover advantage in India with about seventy one percent of market share in the electric vehicles market with Tata Nexon being their primary product, in august 2021 only 1022 units of Tata Nexon were sold, future of Tata Motors seems to be promising as the vertical integration will help the company in lowering its cost of production and thus Tata Motors will be able to deliver it products at affordable prices. Since the sales of Jaguar land rover are getting hit in the European market, Tata Motors is planning to focus on manufacturing of electric vehicles which will be the future of the automotive manufacturing industry.

Another company of the Tata Group which is getting a huge advantage through the electronic vehicle eco system is Tata ELXSI, Tata Elxsi designs the structure and shape of automobiles it has collaborations with automobile giants of Europe and it designs automobiles for them.

So we can see that Tata Group has made a perfect eco system for electric vehicles in which the design of the automobile will come from Tata Elxsi, battery will come from Tata Chemicals, automobile will be made by Tata Motors and when the vehicle will come on road it will be charged by the charging stations of Tata Power which will be producing energy through renewable source of energy namely wind power, hydro power and solar energy. So this vertical integration done by Tata Group will not only earn huge revenues for the Tata Group and help its share holders earn handsome profits but it will also provide world class technology to the end customers and make our country self dependent in terms of the growing needs of energy.

F.Y.	2018	2019	2020	2021
Tata Chemicals	23.47%	23.47%	28.51%	31.90%
Tata Power	31.05%	31.05%	35.27%	45.21%
Tata Motors	33.30%	35.30%	39.52%	43.73%
Tata Elxsi	42.27%	42.22%	42.22%	42.22%

THE GROWTH OF SHARE PRICES IN TATA COMPANIES IN LAST FOUR YEARS

It would be notable that Tata Sons has raised its share holding particularly in these companies of the electric vehicle eco system which is a clear indication that Tata Group is quite bullish on this vertical integration of its companies and the returns in shares of these companies in the last five years is the testimony of the trust that Tata Group has laid in its plan of vertical integration to gain strategic advantage over its competitors and make our country self sustained in energy requirements.

APPENDICES

You tube vedio-Tata Stocks Rally: Temporary or Permanent? Channel- Convey by Finnovationz

<https://www.tata.com>

<https://www.tatamotors.com>

<https://www.tatachemicals.com>

<https://www.tatapower.com>

<https://www.tataelxsi.com>

ROLE OF ECONOMIC GROWTH AND EMPLOYMENT IN SUSTAINABLE DEVELOPMENT GOALS**Iyer Ashwin Ganesh¹ and Gauri Prashant Pai**¹Student (Tyb.Com) and ²Department of Commerce, Management and Law, VPM's R.Z Shah College of Arts, Science and Commerce, Mulund, University of Mumbai**ABSTRACT**

Economic Growth is connected with employment and other sustainable development goals like no poverty and no hunger. For an economy to growth, it is important that the people in that economy are employed with a decent work and this will end poverty and hunger and help the economy and its people to grow. Since the pandemic many have lost their jobs and the global economy was in recession. The government has to create more employment as to keep the economy growing there should be a decent working environment for everyone with a decent pay scale. Since independence India has made a lot of progress in employment rates and economic growth. As for now India is the second fastest growing economy in the world after China. Recently, entrepreneurial wave has come in India and the Indian government is also motivating people in creating business by providing government schemes which will create employment in the country and help to grow the economy. India has also motivated people to make and buy made in India products which is also called as "Atmanirbhar Bharat".

Keywords: Economic Growth, Employment, GDP

INTRODUCTION

"Economic Growth without investment in human development is unsustainable and unethical"

- *Amartya Sen*

Sustainable Development: - Sustainable Development is an organized way of development to meet human development goals while sustaining the nature, natural resources, human resource and the whole ecosystem on which the economy and society depends. As a result, the UN (United Nations) on 25th September 2015 adopted 17 Sustainable Development Goals out of 169 SDGs which include No Poverty, Zero Hunger, Good Health & Well Being, Quality Education, Gender Equality, Clean Water & Sanitation, Affordable & Clean Energy, Decent Work & Economic Growth, Industry Innovation & Infrastructure, Reduced Inequalities etc. Which are to be fulfilled by 2030 by all the countries.

Economic Growth: - Economic Growth of a country can be measured by the GDP of the country. Gross domestic product (GDP) is the monetary value of all finished goods and services made within a country during a specific period. The Economy of a country can also grow with an increase in capital goods, labor force, technology and human capital.

How Economic Growth & Employment are Connected? - Employment provides income to a person which creates effective demand for consumption and capital goods in the country. This effective demand leads to more production of goods and service in the country and thus increase the economic growth of the country. Hence, Economic Growth and Employment are inter-linked.

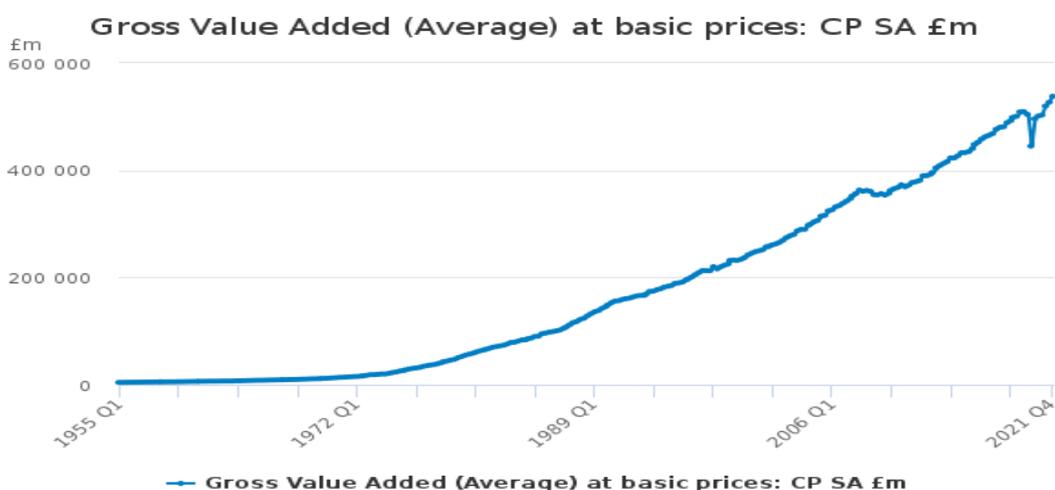
Economic growth and employment have always been very important for all the countries even in the period of monarchy. It is believed that economic growth of a country is at its maximum only when the people in that country are having a decent job or are employed. Economic Growth of a country is estimated by its GDP. The importance of growth and employment has been recognized in our constitution also as the Directive principles lays down that "the State shall in particular, direct in policy towards securing (a) that citizens, men and women equally have the right to an adequate means of livelihood (b) that the ownership and control of the measures of the community are so distributed as best to sub-verse the common good,(c) that the operation of economic system does not result in concentration of wealth and means of production to common detriment" Keeping in view the Government of India adopted planning as a means of fostering economic development. Since independence India has improved its economy a lot. Now India is the sixth largest economy in the world with a \$3.29 trillion of nominal GDP. In this period of progress India has faced a lot of economic, social, employment and much more issues.

Economic Growth and Employment of India Since Independence

In 1947 India got independence from the British Rule at that time India's GDP was mere Rs 2.7 lakh crores accounting for a paltry of 3 percent of the world's total GDP as most of the population was engaged in primary occupation. In 1947 the major economic problems faced by the Indian Economy were: -

- Low national income and per capita income: - Economic Growth of any country can be viewed from its level of national income and per capita income. In the year 1948-49 India’s national income was estimated to be 8000 crores and per capita income was Rs 265 per annum which was too low.
- Vast inequalities in income and wealth: - Indian Economy was also marked by great inequalities in distribution of income and wealth. In 1947 70% of India’s population was in poverty.
- Predominance of Agriculture: - Most of India’s population was engaged in primary occupation like mining, fishing, poultry farming and agriculture. In 1950-51 more than 50% of India’s GDP came from agricultural sector.
- High Population: - As we all know India is a very highly populated country. India ranks second next to China with a high birth rate of 45 per 1000 Because of which most of the population was unemployed.

There were more such economic problems faced by the Indian Government at the time of Independence such as massive Unemployment, Scarcity of Capital and Low Capital Formation, Underdeveloped Infrastructure, Low Level of Technology etc. which were solved year after year by the Government.



Source:

Source: (www.data.gov.in), (https://www.statista.com)

Now the Indian Economy has improved a lot. India’s GDP in 2021 is \$3.29 trillion with a paltry of 7.19% of the world’s total GDP. Agricultural sector, Industrial Sector and Service Sector contribute 16.38%, 29.34% and 54.27% respectively in India’s GDP which shows us that most of the population is engaged in service and industrial sectors. India’s national income in 2021 is 147.54 lakh crores and per capita income is Rs 86,659 per annum. India has a poverty rate of 14.7% in 2021. The unemployment rate in India is 7.11% in 2020. So, the above data shows that there has been a lot of economic growth in India which has also led to many employment opportunities. India has a total of 94 Unicorn Companies (Unicorn Companies are those whose valuation is more than 100 crores) from which 76 of them came in the last three years whereas UK has only 63 of them which really helps to increase the economic growth as well as create many more employment opportunities with a decent work and pay scale. In 1947 the literacy rate in India was just 12% which now has grown up to 77.7% so with the increasing literacy the employment opportunities are also created by the government which ultimately helps the economy to growth in a sustainable way.

New Economic Policy of 1991

There is no doubt that the new economic policy adopted by the Indian Government has created a lot of employment opportunities and helped the economic to revive from the past 1991 situation and grow the Indian Economy. The New Economic Policy has boosted the Indian Economy which has played a very crucial and vital role in Indian Economy. The New Economic Policy was mainly about Liberalization, Privatization and Globalization by bringing these policies the government wanted to remove all the unwanted restrictions and bring more private companies in the economy to compete at a global stage. The main objectives for adopting the New Economic Policies are: -

- The Main Objective was to plunge the Indian Economy in the Global Arena by bring “Globalization” in India.
- The NEP (New Economic Policy) intended to bring down the Rate of Inflation

- To move towards higher economic growth rate and to build a stronger foreign exchange reserve
- To Achieve Economic Stabilization and to bring global economy to market economy by removing unwanted restrictions
- It wanted to permit international flow of goods, services, food, human resource and technology
- It wanted to increase the participation of private companies in all the sectors of the economy

Economic Impact of the Pandemic in India

In 2020 Covid-19 pandemic broke out all over the world which affected the economic growth and economic conditions of all the nations. Worldwide to control the situation of pandemic all the countries declared locked down. As the locked down continued for long-time companies weren't able to pay all their employees as a result all the companies removed the non-working employees because of which the unemployment rate increased worldwide which directly affected the economic growth of all the countries. India also got effected because of the pandemic as a result India's economic growth slow down from 5.7% from 2018-19 to 3.1% in 2020. According to World Bank, the current pandemic has "magnified pre-existing risks to India's economic outlook". India's unemployment rose from 6.7% to 26% India's economy was expected to lose over RS 32,000 crores every day during the first 21 days of complete lockdown.

SUGGESTIONS

To Achieve Economic Growth in a Country Following are the Suggestion

- **Tourism:** - Tourism Industry is the 4th largest industry in the world which can help the country to achieve its Economic Growth. The Country has to portray its image in a good and attractive way as to attract more and more tourist from all around the world. Tourism also brings a good amount of forex in the country.
- **Technology:** - Technology is the most important part in any country's development. All the countries spend lakhs of money to achieve technological advancement as everyone say "The Future is Technology". We live in a Technological driven era as a result technological development is very important and plays a crucial role in the economic growth.
- **Exports:** - Exports contribute the largest part of any countries GDP and as a result, to gain or achieve economic growth the country has to increase its exports and decrease its imports. Hence, India has started made in India so that the imports are being decreased.
- **Increased Production:** - Exports contribution in an economy is massive. Increase in Exports can't be achieved without increase in production. The country has to increase its labor forces and machineries to increase its production which will increase the exports and economic growth can be achieved.
- **Entrepreneurship Wave:** - Many people in the world still have a mindset of getting a job. Hence, in highly populated countries because of competition many people get unemployed. As a result, people and the government should encourage the citizens to do startups with innovative and problem-solving ideas which can create employment opportunities and thus contribute in the economic growth of a country.

As Employment and Economic Growth are interlinked or interconnected it is very important for all the countries that all the citizens are employed with a decent work.

CONCLUSION

Indian Government has taken a lot of initiatives to create employment and to build a strong economy. We have seen the conditions in 1947 and the pandemic period but comparing those times with now India has improved a lot and much more people are employed with a good working environment. Though still economic and employment problem are there but with the recently increasing speed Indian Economy will soon tackle them all. According to many Economists, Scholars and Experts India is the second Fastest growing economy with a rate of 8-8.5% per annum behind China which has a Growth rate of 4.9% which has been recently decreased a lot so India has an advantage. Recently, Indian working population has increased a lot and if it's used properly India can soon become a developed country for which the government is also taking initiatives. China's working population has decreased because of which the Chinese government has introduced two child policy to increase its working population. So, India has got so much opportunities which the government is using and attracting the foreign companies to invest in India and recently many foreign governments has also shown interest in the Indian Economy. Apart from this India also help under-developing countries and the countries facing economic crisis so that they can overcome the crisis and grow their economy strong.

REFERENCES**WEBSITES**

- <https://www.india.gov.in/topics/finance-taxes/economy>
- <https://dea.gov.in/data-statistics>
- <https://timesofindia.indiatimes.com>
- <https://www.imf.org>
- <https://www.indianeconomy.net>
- <https://www.ibef.org/economy/indian-economy-overview>
- <https://dbie.rbi.org.in>
- <https://www.Indianeconomicassociation.in>
- www.data.gov.in
- <https://indiaclass.com/best-educational-websites-in-india>
- <https://www.focus-economics.com/countries/china>
- <https://www.trade.gov/knowledge-product/exporting-china-market-overview>
- <https://economictimes.indiatimes.com>
- https://economicsnetwork.ac.uk/data_sets
- <https://www.statista.com/topics/6500/the-british-economy>
- <https://www.loc.gov/.../2016-01-08/china-two-child-policy-becomes-law>
- <https://www.economicdiscussion.net/indian-economy/problems-indian-economy/8-major-problems-faced-by-the-indian-economy/14140>
- <https://indiacr.in/indian-economy-overview-2021/> #:~: text= Indian Economy Overview Aatma Nirbhar Bharat Abhiyan., shot in the arm for the Economy.
- <https://www.un.org/en>

BOOKS

- Indian Economy Since Independence: A Comprehensive and Critical Analysis of India's Economy, 1947-2016 by Dr.Uma Kapila
- Indian Economy by Ramesh Singh

NEWSPAPER

- The Economic Times: - India Growth Trajectory; May 01, 2021
- BBC: - UK set for slowest growth; April 19, 2020
- The Times of India: - All Indicators show that India is on the growth path; May 05, 2022

A STUDY OF FINANCIAL SUSTAINABILITY OF FAMILY OWNED MANUFACTURING BUSINESSES IN TEXTILE INDUSTRY WITH SPECIAL REFERENCE TO ARVIND LTD. AND WELSPUN INDIA LTD.**Mr. Sathe Atul¹ and Dr. (CA) Chandrashekhar Dhansing Deore²**¹Assistant Professor, Department of Accountancy, H R College of Commerce and Economics²Associate Professor, Department of Accountancy, K.P.B Hinduja College of Commerce**ABSTRACT**

Since decades the textile industry in India has been hallmark for the economy in terms of its contribution in GDP, employment generation etc. The textile industry is dominated by family owned businesses of various scales and legal status. Over a period of time, textile industry has faced various challenges but it has been successful to overcome them and even excel. The researchers aim to study whether transition in composition of capital has had its impact on profitability, liquidity and solvency of business. The paper also examines the factors affecting financial sustainability of family businesses in specifically in textile industry. The comparative analysis of 2 companies was conducted from data derived through annual reports. The various ratios indicating financial parameters were calculated and co - relation was used to test the hypothesis. Also mean and standard deviation was computed to assess sensitivity of factors towards profitability, liquidity and solvency position of business. Debt Equity Ratio was taken as independent variable and 6 dependent variables were identified to calculate ratios. The researchers conclude that profitability and liquidity are positively correlated with significant co – relation whereas there is negative insignificant co- relation between capital structure and solvency.

Keywords: Financial Sustainability, Textile Industry, Profitability, Liquidity, Solvency,

INTRODUCTION

The textile industry in India traditionally after agriculture is the only industry to generate employment opportunities for skill and unskilled labour. Even today, it continues to be the second largest employment generating sector in Indian economy. As per report from Invest India, the domestic apparel and textile industry in India has 5 % share in GDP, 12% share in total exports where India stands on 6th position in the world as exporter in the world. It is expected that industry shall reach \$ 190 BN by 2025 – 26. Ministry of textiles have taken various measures for its growth.

Arvind Ltd. and Welspun India Ltd. are amounts top 3 textile companies in India and share a common factor that they are family owned manufacturing units. Their business as spread over many countries exposing them to global challenges and opportunities arising out of privatization and globalization. As businesses are seeing successions in business, the philosophy of management and acceptance towards alternative finance sources is on the rise.

REVIEW OF LITERATURE

- 1) Zarah Puspitaningtyas, (2020), in her research article, named Sustainability of Family Business in Perspective of Financial Accounting, deliberated on how family business sustainability strategy can be designed for small and medium business. The study aims to know and analyze sustainability strategy from financial accounting perspective. The author has used qualitative descriptive method of structured interviews with informants belonging to family business in “Batik and Bordir” sector in Banyuwangi, Indonesia. The results of study say that 2 dominants strategies would be useful for businesses to continue, first being maintaining balance of family values and second being application of modern techniques of management. Further study is required to identify factors that can supplement to increase knowledge and understand implications of financial accounting in business.
- 2) Adriana Cioca, Kassam Wehbe, Delia Popescu and Constanta Popescu, (2020), in their article named The Main Drivers for Sustainable Decisions in a Family Business That Impact the Company’s Performance, aimed at key factors behind strategic decisions made by family businesses for its sustainability with reference to economic, environmental and social. The authors have drawn attention to the strategies for main stream ideas of doing business. The study attempts to develop the statistical model for forecasting revenues in the next year through identifying relations between internal factors and their corresponding financial objectives. In addition, long term strategies have been discussed in the article as well. The reflection of human resources with operations management can be seen in financial performance and sustainability of family owned businesses. It also helps to maximise higher return on investment. The results will contribute to the existing literature for researchers.

SIGNIFICANCE OF STUDY

This study will be useful for professionals, management, researchers involved in strategy making and financial decision making of family owned businesses specifically engaged in textile sector. The study shall provide views on how capital structure transition and its impact on business is an integrated part of business decision making.

OBJECTIVES OF STUDY

- To study various factors affecting financial sustainability of family owned businesses.
- To understand contributions of family owned businesses in textile industry in Indian economy.
- To measure impact of capital structure transition on profitability, liquidity and solvency.
- To assess business valuations on the basis of capital structure transition.

HYPOTHESES

1) **H0** - Liquidity has no impact on capital structure planning of family owned business in textile industry.

H1 - Liquidity has impact on capital structure planning of family owned business in textile industry.

2) **H0** - Profitability has no impact on capital structure planning of family owned business in textile industry.

H1 - Profitability has impact on capital structure planning of family owned business in textile industry.

3) **H0** - Solvency has no impact on capital structure planning of family owned business in textile industry.

H1 - Solvency has impact on capital structure planning of family owned business in textile industry.

RESEARCH DESIGN

- 1) Universe – Researchers have studied family owned businesses involved in textile sector.
- 2) Sampling Unit – The sample is 2 listed companies involved in textile sector.
- 3) Sampling Procedure – The researchers adopted convenience sampling technique to select 2 companies from the universe for purpose of the analysis. Data was collected from published annual reports of the companies.

ANALYSIS AND INTERPRETATION

For the purpose of analysis, current ratio and quick ratio are taken as indicators of liquidity, return on capital employed and return on sales are taken as indicators of profitability and interest coverage ratio, total outside liabilities to tangible net worth ratio and interest incidence ratio are taken as indicators of solvency.

Table 1: Financial Indicators, Mean Performance and Sensitivity Analysis through Standard Deviation

Sr. No.	Particular	Arvind Ltd.		Welspun India Ltd.	
		Mean	Standard Deviation	Mean	Standard Deviation
1	Current Ratio	0.8873	0.0788	1.0192	0.1786
2	Quick Ratio	0.3566	0.0637	0.5074	0.1489
3	Return on Capital Employed	5.418	3.5843	21.052	4.6134
4	Return on Sales	13.482	3.5445	7.689	4.6828
5	Interest Coverage Ratio	2.1741	0.4854	3.0286	1.5894
6	Total Outside Liabilities / Tangible Net worth	1.5056	0.1415	2.0168	0.6821
7	Interest Incidence	9.97	2.0991	9.586	1.4399

On the basis of data from 2013 to 2021, it is observed that there is wide fluctuation in terms of sensitivity of financial indicators. Inter – company analysis suggests that Welspun India Ltd. shows higher standard deviation amongst all financial indicators of liquidity, profitability and solvency making it more aggressive company compared to Arvind Ltd. in terms of financial position and its decision making. In general quick ratio is least sensitive and return on capital employed is highly sensitive factor.

Table 2: Correlation of Financial Indicators in relation to Debt Equity Ratio

Sr. No.	Particulars	Arvind Ltd.	Welspun India Ltd.
1	Current Ratio	0.5111	-0.8056
2	Quick Ratio	-0.1324	-0.7474
3	Return on Capital Employed	0.8244	-0.2556
4	Return on Sales	0.7929	0.3649

5	Interest Coverage Ratio	0.6690	-0.6601
6	Total Outside Liabilities / Tangible Net worth	0.7027	0.9890
7	Interest Incidence	0.6933	0.7675

On the basis of data from 2013 to 2021, it is observed that correlation of financial indicators in relation to debt equity ratio shows mixed trend. Change in capital structure indicated through debt equity ratio is directly correlated for return on sales, total outside liabilities to tangible net worth and interest incidence for both the companies which indicates that change in debt equity has positive impact. Quick ratio for both companies is inversely correlated suggesting negative impact of change in capital structure. Other indicators don't show common trend of correlation between both the companies.

CONCLUSION

In conclusion, there is inconsistency in terms of sensitivity and dependency of various factors indicating liquidity, profitability and solvency due to transition in capital structure. In textile sector, average returns have been declining due to various policies of government but Arvind Ltd. and Welspun India Ltd. have remained at par or have surpassed industry benchmark. Financial indicators are end results derived from involvement of multiple factors. Hence, researchers feel that there is scope for further investigation by bifurcating indicators in terms of causes of change.

REFERENCES

- 1) Hategan, C.D.; Curea-Pitorac, R.I.; Hategan, V.P. The Romanian Family Businesses Philosophy for Performance and Sustainability. *Sustainability* **2019**, *11*, 1715. (CrossRef)
- 2) Artiach, T.; Lee, D.; Nelson, D.; Walker, J. The Determinants of Corporate Sustainability Performance. *Account. Financ.* 2010, *50*, 31–51. [CrossRef]
- 3) R.H. Brockhaus, "Family Business Succession: Suggestions for Future Research", *Family Business Review*, Vol.17, no.2, pp. 165 – 177, 2004.
- 4) A. Stewart, "Can Family Business Loosen the Grips of Accounting, Economics and Finance?", *Journal of Family Business Strategy*, Vol. 9, no. 3, pp. 153 – 166, 2018. [https:// doi.org/ 10.1016/ j.jfbs. 2018. 06.001](https://doi.org/10.1016/j.jfbs.2018.06.001).

FINANCIAL SUSTAINABILITY: NEED OF THE HOUR**Shamnani Barkha G**

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ABSTRACT

Financial sustainability is the ability to cover costs from its own resources and ability to pay debt as three key dimensions to measure financial sustainability. To assess financial sustainability – earning enough resources, asset sustainability and ability to repay obligations are the three dimensions taken into consideration. Financial sustainability has been perceived differently in different sectors and an attempt has been made to understand it as regards different sectors. Financial performance can be used as a proxy for financial sustainability. Several risk measures are used as indicators to measure financial sustainability as in addition to profitability, liquidity and risk, sustainable investments are also considered to criteria of environment, social affairs and good corporate governance. It is an assessment that a project will have enough and sufficient funds to meet all its resource and financial obligations, whether the fund continues or not. It is the ability to start, grow and maintain your staffing business with short- and long-term financial stability. For, proper financial sustainability, proper review and access of capital for current and future needs, balancing profitability, proper planning and understand the key prospects as regards sales and customers must be followed. The business to maintain financial sustainability must keep an eye on the cash flows of the business to ensure that the outgoing cash flow expenses do not exceed the incoming cash flow money.

Keywords: Financial sustainability, profits, risk, liquidity and Growth.

INTRODUCTION AND MEANING OF FINANCIAL SUSTAINABILITY: AN OVERVIEW

In a Business, content and social media are considered to be important but before transparency in a business, Sustainability is required and ensured to give it a long-term life to maintain its eco-friendliness along with sound financial status. It is that element which all the business owners hope to achieve at every point of business and it's the goal of every business which they need to maintain and ensure for making their business a better and competitive one for Longer standings in terms of survival.

Financial Sustainability is that state which a business achieves by offering its products and services to the market for a price wherein it not only covers its expenses but also creates profit. In order to achieve this, a proper plan which ensures long term goals and proper resources utilization needs to be done. A company needs to keep a watchful eye on the cash inflows and outflows of the business to ensure that at all times the business does exceed its expenses from its incomes and the outgoing cash is always less than the incoming cash.

Financial sustainability is regarded as a crucial control parameter complementing shareholder value and can be viewed by risk-averse investors as a secondary condition of investment decisions. It reduces refinancing and insolvency risks, leading to risk-adjusted excess returns in an imperfect capital market with financing restrictions and insolvency costs. We propose measuring a firm's financial sustainability in terms of four conditions: (1) firm growth, (2) the company's ability to survive, (3) an acceptable overall level of earnings risk exposure, and (4) an attractive earnings risk profile. The measure is positioned at the intersection of sustainability management, risk management and risk governance. Sustainable development must ensure that it meets the needs of the present generation without compromising the ability of future generations to meet their own needs. When applying the basic idea of the financial sustainability companies' financial management must ensure present financial success without jeopardizing future financial success, including the success of future generations. A measurement concept for financial sustainability is also important for risk management especially for the strategic and holistic risk governance approach. The conditions to measure financial sustainability: (1) a real growth of the firm that prevents its shrinkage or liquidation over time, (2) a significant probability of firm survival, (3) an adequate level of risk exposure by the firm, and (4) an attractive risk–return profile for the owners. These four conditions add to internal and external risk governance approaches as they align with existing approaches to rating, risk management, simulation, company valuation and management control. This therefore establish and develop a link between sustainability and risk management.

FOUR KEY COMPONENTS TO FINACIAL STABILITY

Financial sustainability as the ability to start, grow and maintain your staffing business with short- and long-term financial stability. A Business cannot long without healthy profits and *sustainable* growth. The Key components are-

1. Access to Capital

It takes money to make money, and you'll need a lot of it to run a successful staffing business. Typically, you'll need initial startup capital to get your staffing firm up and running, ongoing working capital to maintain your day-to-day operations and investment capital to put back into your company and support growth.

To access this capital, you can either self-finance (if your staffing firm is financially sustainable), fund through equity infusion (if you have the money to front the operations yourself), take a loan out at a bank (the most traditional form of lending) or work with a specialty finance agency.

2. Profitability

When it comes to profitability, balance counts (and there can be negatives on each side). If your profitability is too low, it may have a negative impact on your cash flow and increase stress throughout your organization. Low profits leave no room for revenue or expense fluctuations and limit your ability to reinvest, which can ultimately compromise your financial sustainability.

On the other side of the token, if your profitability is too high (yes, there is such a thing) it may open you up to undercutting by lower-priced competitors, especially MSPs. Sustained undercutting could lead to destructive price wars in the market and contribute to overall financial instability.

3. Reporting

Taking the time to assess your staffing business is critical to healthy, sustained growth. Creating a plan to review your finances on a regular basis allows you to adjust in time to reverse a negative trend or capture a unique positive opportunity. Whatever your method of secured capital, solid financial reporting will be required to secure increased levels of capital support. And when it's time to sell your business or grow through mergers and acquisitions, solid financials are a must.

4. Planning

"If you don't know where you are going, you'll end up someplace else." – Yogi Berra

It can be surprisingly easy to stray from your set path to *sustainable* growth if you do not have your own personal business plan to keep you on course. Your financial planning should be flexible enough to allow for market changes and unexpected opportunities, but strong enough to keep you from veering into dangerous, *unsustainable* territory.

For the long-term financial health of your staffing business, take these **Action Steps today**:

- Review your current and future capital needs and determine how you will address your anticipated growth
- Analyze and work to balance your profitability
- Assess and improve your reporting and planning capabilities
- Evaluate and understand the purchasing processes of your customers and key prospects.

Pros of Finance Sustainability

Finance teams are powerful in an organization because they:

- Control the flows of money and finance that are critical in enabling or blocking what the organization does
- Provide the information that is vital to decision making
- Influence others to take action

Sustainable businesses deliver financial returns in the short and long term while generating positive value for society and operating within environmental constraints. Organizations that fail to address environmental and social risks will be less resilient to these challenges, and so put their own existence at risk

The Listed Pros are as Follows

- a. Cost cutting and efficiency
- b. Risk mitigation
- c. New competitive and revenue opportunities
- d. Innovation
- e. Improved employee development and retention.

REVIEW OF LITERATURE

“A systematic review of literature about finance and sustainability”, by Herbert, Flavio and Vinicus in the year May, 2016 in the journal of Sustainable Finance and Investment has tried to explain and link the gap between Finance and Sustainability. The study mainly focuses on realizing the gaps between finance and sustainability. An alarming need has been focused on the article presented by the authors wherein it has been regarded that financial sustainability is a key parameter in running and surviving a business in a longer run well- establishing manner. It has realized that financial sustainability is an add on approach required by firms and businesses along with profits, liquidity and risk maintenance. It realizes the need of well maintaining the capital and the inflows and outflows of the business.

The aforementioned factors consist of the ability of an organization to finance its operations, how the capital is used and the outcome of the consumption of the company's funds. The major recommendations consist of integrating sustainability into organizational culture and ensuring transparency of the companies financial performance. Through this, the firm increases its status as a viable option for investors and allows firms to shift the financing of their activities from their business operations to investment, further securing it through loyalty programs. The acquisition of social capital, increasing the technical capacity of the firm and using effective financial tools for analysis of potential endeavors of the organization are also key to achieving financial sustainability.

RESEARCH METHODOLOGY

This study has been done by adopting the secondary method which was adopted by referring to various research articles published under various journals along with various websites and reference articles in newspaper providing an in-depth analysis on financial sustainability as a need in today's businesses.

CONCLUSIONS

The study has made it evident that for a business to maintain its long term goals and survival, it has to maintain its financial sustainability at all times. It needs to do so by well maintaining its expenses and incomes and by keeping an eye on the cash inflows and cash outflows of the business in a larger view. It needs to maintain its profits well to bring a financial sustainability along with a proper access to capital and proper planning to manage its resources in an optimum manner.

RECOMMENDATIONS

- Review your current and future capital needs and determine how you will address your anticipated growth
- Analyze and work to balance your profitability
- Assess and improve your reporting and planning capabilities
- Evaluate and understand the purchasing processes of your customers and key prospects.

BIBLIOGRAPHY

www.thebusinesstimes.com

www.theeconomictimes.com

www.businessstandards.com

Newspapers and articles

Webliography

Google Chrome

Yahoo.Com

ROLE OF GREEN CHEMISTRY IN SUSTAINABLE DEVELOPMENT AND ITS APPROACH TO QUALITATIVE ANALYSIS OF AN ORGANIC COMPOUND AT UNDERGRADUATE LEVEL**Dr. Bhavini Mehl Dand*¹, Tanvi Venkoba Patel²**¹Assistant Professor, Department of Chemistry, VPM's R Z Shah College of Arts, Science and Commerce²VPM's R Z Shah College of Arts, Science and Commerce, Mithagar Road, Mulund East, Mumbai- 81**ABSTRACT**

Green Chemistry also known as sustainable chemistry is the area in science used to design, manufacture chemical products and processes that helps to reduce, minimize and eliminate waste and avoids use of hazardous substance. Sustainable development uses technology which requires minimum resources, creates less waste or no waste and design environment friendly processes. Thus, green chemistry is a tool to build a sustainable technology. The present research work is based on qualitative analysis of organic compound by BSc undergraduate students in chemistry practical. This study will help us to understand how to use microscale techniques instead of conventional methods and also learn the green approach towards performing experiment.

INTRODUCTION

The Sustainable Development Goals (SDGs) are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". The SDGs were set up in 2015 by the United Nations General Assembly (UN-GA) and are intended to be achieved by 2030.

In 1998, Paul Anastas and John C. Warner published a set of principles to guide the practice of green chemistry. Green chemistry is a tool for building up sustainable technology and a step towards sustainable development goals. The twelve principles helps to design the chemical processes to utilize maximum raw material to get converted into product, use of renewable material feedstocks and energy resources, use safe and environment friendly substances, design energy efficient processes and explains waste management

The twelve principles of green chemistry are:

1. **Prevention:** Preventing waste is better than treating or cleaning up waste after it is created.
2. **Atom Economy:** Synthetic methods should try to maximize the incorporation of all materials used in the process into the final product. This means that less waste will be generated as a result.
3. **Less Hazardous Chemical Syntheses:** Synthetic methods should avoid using or generating substances toxic to humans and/or the environment.
4. **Designing Safer Chemicals:** Chemical products should be designed to achieve their desired function while being as non-toxic as possible.
5. **Safer Solvents and Auxiliaries:** Auxiliary substances should be avoided wherever possible, and as non-hazardous as possible when they must be used.
6. **Design for Energy Efficiency:** Energy requirements should be minimized, and processes should be conducted at ambient temperature and pressure whenever possible.
7. **Use of Renewable Feedstock:** Whenever it is practical to do so, renewable feedstock or raw materials are preferable to non-renewable ones.
8. **Reduce Derivatives:** Unnecessary generation of derivatives -such as the use of protecting groups, should be minimized or avoided if possible; such steps require additional reagents and may generate additional waste.
9. **Use Catalysts:** Catalytic reagents that can be used in small quantities to repeat a reaction are superior to stoichiometric reagents (ones that are consumed in a reaction).
10. **Design for Degradation:** Chemical products should be designed so that they do not pollute the environment; when their function is complete, they should break down into non-harmful products.
11. **Real-Time Analysis for Pollution Prevention:** Analytical methodologies need to be further developed to permit real-time, in-process monitoring and control *before* hazardous substances form.
12. **Inherently Safer Chemistry for Accident Prevention:** Whenever possible, the substances in a process, and the forms of those substances, should be chosen to minimize risks such as explosions, fires, and accidental releases.

RATIONAL AND GAP ANALYSIS

One of the 12 principles of green chemistry is Prevention i.e., to reduce the wastage at the source itself. In undergraduate level BSc chemistry students perform practical on qualitative analysis of organic compound. While characterizing an organic compound we perform various tests and various chemicals are utilized. While performing tests students use more chemicals than required and hence more wastage occurs. Hence for cleaning and rinsing purpose more water is wasted and we become responsible for wasting chemicals, wasting water and polluting water. This project aims at green approach to qualitative analysis of an organic compound in undergraduate level students. This study will help us to understand how to reduce use of chemicals, use less water, and create less waste while performing experiment.

OBJECTIVES

- The main objective of this research study is to check the amount of chemicals used practically and as with green micro scale experiments, to know what costs more chemicals and what gives more effective result i.e., Exploitation and optimum utilization of resources. It concerns the prevention of waste generation. It is better to avoid generating waste than to treat it after its generation.
- It aims to have greener approach towards experiments performed in college
- Less wastage more economic
- It will help students to become ecofriendly

RESEARCH METHODOLOGY

Microscale chemistry are experiments in miniature which focuses on the recent trend of developing smaller-scale experiments for the use in the lab. This study aims to understand difference between conventional method we use and microscale method we are supposed to use (Table 1, Figure 1).

Table 1: Difference between conventional and microscale method for analysis of an organic compound

Conventional method /Normal Method	Microscale method
Large test tubes, Bigger size spatula, large amount of chemicals, Bunsen burners.	Small semi micro test tube, small spatula, cigarette lighter for heating purpose.
Tight bottles of glass to store chemicals or organic reagents to avoid contamination.	Homeo medicine bottle just similar to eye drop bottle for storing organic reagents or chemicals to avoid contamination.
Chemical wastage will be more if test goes wrong and to be repeated.	Chemical wastage will be less if test goes wrong and to be repeated.
Large test tubes are used	Can be performed on porcelain tile.
More quantities of reagents are required.	One drop of liquid substance/ 5 mg of solid substance+ one drop of reagent is enough

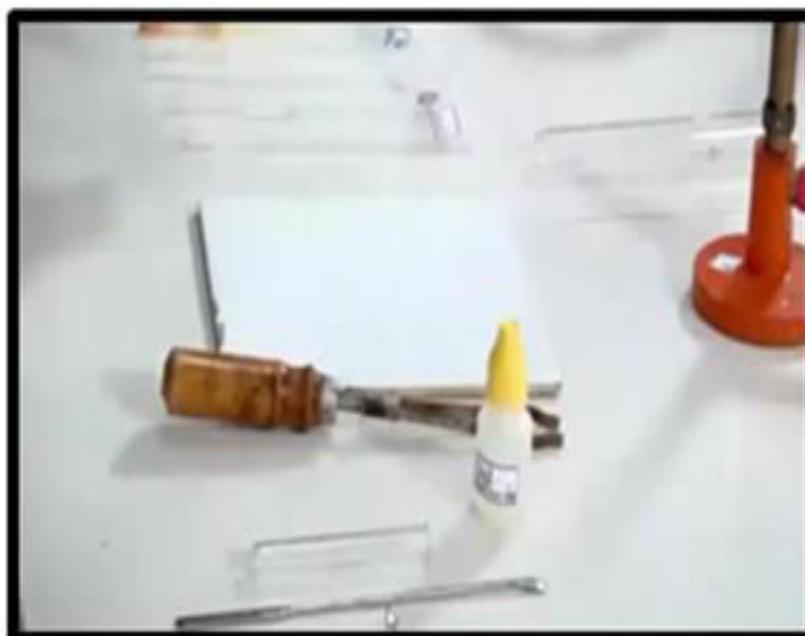


Figure 1: Microscale experiment tools

Examples of Certain Tests

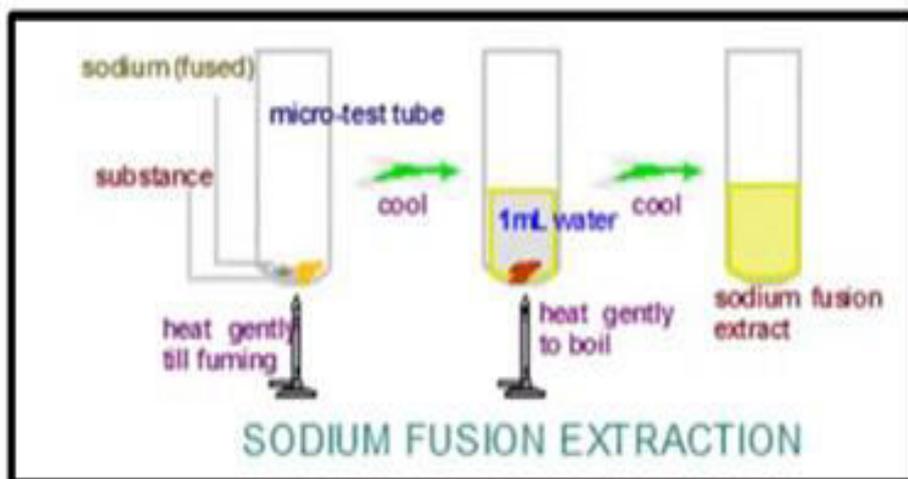
1) Micro scale experiments-organic qualitative analysis i.e., **Lassaigne's test**

Figure 2: sodium fusion extraction by microscale technique

- **Conventional Method:** 2 fusion tubes+ organic substance+ 10 ml Distilled water + 10 minutes heating using Bunsen burner.
- **Microscale Method:** small piece of sodium + 5 mg of substance+ 4 drops of water + 2-3 minutes heating

So we are avoiding 10 minutes of heating per student per experiment, so we save many minutes of LPG heating in a single experiment.

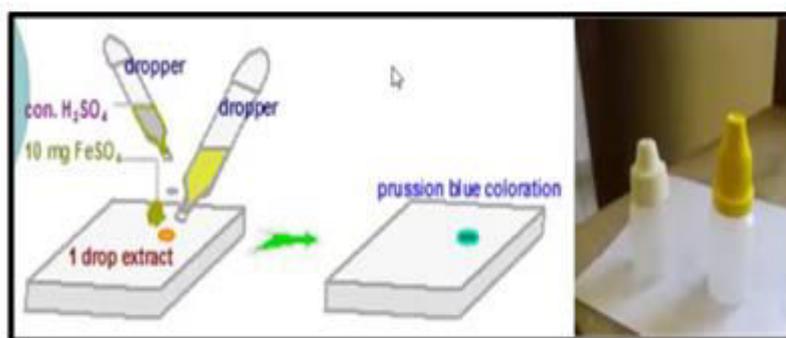
2) Micro scale experiments-organic qualitative analysis i.e., **Test for nitrogen**

Figure 3: Test for Nitrogen by microscale technique

- **Conventional Method:** Few drops of extract + few drops of freshly prepared saturated FeSO_4 , heat, cool and add few drops of dil. H_2SO_4 .
- **Microscale Method:** 1 drop of extract + one drop of saturated FeSO_4 solution+ 1 drop of 50% H_2SO_4

We can keep the ferrous sulphate solution in the homeo medicine bottle as of in the conventional method we prepare it fresh and maximum amount is wasted.

3) Micro scale experiments-organic qualitative analysis i.e., **test for carboxylic acid**

- **Conventional Method:** few mg of compound (big spatula) + approx 1 ml of saturated sodium bicarbonate- strong effervescence
- **Microscale Method:** pinch of compound (small spatula) + 1 drop of saturated sodium bicarbonate- strong effervescence

4) Micro scale experiments-organic qualitative analysis i.e., **test for aromatic primary amine**

- **Conventional Method:** few mg of compound + approx 1ml of dil HCl + few drops of NaNO_2 solution, cool in ice bath and then add approx 1 ml of beta- naphthol in NaOH solution-orange red dye formation
- **Microscale Method:** pinch of compound + 1 drop of HCl + 1 drop of NaNO_2 solution + 1 ml of beta-naphthol in NaOH solution-orange red dye formation

If proper cooling is not done in conventional method for aromatic primary amine test then students don't get orange red dye instead gets some brown colour which indicates diazonium salt is decomposed and students may report test as negative. This problem does not arise in microscale method.

All non-heating tests can be performed on tile and heating experiments can be done by using gas lighter. These will save lot of chemical wastage and also water used for washing. Above are examples of some of the tests which are used in qualitative analysis of an organic compound. Likewise whatever we do on macroscale can actually be done on microscale because the number of molecules present in one drop/5 mg of the substance is more than sufficient to perform a test. In above tests we save chemicals, LPG heating, water to wash chemicals and consequently electricity as we will perform it in no time. Also there is no emission of fumes to avoid global warming to some extent.

Expected Outcomes

It saves many resources and the outcome at the end of every experiments performed are more advantageous, better and avoids wastage than that of conventional method. We will save majority of chemicals, limited gas utilization, less water usage, etc. Students will also understand how to be ecofriendly during performing experiments by using minimal of resources.

Benefits to the Society

- Green chemistry principle can be achieved in the organic qualitative analysis by scaling down the quantity of chemicals.
- There is no need to use extra quantities of chemicals.
- Using less chemicals will save money for the college and can be utilized for some good purpose.
- Reduction in use of energy and water will definitely save our society
- Utilizing minimal resources to become ecofriendly
- Results in source reduction because it prevents the generation of pollution and at the same time reduces the negative impacts of chemical products and processes on human health and the environment
- Smaller storage area and shorter reaction times so more time for evaluation and communication.

FUTURE SCOPE

As of for future we need much amount of sources of fuels and many other renewable sources like wind, solar water and if we keep polluting the same, there will be a day when global warming will reach at the tip point due to all the excessive chemicals we use without thinking a minute about future. So using Micro scale Chemistry is a good future scope for reduced wastage of unnecessary chemicals, fewer synthetic steps, lesser amount of waste and end of the pipe treatment, allow for higher yields, faster testing and increased capacity, resulting in lower costs and higher profits. This is economically profitable and also is a good way to make our nature greener and invest the saved money for our motherland itself.

After all,

“Less Waste is Directly Proportional to Less Pollution”.

LIMITATIONS

Hands on practice will be required for students to perform such practical in minimum use of chemicals, water, gas, electricity, etc.

CONCLUSION

Green chemistry is not just theoretical part of organic chemistry but its principles have to be practiced in academics, research as well as industries. Sustainable development through green chemistry will help students to meet their needs without compromising the ability of future generations to meet their needs. The practice of principles of green chemistry in daily needs will help students to understand the importance of nature and its preservation. Students will also understand the concepts of green reactants, green catalyst, green reagents, green solvents, etc. With applying green chemistry principles in qualitative analysis of an organic compound, students will start thinking of having greener approach towards organic synthesis also. Using micro scale techniques will make students realize the environment, economic and social dimensions of sustainable development. Implementing green chemistry principles in their curriculum will help them grow in future and they will think to have greener approach while planning a synthesis or undergoing any research work. To bring sustainable development in future generations, sustainable chemistry have to be incorporated in curriculum of undergraduate students to make them understand the principles of green chemistry based on 3R's- Reduce, Reuse and Recycle and make them learn to convert experiments environment friendly, cost effective, nontoxic and attain maximum atom economy.

REFERENCES

1. United Nations; Resolution adopted by the General Assembly on 6 July 2017, Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development, 2017, A/RES/71/313
2. United Nations; Resolution adopted by the General Assembly on 25 September 2015, transforming our world: the 2030 Agenda for Sustainable Development, 2015, A/RES/70/1.
3. Singh M. M., Zvi S., and Pike R. M; Microscale Chemistry and Green Chemistry: Complementary Pedagogies, *Journal of Chemical Education*, 1999, 76, 12.
4. Duarte R., M. Gabriela T. C. R., Adélio A. S. C. M.; Reaction Scale and Green Chemistry: Microscale or Macroscale, Which Is Greener? , *Journal of Chemical Education*, 2017, 94 (9), 1255-1264.
5. Anastas P. T. and Warner J. C.; *Green chemistry: theory and practice*. Oxford [England]; New York: Oxford University Press, 1998, ISBN 9780198502340.
6. "12 Principles of Green Chemistry - American Chemical Society". American Chemical Society. Available online on [https:// www.acs.org/ content/ acs/ en/ greenchemistry/ principles/ 12-principles -of- green-chemistry.html](https://www.acs.org/content/acs/en/greenchemistry/principles/12-principles-of-green-chemistry.html)
7. Das A. K., Chakraborty R. and Guardia M.; *Teaching Green Analytical and Synthesis Chemistry: Performing Laboratory Experiments in a Greener Way*, 2019, 45-74.
8. Microscale chemistry, Available online on [https:// edu.rsc.org/ resources/ collections/ microscale-chemistry](https://edu.rsc.org/resources/collections/microscale-chemistry)
9. Green Approach to Chemistry Experiments by Prof. S. Murugan, Available online on [https:// www.youtube. com/ watch? v= o37DPNqeNdM](https://www.youtube.com/watch?v=o37DPNqeNdM)
10. 12 principles of Green Chemistry, Available online on [https:// www. youtube. com/ watch? v= C0K1XRT1myg](https://www.youtube.com/watch?v=C0K1XRT1myg)

SOLID WASTE MANAGEMENT- METHODS, CHALLENGES AND OPPORTUNITIES; A COMPARATIVE STUDY ON PERSPECTIVES OF RURAL AND URBAN PEOPLE**Chaithra M**

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ABSTRACT

Solid waste disposal and management is one of the major threaten all over the world even though the developed countries are on ongoing researches for best management systems of waste especially that of solid waste. The main aim of this study is to investigate the solid-waste management methods among urban and rural people and to develop innovative techniques for pollution-free and sustainable environment. The global impacts of solid wastes are growing day by day. This research paper is prepared based on the survey responses from more than 100 people from different cultural, religious, educational, professional and financial back ground which made it highly relevant. This comparative analysis of urban and rural waste management is a rare area of research. The waste management is a predominant issue for people who are not receiving any such services from local Government. Appreciated, valuable and innovative ideas were put forwarded by participants. The best outcome of this research and analysis is that it is opened for creative and novel ideas from participants. The need of more focus on this issue from Government agencies, the importance and contributions of non-profit and Non-Governmental organisations in waste management etc. became the part of discussion. Finally this is not an issue which can be resolved by the Government or Non-Governmental Agencies only but also each and every citizen must be responsible for the resolution. So that the scope of the study is the application of the practical thinking. There are upcoming opportunities in the waste-management research area. Of course there are challenges to resolve the issue but a long-term research and analysis can bring huge changes in the current solid-waste management systems which will be a world-wide revolution.

Keywords; Waste disposal management, Innovative techniques, Government-agencies, Non-Governmental organisations and Revolution.

INTRODUCTION

Solid waste involves the different types of garbages which are made by human or other animals and are usually generated through industrial, residential and commercial activities throughout the world. Solid waste includes waste generated in construction of new buildings or their demolition works, polythene bags, plastic bottles, kitchen vegetable wastes, cardboard diagnostic instruments, human and animal anatomical wastes, syringes, drug bottles, dangerous wastes, discarded computer and mobile phones, cathode ray tubes, head phones etc.

The per capita waste in India ranges from 200g-600g per day as per calculations. Not only the production but also the improper management of wastes play critical role in the pollution generation. Our country is one of the least urbanized countries of the world. But its urban population is the second largest amongst the countries of the world also the biggest producer of Municipal Solid Waste. Delhi, Mumbai, Kolkata and Chennai are the metropolitan cities account for more than 42% of India's urban population (Neha Gupta, Krishna Kumar Yadav and Vinit Kumar, 2015). Coming to researches and opportunities, a rapid growth in science and various metrics have been developed to examine the dynamics in different research disciplines. This pollution control by novel technologies helps to construct better world with advanced waste-management, disease-free and pollution-free. Thus the opportunities for researches are not limited (Syieluing Wong et al.,2020) Researches conclude that the waste generation will likely to increase from 62 to 165 million tonnes by 2030.

REVIEW OF LITERATURE

Increased number of destructed natural resources is a leading global issue which may lead to uncertain future. The development of strategic waste management plan is very essential in this condition (Qingbin Song et al.,2014). Municipal solid waste management is another key factor of solid-waste management. It is a neglected area of urban development (Anupam Khajuria et al., 2010). India represents 18 percent population of the world which is the second biggest country. Eventhough our country does not have enough facilities and frame works for solid superfluous regulations (Kumar Hassan, 2019). Waste management is a main area to be focused and under the Ministry of Environment, Forests and Climate Change. Prevention is the best alternative for the management of wastes. There should be enough priority for environmental education, actions and programmes (Benone otávio souza de oliveira). Recycling, reuse, and composting are the commonly used methods for waste treatment thus reducing transport and final disposal cost, providing revenue from the sale of recyclable materials and positive gain in environmental impact is much more pronounced (Victor Emery David, 2020). A

comparative study of rural and urban waste management is highly lacking. Usually urban communities lack space and resources for waste disposal. The municipality has great role in the waste management. There are significant differences between the organisation and solid-waste management. The content of solid-waste also has great variations in rural and urban areas (Simon Boateng, 2016). Another main factor is the implementation of existing rules and necessity of more strict rules. The solid waste management rules have been revised after 16 years. This new rule replaces the Municipal Solid wastes (management and Handling) Rules 2000. The segregation, recovery, reuse and recycle of wastes are given importance and the responsibilities were assigned to institutional generators, event organizers, hotels, restaurants etc. in partnership with local bodies and fees can be charged, (Civildaily, Solid Waste Management Rules, 2016). Promotion of waste energy, central monitoring committee was formed etc. are some of the main points involved.

OBJECTIVES OF THE STUDY

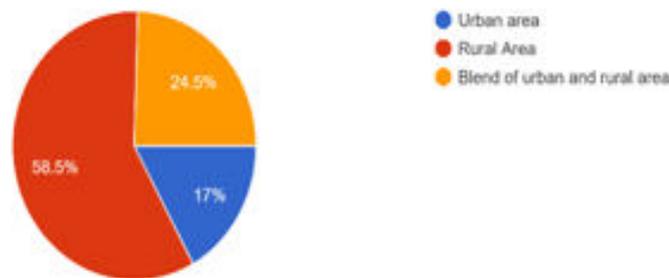
- 1) Collection of data about the waste-disposal from people of different life styles
- 2) To provide more awareness about the solid-waste disposal awareness
- 3) To emphasize the impacts of solid-waste accumulation and bring this problem under the scrutiny of the Government.
- 4) Present and apply innovative technologies for proper and efficient solid waste-disposal

RESEARCH METHODOLOGY

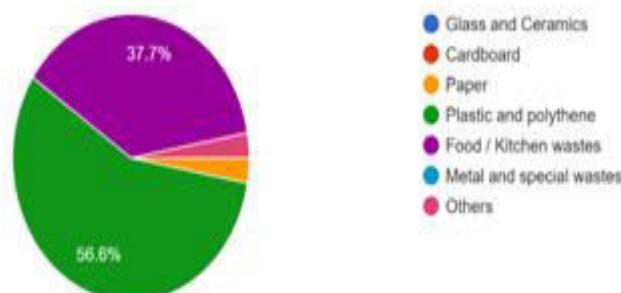
The current study is based on the method of data collection. A questionnaire was prepared considering the solid-waste type, method of disposal, area of stay, services offered by local bodies for waste management, method of waste disposal etc. The questionnaire could collect the individual innovative techniques and ideas from the participants. A survey was carried out by sharing the questions via Google form and responses of more than 100 people were collected through G Mail account within 3 days. The analysis and graphical representations of data were done with the help of Google form and G Mail tools.

RESULT

You are staying in
106 responses



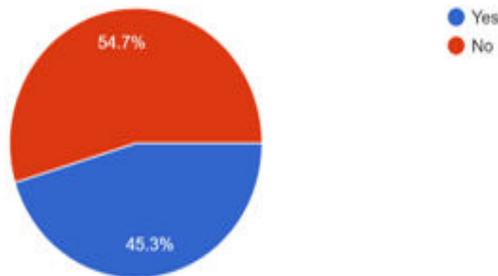
The major solid waste material of your house/job place
106 responses



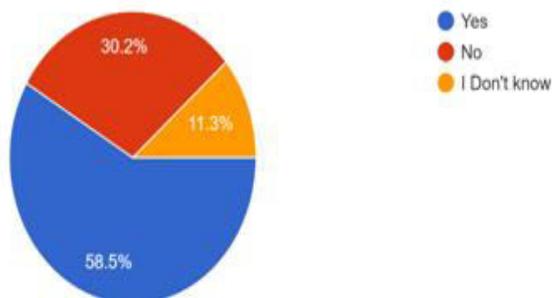
what type of waste disposal you adopt
106 responses



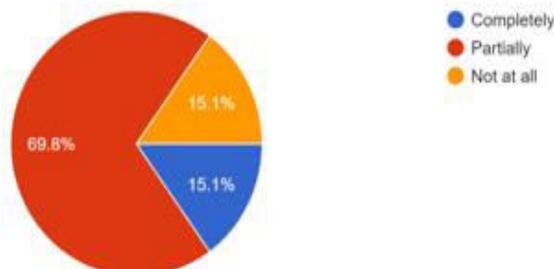
Do you allocate money for waste management?
106 responses



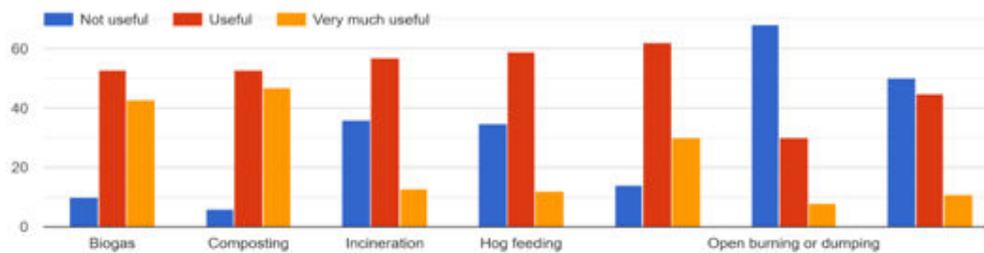
Do you get any services from Local Government authorities for proper waste disposal?
106 responses



Are you satisfied with the practice of your solid- waste management?
106 responses



How much the methods are useful for solid-waste management



DISCUSSION

The current study could analyse the partial satisfaction of people in their waste-disposal methods even though many of them are getting waste-disposal services. The food wastes and kitchen wastes also have prominent role as waste materials even though plastic is the topper in the list. It must be taken as a serious issue that there are many people suffer from lack of food especially, during this Covid-19 situation. There are almost equal percentage of people who spends and does not spend money for solid waste disposal. Eventhough local bodies and NGOs are providing services for proper waste-disposal it is not touching its full-fledged goals. Because, the survey shows that people who are disposing wastes by open dumping are aware of the bad effects and laws of open dumping. That means they are not having better management techniques. Eventhough most of the people are partially satisfied with their waste-management processes, there are equal percentage with complete satisfaction and without any satisfaction. The responsibility is invested to the hands of both people and authorities. The habit of using basket should be developed, special allocation of Government funds and the proper use of it, promotion of selling of reusable materials, compulsory settings of biogas plants in every village, encourage the creative waste material arts and promote its exportation, manufacturers have to collect the electronic wastes and take responsibility of it and organise solid-waste management project by students etc. are the ideas and suggestions from the participants.

CONCLUSION

As we always tell "Prevention is better than cure", the first solution for pollution-free world is nothing but the well-planned usage of materials. The second thing is the practice of rules and regulations and take the individual duties and responsibilities. The Solid Waste Management Rules, 2016 correctly focuses on each area of solid-waste and the rules regarding their management. The areas cover, waste generators, Duties of waste generators and authorities, time frame and review are specifically explained in it (Solid waste management rules, 2016). According to studies India generates more than 62 million tons of wastes per year. In that 5.6 million tonnes is plastic waste, 0.17 million tonnes are biomedical wastes, 7.9 million tonne is hazardous waste and 15 lakh tonne of e-waste. The country produces more than 1.50 lakh tonne of solid waste daily in which 15,000 tonne remains exposed (India Today Report, 2019). There are different types of classifications and one of them is degradable (paper, textiles, food waste, straw and yard waste), partially degradable (wood, disposable napkins and sludge) and non-degradable materials (leather, plastics, rubbers, metals, glass, ash from fuel burning like coal, briquettes or woods, dust and electronic waste) (Jha et al., 2011; Herat, 2009; Tchobanoglous et al., 1993). From the current study which is highly relevant it could conclude that there are many loop holes in the rules and regulations of waste-management and the duty invested on the citizens to be promised for future generations.

RECOMMENDATIONS

- 1) Government authorities should take efficient waste-disposal methods
- 2) The implementation of laws especially, in public places.
- 3) Educational institutions based awareness programmes and action plans.
- 5) Recycling waste pickers co-operatives have to be authorised

SUGGESTIONS

- 1) The study can be conducted offline mode with broad spectrum of people
- 2) Integrate the study with official data from local bodies.
- 3) Field visits can be conducted as a part of the study

LIMITATIONS OF THE STUDY

- 1) Online mode of survey due to pandemic situation.
- 2) Limitation to collect data from local bodies

IMPLICATIONS

- 1) The data can be used for planning advanced methods of waste management.
- 2) Develops a positive attitude towards healthy waste processing among both rural and urban people.
- 3) A democratic system can be developed focusing upon the regional problems of waste disposal.

REFERENCES

- The Management of Solid Waste and its Challenges in the India. (2019). 4(1), 16–26. <https://doi.org/10.22034/jhi.2020.105789>.
- Asefi, H., Lim, S., Maghrebi, M., & Shahparvari, S. (2019). Mathematical modelling and heuristic approaches to the location-routing problem of a cost-effective. *Annals of Operations Research*, 273(1), 75–110. <https://doi.org/10.1007/s10479-018-2912-1>
- Asefi, H., Shahparvari, S., & Chhetri, P. (2020). Advances in sustainable integrated solid waste management systems : lessons learned over the. *Journal of Environmental Planning and Management*, 63(13), 2287–2312. <https://doi.org/10.1080/09640568.2020.1714562>
- Emery, V., Jr, D., John, Y., & Hussain, S. (2020). Rethinking sustainability : a review of Liberia ’ s municipal solid waste management systems , status , and challenges. *Journal of Material Cycles and Waste Management*, 22(5), 1299–1317. <https://doi.org/10.1007/s10163-020-01046-x>
- Gupta, N., Yadav, K. K., & Kumar, V. (2015). ScienceDirect Invited article A review on current status of municipal solid waste management in India. *JES*, 37, 206–217. <https://doi.org/10.1016/j.jes.2015.01.034>
- Medeiros, G. A. D. E., Xocaira, M., & Mancini, S. D. (2021). Integrated Municipal And Solid Waste Management In The Amazon : addressing BARRIERS and challenges in using the DELPHI METHOD. 4(1), 49–61. <https://doi.org/10.2495/EI-V4-N1-49-61>
- Muhamad, P., & Gil, S. (n.d.). Solid waste management challenges for cities in developing countries.
- Nyarai, M. P., Willard, Z., Moses, M., & Ngenzile, M. (2016). Challenges of solid waste management in Zimbabwe : a case study of Sakubva high density suburb. 3(2), 142–155.
- Review, G., & Management, S. W. (n.d.). A Global Review of Solid Waste Management.
- Song, Q., Li, J., & Zeng, X. (2015). Minimizing the increasing solid waste through zero waste strategy. *Journal of Cleaner Production*, 104, 199–210. <https://doi.org/10.1016/j.jclepro.2014.08.027>

ROLE AND IMPACT OF MEDIA IN CONTEMPORARY WORLD

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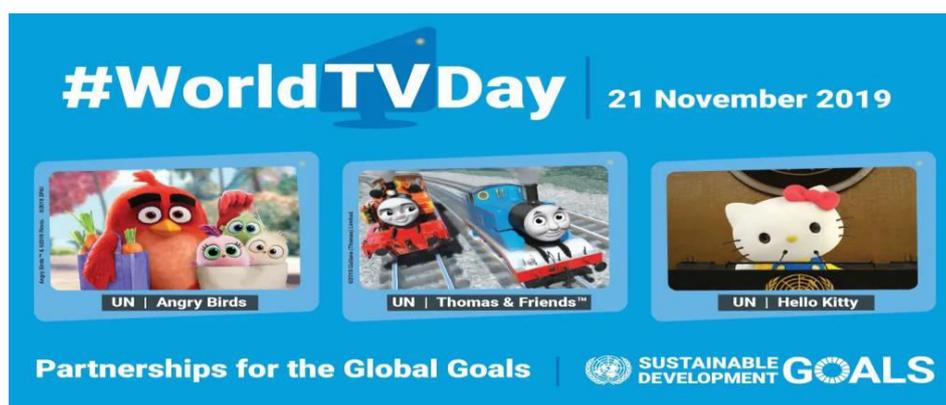
ABSTRACT

Sustainable development is "The development that meets the needs of the present without compromising the ability of future generations to meet their own needs" as defined by the Brundtland Report in 1987. The Sustainable Development Goals (SDG) also known as 17 goals were adopted by the UN (United Nations) by various world leaders on 25 September 2015. It has a multi-dimensional coverage of various social, political, cultural, economic issues including Education, Poverty, Hunger, Natural Resources and as many as prescribed. The media in accumulation all over the globe has been playing a very major role in explaining the importance and need of the sustainable development. The media which includes various types like Print, Online, Digital, Newspaper, Social, Television, Radio have been elaborately talking about the benefits advocated through the Sustainable development goals all over the world and specially its relevance in India.

Keywords: Poverty, Media, Sustainable Development Goals.

INTRODUCTION

The Polity of our country follows the Democratic System (People 's Rule) in which, Legislature, Executive and Judiciary has been acting as 3 strong pillars holding the Constitutional values and managing the entire country. Thomas Carlyle in his book, "Heroes, Hero-Worship & The Heroic in History" admitted that Reporters 's Gallery (Media) is to be propounded as the Fourth Estate (pillar) in a Democracy. The media is playing a very strong part in times mirroring the instances of any situation happening at local as well as international levels. In regards of the Sustainable development goals, like Zero hunger, Justice and Strong Institutions the media is acting an important role in displaying the untouched aspects of the society through various Documentaries, Debate show, Essays, Editorial, Magazines, Headlines. The media all over the horizon has played a powerful role for the awareness creation of the sustainable development goals. Even through the use of social media various campaigns for any societal purposes, humanitarian, donations, charity is easily done at the one instance of a single fingertip. People have also started to file applications and petitions for fulfillment for a particular cause for availing justice which not only helps country to strengthen the democratic values but also saves lot of time and labor. Angry Birds, Thomas & Friends and Hello kitty were the 3 popular animated cartoons used to spread awareness on climate change and other goals with the Hashtags like # All Aboard for the Global Goals and also #Hello Global Goals collaboration creating a positive impact on the small kids.



Source: <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.un.org%2Fsustainabledevelopment%2Fblog%2F2019%2F11%2Fworld-tv-day-2019%2F&psig=AOvVaw0qgYridBRNGAPPAglQ4lgT&ust=1652269003695000&source=images&cd=vfe&ved=0CAwQjRqFwoTCJJSou7r1PcCFQAAAAAdAAAAABAD>

ROLE OF MEDIA

In accordance of the 16th Sustainability development (SDG) which states about the concept of Justice and Strong Institutions, the media houses should fairly and fearlessly question the working of some apex Institutions in our country like the **PMO** (Prime Minister's Office), **Supreme Court**, **ED** (Enforcement Directorate), **CBI** (Central Board of Investigation) etc, which eventually will cater the need of the common man. As per the **Make in India** Movement, the varied forms of media can encourage any famous Industrialist or Entrepreneur to guide

the budding businessmen to convert our country as a Manufacturing Hub all over the world. The media can also promote any creative innovations happening at any sort of level which will connect the inventors to the people and encourage more such enthusiast while eventually contributing to the ninth SD goal.

Our country is a pluralistic nation by nature, therefore the regional content of such respective states like tv shows, newspapers, magazines, local Dialect art festivals, news channels can put more emphasis on the topic of sustainability, so that it creates a social awareness among the people who are living in more remote areas. Poverty and Hunger are some of the basic and prominent issues which are still hampering the world and especially our country is deeply downtrodden due to the ill effects of it. Few Digital Media houses like The Quint have made documented video series to highlight the issue, but many more need to step up and voice their opinions regarding the problems and provide practical solutions to alleviate the poverty. Specially the upcoming generations can be educated and sensitized by using the platform of digital media for more better understandability of the situation. Almost every News channel and Newspaper gives a rough estimate / prediction regarding the climatic status, but on the opposite side this rough estimate should be replaced by climatic models used by the Scientists. It not only will be helpful in correctly interpreting the daily changes in the climate or environment but also be beneficial in providing more compact and vigilant situation to deal with climatic problems like Flood, Famine, Heavy rain, Earthquakes.

Gender Equality is again a very sensitive topic and in terms of India's prospect there is a very wide blanket for more improvement. Many social media stars and other public figures are always trying to advocate about users for more participation of women at various levels. The Times of India is also providing awards to businesswomen for their excellence in business field during recent times. Social media platform like twitter have raised this issue of gender inequality and its problems via twitter hashtag #Genderinequality. Various Actors, Politicians, Public Celeb, have a huge number of youngsters following them. Twitter, Instagram, Snapchat, Hike, Facebook should be used in a right method following proper guidelines as a single click can create multiple impacts. Although there are various types of media which are still existing all over the world, but the medium of social media is very impactful and some glimpses of it were also seen on various socio-political issues. # Break the Taboo was used to speak on the issue of menstrual health of women and promote people to talk on this important thing more freely and openly. Hence the other can also support to such movements by broadcasting it. The Government of India (GOI) in joint ventures with different forms of media can directly propound the importance of sustainability development and its goals through a single union. The television media can also play an eminent part by hosting interviews or discussion panels were varied approaches, strategies, ideas, concepts, plans, layouts, ideologies can be communicated to general public as media in totality has a very lucid stance in nation building.

EVALUATION BY MEDIA

One of the most important facets of the media is Criticism and Accountability. The goals of sustainability development are to be achieved by 2030. Hence it is deemed duty of the Media to criticize the drawbacks, shortcomings, failures, misconception, loopholes as it can help the United Nations (UN) and all other stakeholders to achieve the remaining 152 sub-goals in a fast and efficient manner. It can be also done by other forms of media where they can voice out as it will make masses more aware and proactive towards the sustainable development goals. Many Writers and Authors can also write on this topic in their weekly articles, as it can provide them more space and liberty to express the criticism.

SUGGESTION

The media in togetherness can collectively implement the following suggestions for more participative role in the mission of Sustainability:

1. The regional reporters of different states which consists of TV, Radio, Newspaper, Hoardings can educate the people so that it can help them to understand the meaning of sustainability in their respective linguistic and regional languages.
2. The Executive (Government) and Media can host Interviews, Discussion panels, Brainstorming sessions, Conclave of professional qualified personnel or people of different backgrounds like Sports, Education, Politics, Sociology, Administration, Health, Environmentalist, Legal, Authors, Literalist and many others so they can give their trusted views as it will extensively covers the goals. The upcoming generation can take so much learning from this Informative series.
3. The Convention media which widely consists of Print Hoarding, Radio and Magazines can take more aggressive step in explaining the goals as there is also a section of people who still is watching it and they also tune through the pace of other Digital and social media.

4. A Delegated series on the core principle of the “**Sustainability Development**” can be telecasted which explains the basic and simple meaning of the concept. It should include a detailed discussion on the United Nations and India’s approach and covering a plethora of important topics like education, employment, poverty, hunger, life below the water, air pollution, environment, climate, consumption and production, clean energy, sanitation.
5. The assessment of Sustainability and its related activities should be done in a very fair and equal way since it can help the government to learn from its mistakes and achieve the goals in an efficient manner. It should be done in purview of international as well as national level as it can advocate people at a common value.
6. The Government of India (GOI) in a joint collaboration with the global governments can hold Physical Inspection or virtual meetings were those country who are having successful run in the implementation of sustainability development can elaborate their success values to those countries who are on a path of achieving it. A treaty or agreement can be formed were the media from all over the global world can show such events at free of cost/union.
7. Today’s world is full of technology and internet being used all the world. The social media influencers / Public stars can motivate the youth to work for the sustainable development.

CONCLUSION

At a Certain level, the UN has successfully achieved the targets set but still there is a larger space for improvement specially in under-developed countries. The regional media which contains of newspapers, tv channels of local language should give more emphasis to promote this topic. The OTT(Over the Top) and Visual media can play a heavy part in spreading the importance of sustainability development goals since most of the younger generation can learn through it very easily and retain positive things about it. It ultimately will fulfill the modus operandi of the sustainability development and the goals stated for future generation.

REFERENCE

<https://www.thequint.com/news/india/extreme-poverty-remained-low-due-to-food-transfers-during-covid-imf-on-india>

<https://www.youtube.com/watch?v=THJdKRgVjSo>

<https://www.thehindu.com/brandhub/thailands-approach-for-sustainable-development-and-building-back-better/article36471227.ece>

<https://www.telegraphindia.com/opinion/nations-have-failed-to-implement-sustainable-development-goals/cid/1709683>.

<https://sandrp.in/2021/11/20/wfd-2021-incidents-of-mass-fish-death-in-india/>

<https://shodhganga.inflibnet.ac.in/jspui/handle/10603/352426>

<https://twitter.com/search?q=%23genderinequality>

<https://www.bing.com/ck/a?!&&p=ef5a457095f220487c5425999d2e5a1acf9df269e9efa66858597f8ee5f80a51JmltdHM9MTY1MjUxMzE3NCZpZ3VpZD1jMGQ2MzJkYy00ZTdlLTQwYmYtYjY2OC00YWM4MGQzNzkwMmEmaW5zaWQ9NTM2NQ&ptn=3&fclid=22f3b83d-d357-11ec-b56d-2fbcb91d712a&u=a1aHR0cHM6Ly9zZGdpbmRpYWluZGV4Lm5pdGkuZ292LmluL3VyYmFuLw&ntb=1>

BOOKS

1. Bruntland Report, (Chapter 2: Towards Sustainable development, Page 37).
2. Heroes, Hero -Worship & The Heroic in History, (Page 152)
3. Thesis on Developing Indicators of Sustainability in Development authored by Joshi Laxmi.

A COMPARATIVE STUDY ON THE FINANCIAL ANALYSIS OF THE CO OPERATIVE BANKS OF BARDOLI TALUKA IN SURAT DISTRICT**¹Dr. Daneshwar R. Pandey and ²Govind Singh**¹Assistant Professor, S. S Agrawal College of Commerce and Management Navsari, Gujarat²Assistant Professor, Department of Commerce and Finance, Quantum University Roorkee, Uttarakhand**1. ABSTRACT**

Co-operative banks play an important role in the development of rural economies and serve as the backbone of India's financial system. These banks play an important role in achieving the goals of financial inclusion. These banks have an extensive branch network of and localized operational locations, engaging recovery in the development process, lending and deposit Mobilization in rural areas. Therefore, in this work, an attempt was made to investigate co-operative banks in the Surat area. Current dissertation only focuses on Short term & Medium term Local co-operative Bank works mainly in the district of Surat, a local economic state. Banks Business has brought wonders to the global economy.

Banks have Simple looking Method Receive deposits from savers and lend the same money to borrowers. Banks facilitate the flow of money for productive use and investment. This will cause the economy to skyrocket. Without banks, the savings in our homes would be wasted, entrepreneurs wouldn't be able to raise money and the average person dreaming of a new car or home wouldn't be able to buy a car or home. The government of India started the cooperative movement of India in 1904.

Keywords: Co-operative Bank, Bardoli Taluka, Surat, Comparative Analysis, Financial Analysis, Surat District

2. INTRODUCTION

India Cooperative Movement was conceived as a tool for socio-economic transformation those incapable construction owns their economy feet. Movement considers the origin of to be Co-operative Achievement Legislation 1904 enabled Co-operative Organization and was operated and managed as a co-operative of people in the Society. Bank is the backbone of India's financial system. In our country, the banking sector consists of widely planned commercial banks and credit unions. Country After the nationalization of banks, we experienced rapid changes in the banking sector 444 and credit unions complement commercial banks to deepen financial intermediation by large number small depositor and borrower under formal financial sector.

A credit union is a financial institution owned by its members, owners, and bank customers. Credit unions are often formed by individuals who belong to the same Local or Professional Community or and share the common interests of Cooperative banks typically provide members with a wide range of banking and financial services (loans, deposits, bank accounts, etc.).

Local co-operative banks and credit institutions play an important role in meeting the growing needs of India's regions. With an extensive branch network and a local business base, co-operative banks play a key role in the process of rural development, lending and deposit mobilization. It is Credit Union Bank and Commercial Bank 444 Supplement to respectively Other Recognized Both is important for financial inclusion. In Japan's credit union structure, the State-owned Credit Union (SCB) is the institution, which is the most important of the in this structure.

They control, regulate and oversee the entire co-operative movement in the affected states. These are also known as Apex Banks. Co-operative banks are small units organized in the co-operative sector and operate in both urban and suburban areas. These banks have traditionally focused on the community, locations and jobs locations groups and they are basically to small borrowers and Lend out companies. Union Cooperative Bank (UCB), does not officially define, but refers to major co-operative banks in cities and suburban areas.

3. OBJECTIVES OF THE STUDY

- (1) To know the lending practices of cooperative banks in Surat Districts
- (2) To measure and compare the effectiveness of Cooperative Banks of Surat Districts
- (3) To study the impact of size on the efficiency of the Cooperative Banks.
- (4) Proposal of appropriate measures to improve the performance of co-operative banks.
- (5) Understand different types of credits preferred by different customer groups.
- (6) Understand customer satisfaction from the bank's lending policy.
- (7) To study the short & medium term rural cooperative banking structure in Surat Districts

4. REVIEW OF THE LITERATURE

Bhadrapa Haralayya (2021) conducted a comparative study on the management of NPA by Urban Banking and ICICI Banking Corporation in Karnataka. Both Urban Banking's gross and net NPA showed an increasing trend, but that of ICICI Bank showed a decreasing trend during the survey period, which was higher at ICICI Bank than at ICICI Bank.

Sandip Mallick and Subhamoy Das (2020) investigated the relationship between capital adequacy ratio, management capacity and profitability in the proposal of a city co-operative bank operating in India. This survey is based on accounting and statistical analysis of 46 urban credit unions proposed over the last decade. The survey concluded that the Non Interest Income to Working Fund (NNIWF) has a positive impact on profitability. There is a positive correlation between management ability and profitability from the NNIWF perspective, and a negative correlation between management ability and deposits and operating costs per employee. The survey raises concerns about the efficiency of management teams in decision making. We encouraged management to improve their decision-making capabilities to maximize profitability.

Srivastava, D.A., Upadhyay, A. , & Saxena, N. (2020) explained that under an advanced Basel approach, UCB faces capital adequacy standards and, as a result, requires more capital to meet them. This paper examines the position of co-operatives based on a comparison of India's UCB financial performance and global scenarios. The sample size 50NSB was selected based on the availability of information using stratified random sampling. This sample represents 8% of the total number of Tier II UCBs and accounts for 32% of the total number of UCB assets. This study analyzed three key aspects of capital in terms of configuration, management, and repayment for the 2017-2019 fiscal years. Researchers have found that UCB's retention period is repayable or short, so life and quality are not guaranteed. The paper suggests that the Tide Capital Borrowing System should be abolished in order to secure consistent and high quality capital in accordance with the conditions set by the Reserve Bank of India. Researchers strongly recommended effective changes to the 2020 Banking Regulations Act to improve capital management by addressing the legal structure created for the issuance of various commodities.

Jayasree TO and K. Gangadharan (2017) conducted a survey on capital adequacy ratios and financial stability of Indian urban co-operative banks. The study emphasizes capital adequacy, as the security, stability and soundness of the banking system depends primarily on the level of capital adequacy. The study investigated the capital adequacy ratio since the establishment of Indian city credit unions and concluded that about 94% of Indian city credit unions meet the capital adequacy standards set by the RBI.

Rituparna Das (2015) discovered that liquidity and funding risk play a key role in the banking industry after the 2007-2008 financial crises. The paper seeks to investigate management performance to save UCB from the unfortunate scenario of liquidation / license cancellation. Eight UCB samples are selected based on the availability of financial indicators such as GNPA, IRR, and operating profit. Financial data is collected for two fiscal years. H. For 2012–13 and 13–14. Use principal component analysis to successfully validate the quantification of collaborative performance. The investigation concluded that there was a need for brainstorming by banking regulators regarding the continuity of the suffering UCB.

Nagarajapillai RAMU (2014) investigated UCB's problems and challenges by understanding the history of the emergence of co-operative movements up to the relevant decade up to 2014. He said important policies had been in place since 1992-93, the upcoming financial crisis after the legendary financial reforms of the Indian economy. This paper reviews the evolution of key policies introduced by regulatory agencies since 2005 after the task report was produced. The CAMELS rating was introduced by the RBI to classify UCB as a compound rating of A / B / C / D, but 96 countries follow the PEARLS monitoring system developed by the World Credit Union Council.

Jyoti Gupta and Suman Jain (2012) surveyed selected credit unions with the aim of investigating the efficiency associated with selected credit union lending practices in India. The survey also investigated credit preferences and customer satisfaction through an interview method. This study highlights the limits of credit unions in resource mobilization and fiscal recovery. Legal and administrative restrictions and regular government intervention will influence the performance of Indian credit unions. Primary data show that individual customers are the preferred type of credit for long-term loans / mortgages and are very pleased with the individual offers of the Cooperative Bank.

Narayana Gowd Talla, Anand Bethapudi, and Reddeppa Reddy G. (2011) analyzed the financial performance of the Dharma Balaam City Cooperative Bank, which operates in Andhra Pradesh. Researchers investigated aspects of a bank's financial performance, equity capital position, and liquidity. We conclude that the bank's

financial performance is satisfactory as financial parameters such as deposit mobilization, loans, working capital, reserves, own funds, gross income and expenditures have been on the rise during the study period. .. Other parameters, i. H. Membership, equity capital and liquidity positions were inherently stable and did not change significantly. Banks have shown various signs of gross profit and profit per share. This study proposes effective recovery and risk management practices and operational diversification to overcome operational inefficiencies.

5. RESEARCH METHODOLOGY

5.1 Type of Research

Descriptive research is used in this study in order to identify the lending practices of bank and determining customer's level of satisfaction.

5.2 Secondary Data

- Annual reports of the bank
- Manual of instructions on loans and advances
- Books
- Articles and Research Papers
- Internet

6. RESULT AND FINDINGS

Financial Position of Bardoli Co Operative Society

Year	2017-18	2018-19	2019-20	2020-21	2021-22
Share capital	67,65,350	68,34,000	68,44,350	68,43,325	68,35,775
Members	9826	10610	10708	10701	10689
Reserve fund	27,60,25,413	29,31,99,430	31,33,93,244	33,30,31,157	35,19,93,390
Saving Deposits	4,18,39,162	3,74,32,982	4,56,53,987	4,15,74,604	4,08,05,477
Current Deposits	2,31,28,050	1,47,35,304	1,31,90,875	97,37,963	77,53,113
Fixed Deposits	97,77,72,679	95,65,17,475	96,51,75,924	91,57,01,219	98,87,62,022
Other Deposits	5,45,14,150	6,01,07,536	6,21,73,307	6,85,91,880	7,39,43,138
Profit or loss	65,86,855	66,56,931	67,43,043	65,32,965	66,10,381
Operating fund	1,45,83,37,757	1,43,21,94,351	1,49,90,21,002	1,45,07,68,725	1,54,89,01,784
Audit class	A	A	A	A	Pending
Dividend	15 %	15 %	15 %	15 %	15 % proposed

Comparative Analysis of Bardoli Co Operative Society between Last two Years

Particular	31/3/2021	31/3/2022
Share capital	68,43,325	68,35,775
Reserve fund	33,30,31,157	35,19,93,390
Members Deposits	1,03,56,05,667	1,11,12,63,750
Members Loan	31,67,07,401	28,57,94,826
Working capital	1,45,07,68,725	1,54,89,01,784
Investment	1,06,85,00,100	1,19,50,00,100
Profit	65,32,965	66,10,381
NPA	0.32 %	1.00 %

Interest Rate on Deposits

Fixed saving Account	2.5 %
Saving Account	2.5 %
Fixed Deposits	
On 46 days	3.00 %
91 days	3.25 %
180 days	3.50 %
1 year	4.50 %
2 years	4.50 %

3 years	4.50 %
5 years or above	4.50 %
For senior citizen (1 year)	5.00 %

7. PROBLEMS FACED BY COOPERATIVE BANKS

(1) Co-operative financial institutions face serious problems that limit their ability to ensure a smooth flow of credit.

- Limited ability to mobilize resources.
- Low level recovery.
- High transaction costs.
- Long-term managed interest rate structure.

(2) Government for cooperative legislation and administration. Intervention has become an integral part of the day-to-day management of co-operative institutions. Some of the problem areas that arise from the applicability of co-operative law are:

- Intentional management of the co-operative by the government.
- Appointment of a board of directors by the government.
- Participation of directors appointed by the government.
- Secondment of government officials to co-operative institutions.

(3) State-owned co-operative banks are unable to formulate their respective policies regarding the investment of funds, including surplus funds, due to certain restrictions.

(4) RBI pre-approval is required to open a new branch office of SCB. SCB is obliged to submit a proposal to open a new branch office at RBI via NABARD, and if approved, that recommendation will prevail.

8. SUGGESTIONS

- Banks need to adopt the latest banking methods such as internet banking, credit cards, ATMs, etc.
- Banks need to plan the introduction of new systems in order to attract new customers and satisfy existing customers.
- Banks need to plan for branch expansion.
- Banks need to further improve their customer service.

9. LIMITATIONS

- This survey is based only on data from the last 3-4 years.
- Survey data is primarily based on a single bank.
- The majority of customers are bankers, so information sharing can be biased.
- The research period was limited

10. REFERENCES

- [1] Gupta, Jyoti; and Jain, Suman (2012), "A Study on Cooperative Banks in India with Special Reference to Lending Practices", International Journal of Scientific and Research Publications, Vol.2, Issue 10, October, pp.1-6.
- [2] Hooda, Vijay (2011), "State Cooperative Banks versus Scheduled Commercial Banks: A Comparison of Three Financial Ratios", International Journal of Computing and Business Research, Vol. 2, Issue 2, May, pp. 2-12.
- [3] Kanchu, Thirupathi (2012), "Performance Evaluation Of DCCBs In India-A Study", Asia Pacific Journal of Marketing and Management Review, Vol.1, No. 2, October, pp. 169-180. Padmini, E.V.K. (1997), Fund Management of District Central Cooperative Banks in Kerala,
- [4] Doctoral Thesis, Cochin University of Science and Technology, Cochin.
- [5] Shoor, Vandana (2005), Performance Appraisal of Cooperative Banking in Haryana, Doctoral Thesis, University Business School, Panjab University, Chandigarh

-
-
- [6] Austin, Granville (1999). Working a Democratic Constitution – A History of the Indian Experience. New Delhi: Oxford University Press. p. 215. ISBN 0-19-565610-5.
- [7] Barot, Himashu K. & Nilesh B. Gajjar (2013). Role and Growth of Financial Derivative in the Indian Capital Market. International Journal of Research in Humanities and Social Sciences Vol. 2, Issue: 6, June: 13. (IJRHS) ISSN: 2320-771X, Pp. 47- 51. www.raijmr.com Pp. 1-23.
- [8] Cooke, Charles Northcote (1863). The rise, progress, and present condition of banking in India. (Printed by P.M. Cranenburgh, Bengal Print. Co.), pp.177-200.
- [9] Desai, Dhaval S. (2013). Performance Evaluation of Indian Banking Analysis. International Journal of Research in Humanities and Social Sciences Vol. 1, Issue:6, August:13 (IJRHS) ISSN:2320-771X, Pp.30-36.www.raijmr.com
- [10] Sharma, Rajiv G. (2013). A Study of World Role and the World Bank's Plan of Action in India. International Journal of Research in Humanities and Social Sciences Vol. 1, Issue: 5, July:13 (IJRHS) ISSN:2320-771X, Pp. 47-51. www.raijmr.com

A THEORETICAL PERSPECTIVE ON EDUCATION'S ROLE IN POVERTY ALLEVIATION AS A SUSTAINABLE DEVELOPMENT GOAL

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ABSTRACT

Education is an important component of a society's/successful country's development. Providing education to the masses allows people to earn money and therefore escape poverty. Although it may not be difficult for impoverished parents to send their children to primary school, there are a large number of dropouts from secondary school due to the expenditures that they cannot afford. Thus, poor parents' inability to send their children to secondary and higher education leaves their children illiterate, limiting their capacity to better their position or quality of life, and ultimately affecting the country's economic progress.

Since its independence, India has implemented a variety of educational strategies. We just had the NEP-National Education Policy, but this study argues that these measures have only marginally helped the majority, and that they are more beneficial to the wealthy few. The researcher believes that education should be provided to all people in an equitable manner. For this, it is necessary to research and compare the current educational policies of other Indian states (Delhi), as well as other nations such as China and the United States.

Lack of access to education causes poverty to be passed down from generation to generation, and obtaining an education is one of the most important steps toward financial stability. To put it another way, education and poverty are inextricably intertwined.

According to the researcher, education is the sole resource accessible to developing countries for lifting people out of poverty, and that current education policy must be changed. Poor children should receive technical/vocational/professional education so that they can make a living and contribute to the country's economic prosperity. The researcher attempted to establish a link between no poverty and equitable education, and offered suggestions on how this may be accomplished.

Keywords: Education, Poverty, Independence

INTRODUCTION

The United Nations approved the Sustainable Development Goals (SDGs), also known as the Global Goals, in 2015 as a universal call to action to end poverty, safeguard the environment, and ensure that by 2030, everyone lives in peace and prosperity. The 17 SDGs are interconnected, recognising that actions in one area have an impact on outcomes in others and that development must strike a balance between social, economic, and environmental sustainability. Poverty eradication in all of its forms remains one of humanity's greatest challenges. Despite the fact that the number of people living in extreme poverty fell by more than half between 1990 and 2015, far too many individuals continue to struggle to meet even the most basic human requirements. Around 736 million people lived on less than \$1.90 per day in 2015, with many without food, decent drinking water, and sanitation. Rapid economic growth has lifted millions of people out of poverty in nations like China and India, but progress has been uneven.

Poverty, rather than terrorism, is a serious threat to humanity's survival in modern times, especially in emerging countries. Poverty does not imply a lack of resources. Violence against property and people results from a failure to maintain social integration and develop hope for poverty elimination. This has a negative influence on the economy and wellbeing of both the impoverished and the non-poor. However, education can help to ease some of the challenges that come with poverty. Food security and malnutrition are both improved by education. Citizens can cultivate and sell their own food if they are educated about agriculture and farming techniques. This provides both a source of money and a healthy way of life. Poverty is not only concerned with the low income of the individuals, rather it is a multi-dimensional problem that includes low access to opportunities for developing human capital and to education. (Tilak, 2000).

Education leads to growth, free-thinking citizens, and improved health and well-being. A solid education can open up a world of possibilities for a lifetime. Providing an education allows people in poverty to think about things other than when their next meal will arrive. Education, in every sense, is one of the most important aspects in attaining long-term economic growth through human capital investment.

The researcher chose this issue in order to highlight the link between poverty and education.

Poverty and education are two Sustainable Development Goals (SDGs).

Goal 1: of the Sustainable Development Goals (SDGs): No Poverty — End poverty in all of its forms worldwide.

Goal 4: of the Sustainable Development Goals (SDGs): Education for All — Ensures equitable, inclusive, and high-quality education for all by 2030, as well as the promotion of lifelong learning opportunities for all.

This paper aims to emphasise the equitability point, arguing that education should be provided to all, allowing people to escape poverty, particularly in emerging countries like India.

India's core charter, the Constitution, contains many provisions for education, as the framers realised that it is only education that can lift people out of poverty if it is supplied to all, equally. Education should be free for everybody, at least at the primary level, and afterwards chances for higher education should be made available based on the students' interests. These opportunities will be made available without regard to caste, creed, religion, gender, wealth, or poverty, implying that education will be accessible to all and equitable.

Provisions in the Indian Constitution Related to Education

According to Article 45 of the DPSP, the government must provide free and compulsory education to all children up to the age of 14 years within 10 years after the Constitution's inception.

Because this was not attained, the 86th Constitutional Amendment Act of 2002 enacted Article 21A, which made primary education a fundamental right rather than a directive concept. Article 45 was also changed to include provisions for early childhood care and education for children under the age of six.

The RTE Act was enacted by the government to enforce Article 21A. The SSA (Sarva Shiksha Abhiyan) was given a boost by this act. The SSA's goal is to achieve Universalization of Elementary Education (UEE) within a specific time frame.

RTE Act 2009: The Right of Children to Free and Compulsory Education (RTE) Act was enacted to implement this fundamental right.

Education Funding: The Draft Policy reaffirmed the government's commitment to investing 6% of GDP in education. In the following ten years, the proposed Policy aims to raise the government's investment in education from 10% to 20% of total government spending. Higher education will receive 5% of the funds, school education will receive 2%, and early childhood care and education would receive 1.4 percent.

By 2025, the proposed Policy aims to provide vocational education to up to 50% of overall enrolment in higher education institutions, up from the current level of enrolment of less than 10%.

SHORTCOMINGS OF PRESENT EDUCATION SYSTEM

1) The Rich-Poor Disparity can be seen at all Levels of Education

Poor pupils are predominantly concentrated in government schools at the school level. As a result, the poor quality of government schools disproportionately affects these children, perpetuating an illiteracy cycle. The issue is graver at the higher education level. The excessive tuition fees are required to be paid to professional course schools such as medical, engineering, and others force the impoverished to abandon their plans for higher education. The reservation system is no exception.

2) Inadequate Employable Skill Of Indian Youth:

Indian youths who have completed higher education are unemployed due to a lack of applicable industry-level skills. Because to India's long-standing neglect of primary and secondary education, access to high-quality basic education is limited. Without a solid basis in fundamental education, no skill development programme can thrive. However, education involves more than just learning to read and write.

3) Imparting Vocational Education:

Less than 5% of the workforce in the age group of 19-24 receives vocational education in India, in contrast to 52% in the USA, 75% in Germany and 96% in South Korea.

4) Municipal Schools are in Poor Shape, More Drops out Rates and there is Little Accountability for It.

5) Government Professional Colleges, Such as Engineering, Medical, and Management, are Given Significant Advantages in Terms of Facilities, Fee Subsidies, Location, and Reservations. Budget Allocation is More, But

Results are lower. Students are few in Numbers; But the Money Spent on Them is Excessive and Yields Little Results.

6) Private Universities are springing up all over the Place, Charging Exorbitant fees that Only a Select few can pay. Due to Their Incapacity to Match the Demand, Underprivileged Pupils who are brilliant and interested are Left out of the Race. Deteriorated Conditions of the Municipal Schools and no Accountability For It.

SUGGESTIONS AND RECOMMENDATIONS

The administration is focusing heavily on the universalization of education in the country. This can only be accomplished if every child in the country, regardless of their needs, abilities, or individual characteristics, has equal access to education. Almost everyone agrees that a strong education is critical to giving their children a better future and enhancing their own quality of life.

Despite the fact that the strategy calls for sending impoverished children to school and focusing on their education, it fails to address the system's disparities. It overlooks strategies for closing the gap between rich and poor children.

FEW SUGGESTIONS TO ALLEVIATE EDUCATIONAL POVERTY

- 1) Technical and vocational courses must be included into undergraduate education programmes at higher education institutions.
- 2) Municipal schools should be enhanced, and the Delhi model should be researched and applied to municipal schools across the country.
- 3) All schools should adhere to the same infrastructure and facility standards. (to study and compare the present education policies of other states of India e.g. Delhi as well other countries like China and USA)
- 4) In developing countries, the educational system must be designed in such a way that students can devote their brains to the growth of their country.
- 5) Improving the school system's overall planning, administration, and management.
- 6) Keep an eye on student dropout rates in schools and universities and find ways to educate them and their parents about the benefits of education. Make policies to provide such students with incentives such as food for their families, fee reductions, earn-and-learn opportunities, and a job guarantee upon completion of their study with good marks, among other things.
- 7) More technical and vocational training institutes should be established with the help or donations/ cash collected from persons who earned their degrees in government-run universities such as IIT, IIM, and NIT and are now earning large sums of money abroad. A bond be signed with such students in the above manner that will help their country to come out of the vicious circle of poverty. The government's treasury will be relieved of the burden.
- 8) Political commitment to education is important.

In *Redefining Education in the Developing World*, Marc J. Epstein and Kristi Yuthas contend that the very idea of what constitutes quality education for students in the developing world must change. Government agencies and other organizations, they say, should shift the focus from test scores and mastery of traditional curriculum to helping students develop knowledge and skills that are relevant to their lives and can lift them and their communities out of poverty. It's time, they write, "to seek out the interventions that lead to the greatest social and economic impact for the poor."

As the World Bank report puts it "Having knowledge is not the same as being able to apply it. Having a skill means having the ability to do something well. Having a skill requires knowledge, but having knowledge does not necessarily imply having skills. Knowing how a wind turbine works does not mean a person has the skill to fix one."

CONCLUSION

Education can eradicate poverty if given the chance; those in poverty can only benefit from education. People living in poverty that are unable to attain a formal education will have a much more difficult time escaping their living and working conditions. The right education can lift people from poverty and improve their lives financially, physically and mentally.

In India, a combination of discrimination, social attitudes, poverty, lack of political will, and poor quality of human and material resources leave children to being excluded from education. It is essential that societies

adapt their education systems to ensure that these children can get educated and have a better future. Children who have access to quality educational programs perform better and are successful in their lives. Access to education can improve the economic and financial lifestyle of citizens and determine the prospects of future generations, especially in developing countries.

However, achieving these goals is complicated. Policymakers have implemented various measures to increase access to education but the results are mixed.

REFERENCES

WEBSITES

<https://humanjourney.us/health-and-education-in-the-modern-world/education-in-the-developing-world/>

<https://www.kudroli.org/blogs/the-importance-of-education-in-developing-countries>

<https://www.imf.org/external/pubs/ft/issues/issues33/>

<https://borgenproject.org/how-does-education-affect-poverty/>

<https://www.globalcitizen.org/en/content/poverty-education-satistics-facts/>

[https://ucanapplym.s3.ap-south-](https://ucanapplym.s3.ap-south-1.amazonaws.com/RGU/notifications/Syllabus/UG%20HONS%20CBCS/EDUCATION.pdf)

[1.amazonaws.com/RGU/notifications/Syllabus/UG%20HONS%20CBCS/EDUCATION.pdf](https://ucanapplym.s3.ap-south-1.amazonaws.com/RGU/notifications/Syllabus/UG%20HONS%20CBCS/EDUCATION.pdf)

<https://www.clearias.com/education-in-india/>

<https://humanjourney.us/health-and-education-in-the-modern-world/education-in-the-developing-world/>

<https://www.norad.no/en/front/about-norad/news/role-of-education-in-ending-extreme-poverty--taking-a-global-lead/>

<https://theirworld.org/news/why-education-in-india-is-a-tool-to-tackle-poverty/>

<https://borgenproject.org/education-will-help-end-poverty/>

<https://files.eric.ed.gov/fulltext/EJ1286819.pdf>

BOOKS

Education Outcomes and Poverty in the South: A Reassessment, 1st Edition, By Christopher Colclough, July 17, 2014

Rethinking Education and Poverty, by William G. Tierney (Editor) ISBN-13: 978-1421417684 ISBN-10: 1421417685

Education and Poverty Hardcover – Import, 17 May 2019 by Alfredo Gaete (Editor), Viviana Gómez

ARTICLES

(Tilak, J.B.G. (2000). Education Poverty in India. National Institute of Educational Planning and Administration. Retrieved October 04, 2017 from http://www.nuepa.org/new/download/Publications/NUEPA_Occasional_Paper_No29_Education_Proverty_In_India_Jandhyala_B_G_Tilak_D-10742.pdf Editor)

Impact of Poverty on Education in India March 2018 Radhika Kapur, University of Delhi

A Study of Linkage between Education and Poverty in India, October 2011 · Indian Journal of Applied Research, Suraj Walia Ritu K Walia

HYBRID LEARNING: A MOVE TO SUSTAINABLE LEARNING POST- COVID-19

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ABSTRACT

Hybrid learning refers to the learning of any student in two ways and those modes are offline which consists of practical classroom methods and online which comprises virtual mode of learning. The main aim of the study is to understand the concept of hybrid learning, its advantages and challenges from the perspective of students as well as teachers. Also the goal is to provide suitable measures with that respect. The source of the data collection is through secondary sources such as websites and research articles. The conclusion drawn from the study is hybrid learning adopted in higher education post corona period proves to be a strong move towards sustainable learning.

Keywords: Hybrid learning, sustainable learning, Post Covid-19 period

INTRODUCTION

Covid-19 period was an unimaginable situation in the lifetime of people across the globe. So was its effect on the economy on various fields such as education, industry, hospitality, and many more. But the education field did not stop offering services during the difficult and crisis period. Although technology helped a lot in providing various solutions to the education sector during lockdown. The post Covid-19 period demanded offline methods of teaching all over again. But the situation was such that completely coming out of it suddenly and quickly from an online to offline method is very difficult especially for remote areas. Hence the concept of hybrid learning is involved under such a situation. Higher education in colleges under all universities could not adopt only offline methods unlike schools.

Hybrid learning here specifies the knowledge obtained through two modes which are virtual meetings and physical classrooms. Online classroom lectures are available with the help of Zoom meetings, google meet, WebEx meetings and many more educational apps depending upon the choice of the particular institution. The physical classroom involves classrooms of colleges. Self-learning is another concept for students which does not comprise this study of hybrid learning.

There are various challenges involved in hybrid mode of learning which is studied under the process of this research. Students who have been promoted to the next grade after studying through online mode, the traditional classroom become a new thing for them to start all over again their learning process. This is a case referred to second year students of colleges who performed well in online mode throughout the first year of their studies. However with the guidance from all the teachers, professors together helped to understand the learning from both the approaches. At the same time teachers also have to face both the situations giving their best and take all the classes of respective courses from both the approaches. Extra classes, examinations, evaluation and results together required a blended mode of learning for students as soon as the new normal began.

Sustainable learning can only succeed if the learners get full accessibility of subject materials, learning new tools and technical skills at low cost. The new normal has created a situation of hybrid learning which tries to encourage learners to learn better, faster and in an economical manner.

REVIEW OF LITERATURE

Watson J., Murin A., et al. (2012) states that the online learning is a subset of distance learning. Online learning is supported or aided by Internet that enables the web-based delivery models in a structured learning environment. In online learning environment teachers are separated from their students.

Hong and Miao (2009) conducted an experimental study Blended learning has influenced sixth grade students with different ability levels in an elementary school in Taiwan in terms of their achievements in environmental education. The outcomes of the experiment are: 1) no conspicuous interaction between teaching approaches and learning capacity is found in the post test on environmental education.; 2) subjects who accept blended learning demonstrate better achievements than the other group; 3) Students with higher learning capacity have higher achievements than the lower ones; 4) with different teaching approaches, students with lower learning capabilities show a remarkable difference in the post test on environmental education.

Rhode J. F., Spector J. M. et al. (2009) in their research found out that the learning environment for the online and traditional educational environment varies significantly. Self-Paced is a descriptor used to define the online learning. Self-paced learning offers much convenience to the learner to study at his free time, at his own pace

and his own location. This mode offers more flexibility to the learner than in the traditional learning environment.

Harris P. Connolly (2008) studied on Blended learning; overview and recommendations for successful implementation. The purpose of this paper is to identify key themes within the blended learning literature and to develop a series of practical recommendations to facilitate the successful adaptation and implementation of a Blended approach to learning delivery. Methodology adopted is literature review and informed a series of recommendation for organizations considering, adopting or Implementing Blended approaches to teaching and training. This study proves that blended learning has the potential to overcome several of the disadvantages of both traditional methods and e learning it is important to recognize its limitations.

Robinson (2004) conducted a study to understand faculty experience in designing and teaching Blended Learning course at Brigham Young University and identified faculty perceptions of three major benefits from the blended learning experiences such as more effective use of classroom time, increased flexibility in meeting time constraints of both students and professors and greater ability to meet the needs of individual learners. The quantitative phase revealed that there is a positive correlation between effectiveness of Blended learning and support from the University administrators.

OBJECTIVES OF THE STUDY

1. To understand the concept of hybrid learning.
2. To understand the challenges faced by the students as well as instructors.
3. To provide suitable solutions.

RESEARCH METHODOLOGY

The study is descriptive in nature and the source of data collection is from various websites, research articles, and newspapers, new updates.

THEORETICAL FRAMEWORK

Advantages of Hybrid Learning

1. Accessibility of learning to all the students.
2. Economical education as hybrid learning does not cause additional charges.
3. Learning technical and creative skills in higher education through online learning.
4. Pace of learning is faster as compared to simple traditional mode.

Challenges Faced by the Instructors

1. Extra Timing

The time devoted to each lecture is doubled in many courses where recordings of videos do not take place simultaneously for professors in colleges. The online lectures are conducted and then offline lectures who have actually come to the classroom. Some colleges prepare videos for the same subjects on the same topic. The working hours of professors have increased thereby.

2. Double Lecturing on the Same Topic

The online teaching via web meetings is taken for those who are unable to come physically whereas offline teaching is for those who are coming to the colleges. This became a dual teaching.

3. Difficulty in Attendance Records

The students attending online and offline may or may not vary so the attendance recording for the same student who attended both the lectures online as well as offline becomes difficult and time consuming. Chances of double recording of attendance are there. Those students who have attended online are recorded separately in some cases.

4. Salary Issues for work Overload

The higher education authority has not yet finalized any draft for increasing the pay for double teaching. This demotivates the current professors working in the colleges as there is no regulation framed for the salary issues yet after normalizing the traditional classrooms.

5. Assignments Checking

The assignments are assessed physically but the recording of each and every student's marks is still in online mode in some cases. Sending mails, WhatsApp messages played a pivotal role during Covid -19 period for

collecting and forwarding the information related to the assignments which still continues to be the same. The data of the results are maintained in Excel sheets as opposed to file keeping which earlier used to keep by the professors and staff. Hence network connectivity becomes a big issue again for assignments submission in practical courses

Challenges Faced by the Students

1. Difficulty in Attending Offline Classrooms from Remote Areas

As the new normal has brought the world back on foot with traditional methods, still many students have not yet come back from where they have been temporarily settling. This makes it impossible for them to attend the classrooms physically from faraway places. They could attend what online teaching is available.

2. Difficulty in Using Technology for Virtual Teaching

According to the research many students in higher education have faced difficulty in attending lectures online due to technical faults of internet connectivity that remains with them in the same manner even after the new normal has started.

3. Lack of Understanding the Concept of Hybrid Learning

There are some cases where students fail to analyze the mode of attending the learning classroom. And hence the education for those students becomes confusion. The submission of assignments, the date of submission, timetable created a lot of doubts.

4. Forgetfulness, Elimination of Good Writing Practice and Remembering Concepts

Since the lock down period, virtual learning was allowed by the government so only MCQ question papers were set. Therefore writing practice, learning and remembering concepts become too difficult when they are back in a physical classroom situation. The theory subjects now demanded writing lengthy answers which proved to be out of practice for various students. Also in case for maths and science students who have to solve the problem related questions are unable to do as they have a practice of MCQ theoretical answering.

5. Reduction in Academic Performance and Scores in the New Norm

During Covid- 19 period online mode helps students to score better in MCQ type questions. But when they are back in practical classrooms the scores are affected since the knowledge and learning of practical problems were eradicated for almost two years. These are those students from the IT, computer science, maths, economics department where learning is best collected through attending practical lectures which colleges failed to provide during the lockdown period. The challenge for such students is to move with the same space as other pass out students before Covid- 19 period in order to ensure good academic score. The results in some cases are pretty low for those same students who performed well in online exams.

CONCLUSION

It is concluded that hybrid learning adoption in higher education proves to be a strong move towards sustainable education. As it involves the technology use plus practical lectures in the learning process. The future of sustainable education relies on creativity, accessibility, knowledge, and academic skills altogether for youth to succeed in overall performance.

SUGGESTIONS

1. Higher education should conduct only offline classes for all the courses as it was before the Corona period in order to be back again with the same spirit of traditional environment.
2. In place of online classes, the colleges should develop Apps, text material, online material on each and every subject so that students' pace of learning could be increased.
3. Online tools with the help of ICT should be prepared to make online quizzes, test series and assignments so that it becomes easier for each and every student to simply install and practice for better learning.
4. Assessments and evaluation should be in a standardized online manner so that students and parents can view the results directly on their mobiles, mails.

REFERENCES

- [1] Akyol, Z., Garrison, D. R., & Ozden, M. Y. (2009). Online and blended communities of inquiry: Exploring the developmental and perceptual differences. *International Review of Research in Open and Distance Learning* (6), 65-83.
- [2] Allen, I. E., & Seaman, J. (2003). Sizing the opportunity: The quality and extent of online education in the United States, 2002 and 2003. Retrieved from <http://files.eric.ed.gov/fulltext/ED530060.pdf>.

-
-
- [3] Bolliger, D.U., & Wasilik, O. (2009). Factors influencing faculty satisfaction with online teaching and learning in higher education.
 - [4] "Blended Learning (Staker / Horn - May 2012)" (PDF). Retrieved 2013-10-24.
 - [5] "Blended Learning: A Disruptive Innovation". Knewton.
 - [6] Empey, L.T. (1956). 'Social class and occupational aspiration: a comparison of absolute and relative measurement', *American Sociological Review*, 21: 703-709.
 - [7] Morgan, H. (1997). *Cognitive styles and classroom learning*. Westport, CT: Praeger.
 - [8] Salmon, G. (2002) *E-tivities* Oxon, RoutledgeFalmer
 - [9] Strauss, Valerie (22 September 2012). Three fears about blended learning, *The Washington Post*.
 - [10] www.google.com
 - [11] www-07.ibm.com/services/pdf/blended_learning.pdf
 - [12] [www.knewton.com/blended learning](http://www.knewton.com/blended-learning)

THE EFFECT OF GENDER DISCRIMINATION ON FINANCIAL SELF-EFFICACY OF INDIAN WOMEN**Grishma Ashar****ABSTRACT**

The society we live in often prefers one gender over the other. This leads to the less preferred gender (women) getting less opportunities and resources. The harsh treatment subjected to women by society affects their self-efficacy at several levels. One such type of self-efficacy is financial self-efficacy. Financial self-efficacy determines the kind of investment and economic participation of an individual. This is important is for overall development of the country. Thus, the aim of this study is to study the effect of gender discrimination on financial self-efficacy in Indian women. The study had one independent variable, that is Gender Discrimination, which can be defined as unequal treatment of an individual based on their gender. It was measured using the Everyday Discrimination Scale, a 9 item, self-administered scale (Williams et. al, 1997). This is a six-point scale. The study had one dependent variable, that is Financial Self-efficacy, which can be defined as individual's belief about their capacity to successfully achieve their financial goals. The dependent variable was measured using the Financial Self-efficacy Scale, a 6 item, self-administered scale (Lown J. M, 2011). This is a four-point scale. The data was collected from 50 Indian women between the ages 21 - 29 years. 80% of the respondents were working, while 18% were students. The data collected was analyzed using median split, followed by t-test analysis ($t(41) = 0.17, p < 0.001$). The study proved that gender discrimination has a negative effect on financial self-efficacy. The results highlight the need for intervention targeting gender discrimination to increase financial self-efficacy. These interventions will aim at increasing levels of financial literacy, financial self-efficacy and healthy financial behaviors, while reducing gender discrimination, so as to empower women and develop the country's economy.

Keywords: Gender studies, Gender discrimination, financial self-efficacy, economic psychology and Indian women

INTRODUCTION

Gender is a socially constructed term, relating to the socially acceptable characteristics of the biological sexes. Gender discrimination is unequal treatment of an individual based on their gender. Due to patriarchal set up, women are often discriminated against. Gender discrimination is still very actively seen in Indian households, negatively affecting the social, economic and political aspects of a woman's life (Parvathi and thamizhelvi, 2020).

Gender discrimination seems to have a negative effect on the individual's mental and physical health. Research shows that women who have faced gender discrimination are more susceptible to depression, anxiety, PTSD and stress related issues (Hosang and Bhui, 2018). It also seems to negatively effect the self esteem and efficacy of women (Kim and Park, 2018).

Self-efficacy refers to an individual's belief about their own capacity to successfully perform certain tasks. Financial self-efficacy refers to an individual's belief about their capacity to successfully achieve their financial goals. It affects the financial behavior such as tendencies to take debts, make informed investments and savings (Ferrall et. al, 2016).

Financial self-efficacy mediates the relationship between financial attitude, financial literacy and financial inclusion (Mindra & Moya, 2017). It is also a mediator between objective financial knowledge, education saving, retirement saving and emergency saving; overall essential for promoting financial capacities (Rothwell et. al, 2016).

High financial self-efficacy not only helps an individual to have high standards, good investment satisfaction, but also positively impacts their overall life satisfaction (Hu et. al, 2021).

It seems that the way society treats the women affects their self-efficacy at several levels. Financial self-efficacy determines the kind of investment and economic participation of an individual. Thus, it is important is for overall development of the country. Therefore, it is essential to understand the effect of gender discrimination on financial efficacy of women, so as to determine potential intervention for the same.

AIM:

To study the effect of gender discrimination on financial self-efficacy in Indian women.

HYPOTHESIS

There will be a difference in the level of gender discrimination experienced, and the level of financial self-efficacy in Indian women.

METHOD**Procedure**

Gender Discrimination experienced and Financial Self-efficacy were assessed using the Everyday Discrimination Scale and Financial Self-efficacy Scale, which was administered through an online platform (google forms). The data was collected over a period of 3 days (6 to 8 May 2022). The participants were selected through purposive and snowball sampling. Confidentiality, privacy and anonymity was maintained.

Participants

A total of 50 participants (7 excluded for statistical reasons) participated in the survey. The inclusive criteria were: a) should be Indian women, b) should be between the age of 21 - 29 and residing in India. All participants voluntarily responded to the anonymous survey and indicated their informed consent within the survey. The procedures were clearly explained, and participants could interrupt or quit the survey at any point without explaining their reasons for doing so.

The final sample consisted of 50 cisgendered Indian women. The average age of the sample was 24.02 years, with the highest age being 28 and minimum being 21. 80% of the population was working (employed and self-employed) and 18% were studying. 52% of the sample were in a female dominated field/office. Those who were working worked in fields such as mental health, law, teaching and HR. About 60% felt their family/religion/society preferred the male sex. 74% of the sample had experienced gender discrimination in the form of the following: sexual abuse, opportunities to/at study and work, verbal and physical abuse, household responsibilities, restrictions on independence and decision making.

TOOLS**Demographic Sheet**

Basic information about the participant's age, sex, course was collected through the demographic form.

Everyday Discrimination Scale

This scale is a self-administered, 9-item questionnaire. It has a 6-point scale ranging from 1 (never) to 6 (almost every day). Higher scores indicated higher level of experienced gender discrimination. It has a reliability of 0.92.

Financial Self-Efficacy Scale

FSES is a self-administered, 6 item questionnaire that assesses the level of financial self-efficacy. It is a 4-point Likert scale ranging from 1 (exactly true) to 4 (not at all true). The alpha value is 0.93. Higher the total score, the higher the level of financial self-efficacy.

Statistical Analysis

A median split was performed to categorize gender discrimination into high and low levels. This was followed by a t-test analysis. To determine the characteristics of the population and levels gender discrimination and financial self-efficacy, mean and SD calculations were conducted.

RESULTS**Means and Standard Deviations**

In relations to the EDS, the mean total score was 21.54 and SD was 6.88. The minimum score recorded was 9 and the maximum score recorded was 39.

In relation to the FSES, the mean score recorded was 14.86 and the SD was 4.32. The minimum response recorded was 8 and maximum was 24. After division into two categories: high and low group, FSES mean for high category was $M = 14.26$ $SD = 4.19$ and for low category, $M = 15.95$ $SD = 3.73$.

Median Split and T-Test Analysis

A median split was performed on all the 50 participants, median = 20. 7 responses whose score was equal to the median were removed and statistical analysis was carried out on the rest of the 43 respondents. t-test calculation between the categories was $t(41) = 0.17$, $p < 0.001$, that is significant.

DISCUSSION

Though there are not many researches done on these variables together, the results of the current study are in line with the related research body. The study found that gender discrimination has an effect on the levels of

financial self-efficacy, thus fulfilling the aim of the study and proving its hypothesis that higher the level of gender discrimination experience, lower would be the financial self-efficacy.

The descriptive statistics show that there exist high levels of gender discrimination experience among the respondents. The high level was determined by comparing the mean of the independent variable ($X = 21.54$) with the median ($M = 20$) of the same. The sample has experienced gender discrimination in several forms such as restrictions on personal choice and independence, increased household responsibilities, less opportunities in academics and work, and abuse. This inequality is taught and reinforced by the society, religion and family. This experience is in line with the research done in 2019 which highlighted different ways in which Indian women are marginalized and subjected to inequality by Indian patriarchal society (Chelliah and Dominic, 2019). The descriptive statistics of the dependent variable shows that the level of financial self-efficacy seems to be higher in participants with lower gender discrimination experience ($X = 15.95$), than those with high gender discrimination experiences ($X = 14.26$).

The t test analysis ($t(41) = 0.17$, $p < 0.001$) of the study revealed that gender discrimination experienced has an effect on the level of financial self-efficacy; that is, higher the level of gender discrimination experienced, lower would be the level of financial self-efficacy. This is in line with previous studies, such as the study conducted by Kim which found that gender discrimination negatively impacts self-esteem and self-efficacy of women (Kim and Park, 2018).

This study has a few limitations such as the data was also collected through purposive and snowball sampling which is susceptible to error. Another limitation is that the data was collected from only 50 respondents residing mainly in urban cities of the country and thus generalization may be an issue. Lastly, the study only takes Indian women between age groups 21 – 29 years, future studies could represent a wider population from the community.

Despite the limitations, the study is important as it proves that the gender discrimination tends to reduce financial self-efficacy. The Government of India has taken a multidimensional approach to counter empower women and develop the country. This approach includes many schemes such as, beti padhao beti pachao, women working hostel, swadhar greh etc. which attempt to give opportunities and resources to women. However, the program does not exactly focus on the financial self-efficacy, literacy and gender inequality, which play an essential role in overall financial participation and development. These results show a need for an intervention that would help reduce gender discrimination, increase the levels of financial self-efficacy and literacy, thus improving not only the independence of women but also the country's economy and development.

REFERENCES

- Chelliah, S., & Dominic, K. D. (2019). Gender Discrimination in India: An Overview. *Language in India*, 105-116. <http://languageinindia.com/sep2019/mkuliterature2019/drchelliahanddominic.pdf>
- Farrell, L., Fry, T. R., & Risse, L. (2016). The significance of financial self-efficacy in explaining women's personal finance behaviour. *Journal of Economic Psychology*, 54, 85-99. <https://doi.org/10.1016/j.joep.2015.07.001>
- Hosang, G. M., & Bhui, K. (2018). Gender discrimination, victimisation and women's mental health. *The British Journal of Psychiatry*, 213(6), 682-684. <https://doi.org/10.1192/bjp.2018.244>
- Hu, J., Quan, L., Wu, Y., Zhu, J., Deng, M., Tang, S., & Zhang, W. (2021). Financial self-efficacy and general life satisfaction: The sequential mediating role of high standards tendency and investment satisfaction. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.545508>
- Kim, E., & Park, H. (2018). Perceived gender discrimination, belief in a just world, self-esteem, and depression in Korean working women: A moderated mediation model. *Women's Studies International Forum*, 69, 143-150. <https://doi.org/10.1016/j.wsif.2018.06.006>
- Mindra, R., & Moya, M. (2017). Financial self-efficacy: A mediator in advancing financial inclusion. *Equality, Diversity and Inclusion: An International Journal*, 36(2), 128-149. <https://doi.org/10.1108/edi-05-2016-0040>
- Parvathi, S., & Thamizhchelvi, P. (2020). Gender discrimination in India - a study. *Journal of Xi'an University of Architecture & Technology*, 8(4), 2901-2907. <https://www.xajzkjdx.cn/gallery/276-april2020.pdf>
- Rothwell, D. W., Khan, M. N., & Cherney, K. (2018). Building financial knowledge is not enough: Financial self-efficacy as a mediator in the financial capability of low-income families. *Financial Capability and Asset Building with Diverse Populations*, 12-32. <https://doi.org/10.4324/9781351202312-2>

GREEN BUILDING - BUILDING THE FUTURE WITH INTENTION**Mrs. Harshada S. Patwardhan**

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INTRODUCTION

GO GREEN Yes future generation must adopt this concept. It not only related with plantation, forest etc. but it is related with all sector i.e. Green economy, Green chemicals, Green physics etc. All these concepts are based on the concept of sustainability of earth. An Green Economy is based on reducing risks and ecological scarcities Karl Burkart defined a green economy as based on six main sectors it. renewable energy, green building, water management, transportation, waste management, land management. This paper is a small study of green building. Infrastructural development of any area is necessary as it helps to increase the local economy as well as sustainable development of that area. Construction of pre-planned buildings fetch major part of infrastructure. When we construct buildings, we utilize maximum natural resources. But basically natural resources are scares in nature. If we use them unconditionally in near future, there is a possibility to lose them, which is harmful for society, economy and environment. To avoid this, 'Green Building' concept can be used. Green Building denotes making use of material and resources which are environmental friendly. Green building technique ensures that waste is minimized at every stage during the construction and operation of building

Objectives

The objective of the present study is to make aware people about the concept Green Building and bringing the concept practically to save and conserve the natural resources.

Data Source

The present work is conceptual in nature and based on secondary data or information which made available in the form of journal, websites, reports, personal experience

Keywords: Green building, Natural resources, Nature

CONCEPT OF GREEN BUILDING

Green building refers to a structure and using process that is environmentally responsible and resource-efficient through a building's life-cycle i.e. from sitting to design, construction, operation, maintenance, renovation, and demolition. In general sense it means that one whose construction and lifetime operation assure the healthiest possible environment while representing the most efficient and ease disruptive use of land, water, energy and resources.

Concept of Green Building with Reference to Residential Infrastructure in Rurai Ratnagiri

As a project is based on Konkan region, We may say that in old days there was no conceptual clarification about Green Building idea but mostly and material such as earth, leaves of trees, wooden, clay bricks in roof tiles was used for construction and operation of homes and human buildings were not as huge as today's. As such they can avail natural : rain water etc. Due to industrialization the idea s of living and status as changed. Now a days it seems that the only concentration is on earning more and more money through construction of concrete buildings with artificial material a technology. This leads to unconditional use of natural resources like energy, water, light, trees etc. Natural resources are limited. Such unconditional use may, in future extinguish these resources. We should make a way to maximize our natural resources and also help our mother earth to get relief from pollution and global warning.

The growth and development of our communities has a large impact on our natural environment. He manufacturing, design, construction and operations of buildings in which we live or use for commercial purpose are largely response for the consumption of many of our natural resources like electricity, las carbon dioxide, water energy etc. There is a need to re-shift towards building or green building. Green Building is a practice of creating struct using processes that are environmentally responsible and resource throughout a building's life cycle from sitting to design, construction that renovation and destruction. This is also known as sustainable or high building. These are designed to reduce the overall impact of the build on human health and natural environment by -

- Efficiently using energy, water and other resources.
- Protecting occupant health and improving employee productivity.
- Reducing waste, pollution and environmental degradation

Why you should go for Green Building Design?

Constructions of buildings consume a lot of money, consume a lot of energy. And they also pollute, displace, a mean it's pretty obvious when you pave over farmland all you've displaced some sort of habitat

Green building designs are taking over today's world of World of home *design* with the topic of environmental awareness topping most headlines in the media. The main aim of green building designs is to encourage environmental conservation through preventing or totally eradicating depletion of crucial environmental resources like water.

The idea is geared towards preventing degradation of the environment and creating a conducive surrounding while still improving the health of the occupants and enhancing their standards of living. The benefits of green designs are discussed below.

1. **Low Operating and Maintenance Costs:** Energy Costs have risen and are Continually rising at a very high rate. It is therefore important to consider energy efficient building designs. Green housing designs have come to the aid of people who need economically manageable buildings.
2. **Boosts Employee Efficiency:** People working in comfortable environments tend to be more productive than those who are struggling with environmental discomforts. The quality of air in green building designs offer comfort in corporate buildings which increases employee productivity and this means more profits for organizations.
3. **Conservation of Important Environmental Resources:** Use of water recycling and collection methods, which are highly recommended in green building designs, encourages water conservation. This is very crucial for both the environment and the people who live and work in such buildings.
4. **Reduction of Waste and More Environmental Friendly Waste Disposal Methods:** Since resources are limited, the use of natural resources in green building designs encourages recycling and reusing inputs in construction. This reduces waste products from the whole building process. Green building technology also emphasizes safer and environmentally friendly methods of waste disposal. This ensures a clean and safe environment.
5. **Enhances Internal Environmental Conditions:** Adequate Air Circulation, Lighting and insulation are factors that can help in reduction of cases of respiratory problems, headaches, allergies, and nausea. Green designs provide for adequate ventilation, insulation, and lighting for buildings. This helps in health improvement of people who live in and work in such buildings.
6. **The Make for Great Architectural Talking Points:** In the 21st century buildings adapting this design are the talk of the media in terms of housing. With their posh look and their unique shape they really are a sight to behold. This will have investors, or future land owners, anxious to be seen as in tune with this trend.
7. They Aren't Very *Expensive* to Construction as it is designed by using natural or recycled materials such as glass or wool bricks they can save on the building budget.
8. Once building constructed one can either use it for corporate or residential use. , so it can be used for different purpose.
9. As the building all the local naturally resources raw material is used for construction. last long time they rarely affected by extreme changes in the environment .

Technical and Material Features of Green Building

- Use of solar energy. It is a heart of sustainable building. Green building techniques with active solar system solar tiles results in Zero Energy "home.
- Recycling of waste water can be used to watering the garden.
- Use of wool bricks or stone bricks are main material of green building. The polymer was an alginate, which occurs naturally in the cell walls of seaweed. Mixed together, the three substances resulted in bricks that were reportedly 37% stronger than regular unfired bricks.
- Ceiling of the roof plays an vital role in the light quality in room. So ceiling designed should be wisely designed by using Mangalore Tiles, which are the oldest and the most popular tiles favourite since ages. Many a magical structures can be created by using this versatile Mangalore roof tile with channels and angles by fabricating in steel. These tiles are made up of laterite clay. Which is totally eco friendly and cheap

- Doors and windows should be of wooden , it can structured in such a way that will help to replace, air in any space to provide high indoor air quality which involves temperature control, oxygen replenishment and removal of moisture, odours, smoke, heat , dust, airborne bacteria, and carbon dioxide.

Key Strategies while Going for Green Building

If we make efficient use of space for existing buildings, then we can go for utilization of space for gardens to go green. Design and renovate buildings to maximize future flexibility by expanding useful life, for cost effectiveness in future. Identify and protect valuable green fields and wetland sights from development for healthy environment and maintain balance between nature and society. Establishment of water budget for the building and implement design that will minimize the use of fresh water by using low plumbing fixtures etc. and developing underground water tanks to restore the rain water. Evaluate each site of building in order to optimize the use of solar energy, natural day lighting and ventilation.

Select materials that can be easily dismantled and reused or recycled at the end of their useful life, this will reduced the cost of waste. Identify and improve a system and products which will promote healthy indoor air quality (IAQ).

BENEFITS OF GREEN BUILDING

Economic Benefits

- Reduces operating costs.
- Improve occupant productivity.
- Optimize life cycle economic performance.
- Enhance asset value.

Social Benefits

- Enhance occupant's health and comfort.
- Improves indoor air quality.
- Improve overall quality of life.

Environmental Benefits

- Improves water and air quality.
- Conserve and restore natural resources.
- Enhances and protects biodiversity and ecosystems.

REFERENCES

1. www.wncgbc.org/about/importance-of-green-building
2. wikipedia.org/wiki/Green_buildin
3. www.calrecycle.ca.gov/greenbuilding/materials
4. en.wikipedia.org/wiki/Green_building_in_India
5. Konkan Darshan 2011- Mr. Jaydeep Gavkhadkar.
6. Tammy Thompson Energy Production and Policy Fall 2005
7. Green building.com
8. www.certainteed.com/Building_Responsibly/Products/Roofin

ROLE OF YOUTH TOWARDS ACHIEVING SUSTAINABLE DEVELOPMENT GOALS

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ABSTRACT

Sustainable development goal is the most important element for the development of each country. Sustainable Development Goals 2030 was given by United Nations with the hope that all nations together will be able to achieve it joining together as one Global nation. That is the reason it is also called as Global Goals. The dangers and damage are witness by the whole world. Sudden climate changes, unemployment, poverty, mitigation has become serious issue across the global.

Youth can act as a catalyst agent in improving and achieving the Sustainable Development Goals 2030. Youth are young minds with new ideas, positive attitude, critical thinking can contribute towards the saving the global. There are different ways and means through which the youth can be helping hand toward achieving the targets in a very collaborative, effective and long run solutions to the current and upcoming issues faced by all countries. It becomes the responsibility of Young generation to take the lead and become be mediator and saviour to make a better place to live a quality life.

The concept of sustainable development can be interpreted in many ways, manners, and forms but at its core is an approach to development that looks to balance different, and often competing, needs against an awareness of the environmental, social and economic limitations we face as a society. We are already witnessing the damage from large-scale financial crises caused by irresponsible banking, to changes in global climate resulting from our dependence on fossil fuel-based energy sources. The longer we pursue unsustainable development, the more frequent and severe its consequences are likely to become, which is why we need to act now. Living within our environmental limits is one of the central principles of sustainable development. One implication of not doing so is climate change.

But the focus of sustainable development is far broader than just the environment. It's also about ensuring a strong, healthy, and just society. This means meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion, and inclusion, and creating equal opportunity.

"Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs."

Sustainable development is the overarching paradigm of the United Nations. The concept of sustainable development was described by the 1987 Brundtland Commission Report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

There are four dimensions to sustainable development – society, environment, culture and economy – which are tangled, not separate. Sustainability is a paradigm for thinking about the future in which environmental, societal and economic considerations are balanced in the pursuit of an improved quality of life. For example, a prosperous society relies on a healthy environment to provide food and resources, safe drinking water and clean air for its citizens.

Many a times we get confused between sustainable development and sustainability. Sustainability is often thought of as a long-term goal (i.e. a more sustainable world), while sustainable development refers to the many processes and pathways to achieve it (e.g. sustainable agriculture and forestry, sustainable production and consumption, good government, research and technology transfer, education and training, etc.).

In 2015, 195 nations agreed with the United Nation that they can change the world for the better. This will be accomplished by bringing together their respective governments, businesses, media, institutions of higher education, and local NGOs to improve the lives of the people in their country by the year 2030.

The 17 sustainable development goals (SDGs) to transform our world:

- 1: No Poverty
- 2: Zero Hunger
- 3: Good Health and Well-being
- 4: Quality Education

-
- 5: Gender Equality
 - 6: Clean Water and Sanitation
 - 7: Affordable and Clean Energy
 - 8: Decent Work and Economic Growth
 - 9: Industry, Innovation and Infrastructure
 - 10: Reduced Inequality
 - 11: Sustainable Cities and Communities
 - 12: Responsible Consumption and Production
 - 13: Climate Action
 - 14: Life Below Water
 - 16: Peace and Justice Strong Institutions
 - 17: Partnerships to achieve the Goal

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.

The population of the world is projected to increase by 98,830,797 people in 2022 and reach 8,046,949,318 in the end of the year. The natural increase is expected to be positive, as the number of births will exceed the number of deaths by 98,415,064.

Today, there are 1.8 billion people between the ages of 10-24—they are the largest generation of youth in history. Close to 90 per cent of them live in developing countries. Their numbers are expected to grow—between 2015 and 2030 alone, about 1.9 billion young people are projected to turn 15 years old.. Connected to each other like never, young people want to and already contribute to the resilience of their communities, proposing innovative solutions, driving social progress and inspiring political change. They are also agents of change, mobilizing to advance the Sustainable Development Goals to improve the lives of people and the health of the planet.

One of the Key aspects in order to achieve the Sustainable Development Goals (SDG) is certainly to provide youth with the right competences and skills to reach them.

The World Youth Report on “Youth and the 2030 Agenda for Sustainable Development”, prepared by the United Nations Department of Economic and Social Affairs (UN DESA), examines the mutually supportive roles of the new agenda and current youth development efforts

Far from being mere beneficiaries of the 2030 Agenda, young people have been active architects in its development and continue to be engaged in the frameworks and processes that support its implementation, follow-up and review. The adoption of the 2030 Agenda represented the culmination of an extensive three-year process involving Member States and civil society, including youth organizations, in the development of specific goals and targets—and marked the beginning of a 15-year journey to achieve sustainable development by 2030.

The active engagement of youth in sustainable development efforts is central to achieving sustainable, inclusive, and stable societies by the target date, and to averting the worst threats and challenges to sustainable development, including the impacts of climate change, unemployment, poverty, gender inequality, conflict, and migration. While all the Sustainable Development Goals are critical to youth development.

The best channel, medium or role that can be played towards achieving Sustainable development goals is our Youth. Role of youth --they are catalyst agents for the peace and security .Their role in the workforce and economic development of our nation represent at any given moment, one -third of the workforce. Youth are fearless, discipline, enthusiastic, full of zeal, ambitious, critical thinker. They are an important asset of the country and can change the world the better to have quality of life not only for the existing generation but all coming generation The young minds are fresh, naive they have potential and strength. Youth is also important in the social change - future leaders, the more we invest in them we can surely witness a notable change and drivers of societal transformation especially in the diverse development

How to get Youth involved towards achieving Sustainable Development Goals 2030

Youth are the torchbearers of the 2030 Agenda – young people all over the world are contributing to achieving the Sustainable Development Goals. Here are a few easy ways youth can get involved:

1. Get Involved in a Local NGO

Participating in a local NGO is a worthwhile way of supporting sustainable development efforts. When they work with this local NGOs, they would not only learn but they would also work with them hand in hand and would contribute towards the development of these NGOs as well as contributing towards development of those poor and needy by guiding them for their development.

2. Get Engaged in Local Politics

The engagement of young people in local politics is crucial to raising awareness of youth-related issues and demanding change. Engaging the youth in the local politics shall be important as they will be very close and near to the problems and issues challenges which are face as well as they would contribute towards the various activities which are run by this local politics. Political commitment and adequate resources may help young people to have the potential and can make the most effective transformation of this world into a better place for all

3. Join Youth4Peace to Help Promote and Maintain International Peace and Security

Youth4Peace is an UN-led initiative that supports young people's participation in peacebuilding. It recognizes that young people play active roles as agents of positive and constructive change and helps them achieve this.

4. Seminars and Conferences

organising various functions and seminars to make them aware of organising various seminars and function is the prime responsibility of the organization and the educational institutions where the youth is right now so that we can make them aware of what is sustainable development goals and how their role will be contributing towards the development of the nation and to the world as a whole

5. Engaging in Field Activities

Engaging youth in the day to day activities of the people around them. They could understand what is happening in and around their surrounding and probably they would come out with certain solutions.

When this youth will face the issues or when they are going to examine themselves the issues they will understand the problems and may come out with the recommendation they can work in Group activities well contribute in different minds in the same direction will result in a positive attitude.

6. Projects and Exhibition

By giving the youth a free mind and giving them an open space to develop and think about how and why and what the different Ways and Means they can contribute towards sustainable development goals. Each and every initiative taken by them will help the people to come out with various brainstorming sessions they would make think effortlessly by contributing not only to their projects, but they would also come out with certain solution to the problems of the near future.

7. Talk Shows

Various eminent personalities and the people involved in contribution towards the sustainable developments can be called and made to speak to the youth and exchange their ideas engage them in various activities and how will they contribute or what kind of mindset they can build in this youth shall help them to reach the goals towards sustainable development.

8. Forming Committee

Different line of committees can be formed so that they can address a problem and issues. They can even pilot the highest problems, provide opportunities for leadership training and employment in local communities and they can divide groups for various aspects of education, energy, skills economic reforms and good governance. Contributing towards this potential as an active citizen for peace and development they should empower themselves for a good leadership as well as they can set their own agendas have taken come up with encouraging more active citizenship. For this kind of activeness among the people contributes towards the achievement of sustainable development goals also which is referred to as Global goals and the agenda 2030 and activating this youth can happen in different stages.

9. Awareness Programme

A lot of public awareness program can be organised, managed, and developed by the youth itself to get the key message to be passed on to the public at large and the target audience here needs to be the youth, adult and

children. We need to encourage them to act in preventing and developing and contributing towards sustainable development goals. Public awareness is important to increase enthusiasm and support can turn the local knowledge and resources to begin. Event raising of funds can be organised, during these activities a lot of money can be collected for community development. These events are generally undertaken by the government organization and non-government organization, but youth must come as the helping hand and the combination of this youth communication strategies can be targeted to the audience awareness raising is often considered to be important at the stage where we are involving more of our youth here because there is more of acceptance and they are also a change mediator. Moreover, they can become self-reliance.

10. Entertainment Programme

The objective for any entertainment programs to create an obvious change in behaviour the strategy adopted by the entertainment program is primarily motivational rather than information and this can act as a catalyst in initiating interpersonal communication among the peers. Audience can become a positive factor they can initiate any kind of supporting change. Entertainment through various programs like folk dances, street plays, dramatization of any act, social cause of these kind of activities will not only help will not only contribute to the entertainment of the people certain message can be passed to the people regarding the various activities which is conducted by these youth and how the role of youth is so important for sustainable development goals even while contributing towards the social learning we are presenting them the negative and positive aspects trying to build the present the consequences of their actions as an individual, community and society at large.

When we empower young people by giving them guidance, providing better education, valuable opportunities, giving access to the resources they can act as collaborator, change agent, critical thinker, innovator with community work to achieve sustainable development goals. Engaging young people in development programs has a very interesting impact on their personal development, their empowerment, their ability to connect with more people in their community and globally. Young people have the power to achieve the most effective transformation of the world into a better place for all with political commitment and proper resources.

REFERENCE

- <https://www.un.org/development/desa/youth/world-youth-report/wyr2018.html>
- https://www.shaalaa.com/question-bank-solutions/why-there-need-public-awareness-environmental-education-need-public-awareness-environmental-education_590
- <https://www.sd-commission.org.uk/pages/what-is-sustainable-development.html>
- https://worldtop20.org/global-movement? gclid= Cj0KC QjwspK UBhCv ARIsA B2IYus rhnU7F ibFlxWOtg0 bYXcUul6djHMyvwoNM1yQgZOh2voDB9_2i6YaAIOEEALw_wcB
- <https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd#:~:text=Sustainable development is the overarching, to meet their own needs. E2 80 9D>

EXPLORING THE THEORETICAL AND PRACTICAL CHALLENGES IN THE IMPLEMENTATION OF EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD): SOME REFLECTION FROM THE LITERATURE**Mrs. Kalpana Priya¹ and Dr. Jyoti Verma²**¹Research Scholar and ²Assistant Professor, Department of Education, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur – 495009**ABSTRACT**

This paper aims to explore the challenges faced in the implementation of the conceptual framework and diversity of practice of education for sustainable development (ESD). The methodology opted for the paper was a general review approach, covering literature that provides an overview of the concepts and practices of ESD, as well as program evaluation studies. Additionally, a systematic review of the literature was conducted to find out the obstacles and challenges in the path of implementation of ESD in the field of Education. The study found that there are wide and inconclusive debates about the aims of ESD based on the critique of sustainable development discourse in general and instrumentalism embedded in ESD in particular. It was also found that there is a strong link between ESD implementation and student performance. The study suggests that there should be ESD awareness programme and professional training among teachers is required to ensure ESD policy implementation.

Keywords: Education for Sustainable Development (ESD), Implementation Challenges for ESD, and Theoretical and Practical Challenges for the Implementation of ESD.

INTRODUCTION**Threshold**

“We hold the future in our hands. Together, we must ensure that our grandchildren will not have to ask why we failed to do the right thing, and let them suffer the consequences”

- *UN Secretary –General Ban Ki –Moon, 2007*

Education has always been the change agent in the world. What happens in the classrooms is reflected in society. It is not vice-versa. The difference, the intervention that we wish to make has to start from the educational ring itself. So, here we are to talk about SDGs and education (Sharma 2022). Sustainable development is the overarching paradigm of the united nations UNESCO(2016,p 68) is studying the extent to which ESD is mainstreamed in (i) national education policy; (ii) curricula; (iii) teacher education; (iv) student assessments; and (v) countries where “sustainable development”, “global understanding” or an “international understanding” policy, plan and/or law is in place. This reporting could constitute a baseline. The General Assembly reaffirms education for sustainable development as an integral element of the Sustainable Development Goal on quality education and a key enabler of all the other Sustainable Development Goals(UN General Assembly Resolution, 2017).

ESD is a lifelong learning process and an integral part of quality education that enhances cognitive, social and emotional, and behavioural dimensions of learning. It is holistic and transformational and encompasses learning content and outcomes, pedagogy and the learning environment itself (UNESCO 2020, p.8). A recent UNESCO study that reviewed policy documents of 10 countries shows that ESD is mostly associated with the teaching of scientific knowledge on the environment. This is not enough to bring the transformative power of education to its full force (UNESCO,2020,p.9). Further, the UNESCO (2021) reports indicate that 50 pilot countries are preparing their country initiative to achieve the target of ESD for the year 2030.

What is ESD?

The concept of Education for sustainable development was born from the need for education to address the growing and changing challenges of the planet and with the theme of “No one left behind”. Education must be strengthened in all agendas, programs, and activities that promote sustainable development. Education for sustainable development can be understood as education that allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. It encourages society for all. It aims to empower future generations and meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development.

Brief History of Education for Sustainable Development (ESD)

In the year 1992 earth summit proposed the implementation of 40 chapter plan called as Agenda21 . In 2002 Johannesburg summit decade of education for sustainable development (DESD) was launched till 2014. At Rio+20 in 2012 , 192 government head of state attended the conference and declared their commitment towards a sustainable future. Global action plan (GAP) in 2014 took official follow-up of DESD and further planned for scaling up the actions for ESD. At 2015 , UN summit, 2030 agenda for sustainable development was launched.

The Aim and Objective of the Paper

This paper aims to explore the challenges faced in the implementation of the conceptual framework and diversity of practice of education for sustainable development (ESD) and their implementation challenges. It was also tried to identify some suggestive strategies to overcome these obstacles and challenges.

Challenges of Implementation of ESD

Several reports indicate that a strong link between ESD implementation and student performance cannot be considered causal due to lack of evidence. Yet, researchers in 14 countries (Australia, Belgium, Canada, China, England, Estonia, Finland, Germany, Japan, Mongolia, Peru, Scotland, Sweden, and the Netherlands) report that students of ESD schools develop stronger critical thinking skills, deeper understanding of the topics under study and better research skills were findings of Laurie et al. (2016). Provide professional development for teachers to ensure ESD policy implementation. Walshe (2008) found that teachers have difficulty in helping students to acquire a correct understanding of the SD concept. However, teachers get little support to teach such a difficult concept. Birdsall (2013) suggested that there is a need for the development of teachers' understandings of sustainability so that they can plan and teach effective sustainability education programmes. Borg et al.(2012) highlight the fact that many upper secondary school teachers in Sweden have a positive attitude and are aware that SD issues are central to their discipline and central to their particular teaching interests also identified several barriers to the implementation of ESD. In an article Waltner (2018) showed a path toward ESD monitoring in TT(teacher training) to clarify the needs and achievements of ESD implementation in the field of continuing education of teachers. However, the presented indicators only show a possible path for ESD indicator development. A comprehensive set of ESD indicators should also focus on the micro or output (e.g., ESD competencies) level. These insights for the future seem worth striving for not only in Germany or on the national level but also internationally to foster ESD, Target 4.7 of the SDGs and the SDGs in general. Stokke (1990,p.) on 6th EDAI general conference.

UNESCO has launched ESD for 2030 toolbox which sets the urgent challenges facing the planet and the implementation of ESD. The ESD for 2030 roadmap outlines actions in five priority action areas on policy, learning environments, building capacities of educators, youth and local level action, stressing further ESD's key role for the successful achievement of the 17 SDGs and the great individual and societal transformation required to address the urgent sustainability challenges. It also underlines six key areas of implementation: country initiatives on ESD for 2030, ESD for 2030 Network, communication and advocacy, tracking issues and trends, mobilizing resources, and monitoring the progress.

Bertschy et al.(2013) found that the significance of ESD has not been acknowledged throughout (by lecturers as well as institutions as a whole). The combination with a repeatedly stated lack in duration of training renders these two barriers particularly difficult to overcome. For that reason, it is significant to identify various and fundamentally different training courses (e.g., in educational modules in Educational Science or Didactics), in which one could also focus on ESD-specific competencies of teachers. According to the united nations economic commission for Europe (UNECE) project The competences of a teacher are strongly influenced by the beliefs and values he or she has. SD issues are nearly always controversial and involve value judgments which cannot be settled by (scientific) evidence alone (Summers et al. 2005). For example, a teacher who is convinced that global climate change is a natural phenomenon which is not influenced by human activities will probably not encourage her/his students or pupils to participate in local Agenda 21 or other activities that focus on reducing CO2 emission. Or a teacher who believes that SD challenges can only be resolved on a high policy-making level, and therefore believes that citizens have no role to play in SD debates, will probably not stimulate his/her students or his pupils to take action for SD. Laurie et al. (2016) found that ESD contributes in many ways to quality education in primary and secondary schools. Teaching and learning transform in all contexts when the curriculum includes sustainability content, and ESD pedagogies promote the learning of skills, perspectives and values necessary to foster sustainable societies. The research also identified the need to integrate ESD across all subjects, provide professional development for teachers to ensure ESD policy implementation and to adopt ESD management practices to support ESD in the curriculum in order to broaden ESD across countries. Sims (2013) study suggests the importance of experiential, inter-disciplinary and inter-

institutional learning, problem-based learning around real-life issues with community and the natural environment, and of building partnerships with colleagues, students, and community organizations. Hoffmann (2013) found that three domains of competencies can be formed, which are logically coordinated in the sense of being enabled to act sustainably: recognition, evaluation, and action.

CONCLUSION

Teachers acquiring a specialized certification for ESD instruction through relevant educational and further educational offerings is a critical contribution to the efficacy of ESD, in our opinion. Simultaneously, we believe it is inalienable that concrete competence components for the planning, implementation and evaluation of ESD teaching offers be justified, defined, and described in a substantiating manner when it comes to the development of ESD-specific educational offers in teacher education and further education. Furthermore, the ESD-specific action competence of kindergarten and primary school teacher's competence model should strive to contribute directly to the issue of teacher professionalization in educational science. Even though descriptions and justifications of professional action competency for teaching ESD have carved out the desired destination route, and even though the discussion on its teachability and learnability could have implications for the design of educational settings in teacher education, the actual implementation of ESD in teacher education cannot be granted. Various studies have identified various barriers to ESD implementation in higher education: On the one hand, the courses' disciplinary structure complicates their execution because they require possibilities for multidisciplinary work. The importance of ESD, on the other hand, has been overlooked throughout (by lecturers as well as institutions as a whole). These two barriers are particularly tough to overcome when combined with a consistently claimed lack of training duration. As a result, it is critical to identify a variety of fundamentally diverse training courses (for example, educational modules in Educational Science or Didactics) in which ESD-specific teacher competencies could be addressed (Bertschy et al (2013)).

REFERENCES

- Sharma, P. (2022). NEP and the SDGs - Are we Ready for SDG4BW? EklavyaParv. Retrieved April 30, 2022, from <https://eklavyaparv.com/eklavyaism/insights-views/509-nep-and-the-sdgs-are-we-ready-for-sdg4bw>.
- Roadmap for implementing the global action programme on education for sustainable development. Paris: UNESCO. Retrieved 16 July 2016, From <http://unesdoc.unesco.org/images/0023/002305/230514e.pdf>.
<https://unesdoc.unesco.org/ark:/48223/pf0000220416>
- United Nations Educational, Scientific and Cultural, Organization (UNESCO) . (2014).
- UNESCO Institute for Statistics. (2016). Sustainable development data digest: Laying the foundation to measure sustainable development goal 4. UNESCO Institute for Statistics. <https://doi.org/10.15220/978-92-9189-197-9-en>
- Education for sustainable development: a roadmap. Retrieved May 7, 2022, from <https://unesdoc.unesco.org/ark:/48223/pf0000374802.locale=en>.
- Fekih Zguir, M., Dubis, S., & Koç, M. (2021). Embedding Education for Sustainable Development (ESD) and SDGs values in curriculum: A comparative review on Qatar, Singapore and New Zealand. *Journal of Cleaner Production*, 319, 128534. <https://doi.org/10.1016/j.jclepro.2021.128534>.
- Walshe, N. (2008). Understanding students' conceptions of sustainability. *Environmental Education Research*, 14(5), 537–558. <https://doi.org/10.1080/13504620802345958>.
- Birdsall, S. (2014). Measuring student teachers' understandings and self-awareness of sustainability. *Environmental Education Research*, 20(6), 814–835. <https://doi.org/10.1080/13504622.2013.833594>.
- Birdsall, S. (2015). Analysing teachers' translation of sustainability using a PCK framework. *Environmental Education Research*, 21(5), 753–776. <https://doi.org/10.1080/13504622.2014.933776>.
- Stevenson, R. B. (2006). Tensions and transitions in policy discourse: recontextualizing a decontextualized EE/ESD debate. *Environmental Education Research*, 12(3–4), 277–290. <https://doi.org/10.1080/13504620600799026>.
- Borg, C., Gericke, N., Höglund, H.-O., & Bergman, E. (2012). The barriers encountered by teachers implementing education for sustainable development: discipline bound differences and teaching traditions.

Research in Science & Technological Education, 30(2), 185–207. <https://doi.org/10.1080/02635143.2012.699891>.

Laurie, R., Nonoyama-Tarumi, Y., Mckeown, R., & Hopkins, C. (2016). Contributions of Education for Sustainable Development (ESD) to Quality Education: A Synthesis of Research. *Journal of Education for Sustainable Development*, 10(2), 226–242. <https://doi.org/10.1177/0973408216661442>.

Nousheen, A., Yousuf Zai, S. A., Waseem, M., & Khan, S. A. (2020). Education for sustainable development (ESD): Effects of sustainability education on pre-service teachers' attitude towards sustainable development (SD). *Journal of Cleaner Production*, 250, 119537. <https://doi.org/10.1016/j.jclepro.2019.119537>.

Waltner, E.-M., Rieß, W., & Brock, A. (2018). Development of an ESD Indicator for Teacher Training and the National Monitoring for ESD Implementation in Germany. *Sustainability*, 10(7), 2508. <https://doi.org/10.3390/su10072508>.

Bertschy, F., Künzli, C., & Lehmann, M. (2013). Teachers' Competencies for the Implementation of Educational Offers in the Field of Education for Sustainable Development. *Sustainability*, 5(12), 5067–5080. <https://doi.org/10.3390/su5125067>.

Laurie, R., Nonoyama-Tarumi, Y., Mckeown, R., & Hopkins, C. (2016). Contributions of Education for Sustainable Development (ESD) to Quality Education: A Synthesis of Research. *Journal of Education for Sustainable Development*, 10(2), 226–242. <https://doi.org/10.1177/0973408216661442>.

Sims, L., & Falkenberg, T. (2013). Developing Competencies for Education for Sustainable Development: A Case Study of Canadian Faculties of Education. *International Journal of Higher Education*, 2(4), p1. <https://doi.org/10.5430/ijhe.v2n4p1>.

The concept of competencies in the context of Education for Sustainable Development (ESD). Retrieved May 15, 2022, from <https://esd-expert.net/home.html>

MODERNIZATION OF AGRICULTURE-FOOD SUPPLY CHAIN USING IOT, BIG DATA AND BLOCK CHAIN**Ms. Kiran Mayee Mishra**

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ABSTRACT

In agricultural and Food Supply chain, the Internet of Things consequences in large quantity of streaming data, regularly referred to as “big data”, which brings new possibilities to screen. Besides sensors, large statistics from social media is additionally turning into essential for the meals industry. In this overview we current an overview of IoT, huge data, and synthetic brain (AI) and their disruptive position in shaping the future of agri-food systems. [1][2]

Following an introduction to the fields of IoT, massive data, and AI, we talk about the function of IoT and large facts evaluation in agriculture (including greenhouse monitoring, clever farm machines, and drone-based crop imaging), supply-chain modernization, social media (for open innovation and sentiment analysis) in Food industry, foods satisfactory evaluation (using spectral techniques and sensor fusion), and finally, foods protection (using gene sequencing and block chain based totally digital traceability). A one-of-a-kind emphasis is laid on the business fame of functions and translational lookup outcomes. [2]

Keyword: Bigdata, Block Chain, IOT, Agri Food, Food Chain

INTRODUCTION

INTERNET of things (IoT), big data and artificial intelligence (AI) are possibly historical buzzwords in the tech-industry that are making an affect solely in very current times. In fact, records from Google Trends search records for these subjects indicates that IoT and large facts have drawn extensive activity of broad-based net customers inside final Five to six years, while AI stays a theme of pastime for a lot over a decade .[7]

In fact, with the amplify in verbal exchange units the quantity of facts generated is rising and AI is persevering with to well-integrate into the lives of a large population of the planet in one structure or the other. Unlike AI, IoT especially being industrial technological know-how stays to be of low pastime to the conventional public. A natural subject of activity for agri-food scientists and engineers would be to maximize the influences of these rising facts applied sciences for sustainably feeding the planet. As a first purpose of this review, we will start by using quickly introducing these subjects for these audiences who are coming from a heritage in agriculture and food sciences.

DISCUSSION**1. Big Data Basic**

When speaking about the thinking of big data, which is regularly in the framework of inspecting massive records alternatively of the use of the traditional technique of facts processing. We have been speak me about speed, size, and diversity, and then fee and honesty, which are traits that require complicated techniques and methods that fluctuate from ordinary methods.

One of the most vital adjustments and variations is the dependence of that huge information on new equipment and methods for the motive o of obtaining treasured facts for establishments after processing it in the right and present day technical ways, via the ability to hyperlink a couple of records with every other. The time period huge records has changed the ancient way of storing facts in organizations, which resulted in a greater complete thought of statistics switch and gorgeous consequences for organizations and institutions business. This time period has reached cloud computing and a huge unfold of big facts technologies.[1][2]

2. Big Data Characteristics**Speed**

While gathering massive quantities of information and inspecting it quickly, the idea of velocity and its significance is clarified thru the giant make bigger in data, such as images, videos, e-mails, social media, etc. Short and convenient time. [3]

Volume

It offers the thinking to the quantity of records that are generated each 2nd is out of websites, mobiles, social media, credit score cards, photos, videos, etc. The volumes of facts streaming have end up so giant and expensive, in fact, it is very challenging to keep and analyze information with the ancient common database

technology. Currently, the final answer is to use dispensed structures technology, in this new technology, portions of facts are saved in exclusive places and then collected and delivered collectively when wished the use of some software.

Valume

It suggests the cost of the facts that is being extracted. There is no factor in having an quantity of facts until it is transformed into a value. There is a relationship between statistics and insights, so it is phase of a venture inside the framework of massive data, which helps to understand the expenses and advantages of gathering and examining information for a guarantee purpose the cost of proudly owning huge data.

Diversity

The time period range of large statistics described as the distinct sorts of facts used. The statistics appears very different these days in contrast to the facts from the past. You no longer have solely structured records like name, smartphone number, address, monetary data, etc., that healthy properly into your spreadsheet. However, the statistics nowadays is disorganized. More than 80% of the world's statistics along with photos, videos, social media, etc. Big information technological know-how is revolutionary allowing structured and unstructured facts to be collected, stored, and used simultaneously.

TRUTHFULNESS

When speaking about information accuracy and reliability, what is intended is statistics integrity and basic

3. Internet of Thong in Agriculture

We throw away about 1/2 of the food we produce - extra than 900 million tons of it each and every year. Yet two billion human beings in the world are not sure the place their subsequent meal will come from, in accordance to the UN.

So, the assignment for Real Action: Smart Agriculture to reply is: How can we leverage science to limit food waste, and get perishables to the proper area at the proper time – and in the proper amount?

Our first Real Action sequence focuses on a promising treatment to this hassle with Smart Agriculture, a suite of superior farming technologies. This emergent thinking applies IoT in farming, alongside with different present day applied sciences such as AI, Big Data and Now Block chain is used in food supply.

4. IOT Overview

The Internet of Things, or IoT, refers to the billions of bodily units round the world that are now related to the internet, all accumulating and sharing data. Thanks to the arrival of super-cheap computer chips and the ubiquity of wi-fi networks, it is feasible to flip anything, from something as small as a capsule to something as large as an airplane, into a section of the IoT. Connecting up all these exceptional objects and including sensors to them provides a degree of digital intelligence to units that would be in any other case dumb, enabling them to talk real-time records barring involving a human being. The Internet of Things is making the material of the world round us greater smarter and extra responsive, merging the digital and bodily universes.[6]

5. BLOCKCHAIN OVERVIEW

Block Chain Means

Blockchain is a shared, immutable ledger that helps the process of recording transactions and monitoring assets in a commercial enterprise network. An asset can be tangible (house, cash, car, land) or intangible (patents, branding, copyright). Virtually whatever of value can be tracked and traded on a blockchain network, decreasing risk and cutting expenses for all involved.[5]

Why Blockchain is Important

Business runs on information. The quicker it's acquired and the greater correct it is, the better. Blockchain is perfect for handing over that record due to the fact it presents immediate, shared and absolutely transparent data saved on an immutable ledger that can be accessed solely by using permissioned community members. A blockchain community can track orders, payments, accounts, manufacturing and a great deal more. And due to the fact individuals share a single view of the truth, you can see all important points of a transaction end to end, giving you higher confidence, as well as new efficiencies and opportunities.

6. Big Data Tools Security and Challenges Issues and its Solution Using Block Chain in Agri-Food Supply Chain

Data Privacy

When speaking about data privacy, which is one of the most vital subjects for users, and one of the most necessary and biggest worries for organizations and establishments that hire big data technologies and tools.

Data Management

The whole cycle of records offers it the notion of managing the records used in the huge facts system, an instance of this, collecting records for the motive of sharing it, and how to manage the protection of that statistics based totally on techniques of collection and sharing, and the protocols observed for the reason of securing the data.

Integrity and Protection in Interaction

The foremost motive is to make certain that the statistics is authentic and has no longer been modified, by means of the usage of a variety of sorts of verification tools to make certain the integrity of the data. Therefore, it is vital to understand the extent of the opportunity of discovering that the massive information machine can also or can also already be uncovered. [7]

Block Chain Benefits**Can Make a Traceable Supply Chain**

Food Industry is used to Block chain to trace when where how foods are grown, Shipped and Processed. Data Privacy Issue can be avoided using block chain.

Greater Trust

In Block chain only members of a members Network, In this networks you can assured that you can receiving accurate as timely data.

Greater Security

All networks' members are required data accuracy. In Block chain all validated transactions are immutable because they are recorded permanently. Here Anyone, even if a system administrator, cannot delete a transaction.

More Efficiencies

The time-wasting record reconciliations are eliminated with a distributed ledger that is shared among members of a network. For speed transactions, a set of rules — called a smart contract — can be stored on the blockchain and executed automatically.

CONCLUSION

The main aim of this paper is to present the role and concept of Big Data and its characters, applications, and security challenges. Big Data is a great tool that that is used to analyses data for future prediction but the tools used in Bigdata threat security. Big data used in several applications such as banking, chemistry, agriculture, marketing, health care sector, etc. This industry has been growing every day. Security of data is necessary to grown up any business, so for higher security a new concept is used that is block chain. Now Block Chain stays for the purpose of effectively influencing institutions and companies, the future of market to increase productivity and supply food securely.

REFERENCES

- [1]. "Big Data," Techopedia Inc: <https://www.techopedia.com/definition/27745/bigdata>.
- [2]. "What Is Big Data?" Oracle: <https://www.oracle.com/big-data/guide/what-is-bigdata.html>.
- [3]. Brief about Bigdata :<https://www.techtarget.com/searchdatamanagement/definition/big-data#:~:text=Big data is a combination, and other advanced analytics applications>.
- [4]. Block chain Overview and benefit: <https://www.ibm.com/topics/what-is-blockchain>
- [5]. What is block chain how does it work: <https://builtin.com/blockchain>
- [6]. What is IOT: <https://www.zdnet.com/article/what-is-the-internet-of-things-everything-you-need-to-know-about-the-iot-right-now/>
- [7]. Smart Agriculture: https://www.nokia.com/networks/real-action/smart-agriculture/?did=D00000001457&gclid=Cj0KCQjwsdiTBhD5ARIsAIPW8CLgAZr77s2CH90xw56LWwOiRTP72Q9P3tQMTsygrCsV5gr2DgXoK1YaAs-HEALw_wcB

THERMAL AND NON THERMAL METHOD OF MODIFICATION OF STARCH - PHYSICAL METHOD -A REVIEW

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ABSTRACT

Starch is a naturally occurring polysaccharide obtained from various plant sources. Along with biodegradability it has end use of industrial applications. Apart from food applications it gains importance in different non - food areas also. Natural starch has less solubility, stability, poor processability thus to overcome these limitations and enhance its multifaceted application, starch needs to be modified. Modification methods can be categorized as chemical, physical and enzymatic methods. This review article compiles physical methods of starch modification. Their process, change in properties and application are discussed.

Keywords: Starch, structure of starch, methods of modification.

1. INTRODUCTION

Starches from various plant sources such as corn, potato, wheat and rice, have received extensive attention in relation to structural and physico-chemical properties.

It is well known that starch is one of the most important naturally abundant completely biodegradable polysaccharides and due to its low cost and ability to impart a broad range of functional properties to food and nonfood products, starch is utilized in several industrial applications such as texturing, thickening/gelling, water retention agent and adhesive in textile industry.

Nevertheless, under various process conditions like temperature, pressure and pH, native starches show unwanted properties for many applications. These properties can limit their industrial application, due to their low resistance to high shear rates, thermal decomposition, high retrogradation and synergies. Improvement in these starch properties can be achieved by modification of starch structure, using chemical, physical and enzymatic methods.

Chemical modification offers new possibilities to improve inherent shortcomings of starch. Among all procedures, graft polymerization of vinyl monomers to starch looks like a very fascinating research field having unlimited potentials for improvement of starch properties.

Synthetic polymers are easy to synthesize on a large scale at low costs. They can be tailor-made as per desired end use. Polymers exhibit properties which range from hard to soft, insulator to good conductor, colorless to brightly colored, rigid to flexible, opaque to transparent. Moreover, some polymers can be recycled too. These all properties of polymers have made polymers so useful that now world without polymers cannot be imagined.

However, synthetic polymers are non-biodegradable. The large debris of synthetic polymers in the world has become a hazard to ecology and danger to domestic animals, civic infrastructure and threat to the environment. Hence there is a dire need to shift to completely biodegradable polymers.

Starch is one of the most abundant biomass materials produced by many green plants, and widely used polysaccharide in diverse areas of industry such as food, textile paper, pharmaceutical or plastic.

Natural starch is low resistance polymers towards acidic and moisture environment, and it is characterized by flowability, amorphous swelling, and poor processability which have considerable influence on the limiting its practical application¹.

The properties of starch can be modified in different ways such as oxidation, esterification, etherification, hydrolysis, cross-linking and grafting in order to increase its acid or moisture resistance, thermal stability etc².

2. MODIFICATION OF STARCH**Native Starches Can be Modified Via two Methods³.**

- a) Physical Modification - To acquire required features in Native Starches various physical treatment are conducted.
- b) Chemical Modification - In this modification some functional groups are introduced in native starches, as a result some properties like gelatinization, retrogradation and pasting are changed.

2.1 Physical Modification⁴⁻⁵

Physical modification of starch is easy, low cost and environmentally friendly as this method does not involve chemicals. Physical modification of various starches can be categorized in many ways. In this article different physical methods are classified as thermal and non-thermal methods.

2.1.1 Thermal Method⁶

During thermal treatment, the structure of starch granules was destroyed. Different thermal methods were discussed as follows-

2.1.1.1 Pregelatinization (PG)⁷⁻⁹

Process- Starches were heated above their gelatinization temperature in excess of water, this was followed by drying. Various drying methods include drum drying, spray drying and extrusion. As a result, starch granules are fragmented and granular structure is destroyed.

Changes in Properties - Natural starches (NS) were not soluble in water but pregelatinized starches (PGS) were readily soluble in water. PGs were porous, hence have a high water absorption index (WAI). X-ray studies reveal the amorphous nature of PGs and concave spherical shape was observed by scanning electron microscope (SEM).

Application- These starches were soluble in cold water and hence can be used as thickeners in food industries. In thermal sensitive foods also these are used.

2.1.1.2 Hydrothermal Modification (HTM)

Starches were treated above glass transition temperature (T_g) but below gelatinization temperature so in this method granular structure was retained. Natural starches can be modified by two different methods under the title hydrothermal modification. These two methods were Annealing (ANN) and Heat moisture treatment (HMT)¹⁰⁻¹¹.

2.1.1.2.1 Annealing (ANN)¹²

Process- In this method starch granules were heated in excess (76%w/w) or at intermediate water amounts and at a temperature below GT and above T_g.

Change in Properties - Annealed starches were thermally more stable and hence had less extent of setback. GT increases and range of GT decreases. Viscosity was increased under both hot and cold conditions.

Application - ANN starches are useful in canned food and frozen food industries and also in preparation of noodles.

2.1.1.2.2 Heat Moisture Treatment (HMT)¹³

Process- Under this thermal process starches are heated in the presence of a limited amount of water (35%w/w) above T_g but below the GT.

Change in Properties - The effect of HMT, depends on botanical sources of starch. HMT starches have high pasting temperature but possess less solubility, peak viscosity, swelling power and amylose leaching.

Application - These starches are used at commercial level in infant food preparation. In potato starch freeze - thaw stability and baking qualities are enhanced in food industries for desired products.

2.1.2 Non Thermal Method

In non-thermal treatment structure of starch granules was retained. Because of thermal treatment during thermal method of modification some essential nutrients are lost along with this flavor of food is also diminishing. To overcome this problem non-thermal treatment was introduced. Non thermal treatment of starches helps to maintain texture, flavor, test and nutrients.

2.1.2.1 High Hydrostatic Pressure¹⁴ (HHP) -

Process - Native starches are treated with high hydrostatic pressure. Due to high pressure (100 MPa to 1000 MPa) water enters into starch granules and brings some changes and also starches are sterilized.

Change in properties - HHP modified starches shows decreases in viscosity. These starches gelatinise at room temperature or even at low temperature then the ambient temperature. These starches exhibit decrease in swelling Index.

Application - High pressure treated starches have creamy surface so they can replace oil in dietary food items. These starches are used to prepare resistant starches, which is used in treatment of cancer and diabetes¹⁵.

2.1.2.2 Ultrasound Effect (US)

Process - Energy efficient and eco - friendly methods involve the principle of green chemistry. US with frequencies of 20 KHz to 10 MHz were used. Ultrasonic process was executed in a two phase liquid solid system, water acted as a medium. During this process US waves were produced and hydroxyl free radicals were generated. As a result, starch was hydrolysed and pores were generated on the surface of starch.

Change in properties¹⁶ - Paste viscosity reduces, loss in particle size was observed for US, crystallinity, molecular weight and enthalpy of gelatinisation decreases on the other hand water adsorption and swelling power observed increases.

Application - This process was very useful for food as well as non food industries. This technique was very useful in different areas of food processing like deforming, extrusion, separation, viscosity alteration, crystallization, extraction, emulsification and homogenization.

2.1.2.3 Microwave Treatment¹⁷⁻¹⁸

Process - 33% (w/w) suspension of starch and water was irradiated in a microwave oven (Galanz) at 2450 MHz and 700 W for different time intervals.

Change in properties - Microwave processed starches shows change in morphology. SEM reveals that the surface becomes rough and fluted. MT increases pasting temperature and decreases the firmness. Molecular weight reduces and extent of reduction depends on irradiation time.

Application - Microwave treated starches were used in various food industries, example in preparation of instant noodles.

2.1.2.4 Pulsed electric fields (PEF) - This had been used as a food preservation method in which pathogens are killed using an electric pulse. As a consequence, the shelf life of food increases.

Process - This method was widely accepted for modification of macromolecules. NS and water (8.0%) suspension were radiated with high intensity electric pulses (over 10 kv cm⁻¹) for a short period (less than 40us). Advantages of this method were uniform treatment at low temperature for a short time.

Change in properties - SEM reveals that crystallinity and gelatinization temperature was decreased and mishap of granules was also observed. Peak viscosity was found to be declined.

Application - This method helps to improve shelf life of food and hence applicable to maintain freshness of food products.

REFERENCES

1. Marta Worzakowska, Starch-g-poly(benzyl methacrylate) copolymers Characterization and thermal properties, *J Therm Anal Calorim* (2016) 124:1309–1318
2. Yifei Fan, Francesco Picchioni, Modification of starch: A review on the application of “green” solvents and controlled functionalization, *Carbohydr Polym* (2020), 241, 116350.
3. Kaviani Neelam, Sharma Vijay and Singh Lalit, Various Techniques for the modification of starch and the applications of its derivatives, *Inter Resear J Pharmacy* (2012), 3(5), 25-31.
4. Adeleke Omodunbi Ashogbon, Current Research Addressing Physical Modification of Starch from Various Botanical Sources, *Glob Nutrit Dietetics* (2018), 1(1), 001.
5. Zia-ud- Din, Hanguo Xiong & Peng Fei, Physical and Chemical Modification of Starches - A Review, *Critical Reviews in Food Science and Nutrition* (2017), 57(12), 2691-2705.
6. Raghunathan, R.; Pandiselvam, R.; Kothakota, Anjineyulu; Mousavi Khaneghah, Amin, The application of emerging non-thermal technologies for the modification of cereal starches. *LWT- Food Sci techno* (2021), 138, 110795.
7. M. Majzoobi, M. Radi, A. Farahnaky, J. Jamalian, T. Tongtang, Gh. Mesbahi, Physicochemical Properties of Pre-gelatinized Wheat Starch Produced by a Twin Drum Drier, *J. Agr. Sci. Tech.* (2011), 13, 193-202.
8. Hao Ma, Mei Liu, Ying Liang, Xueling Zheng, Le Sun, Wenqian Dang, Jie Li, Limin Li and Chong Liu, Research progress on properties of pre-gelatinized starch and its application in wheat flour products, *Grain & Oil Sci and Techno.* (2022).

9. Swee Y. Yu and Shea L. Low, Utilization of pre-gelatinized tapioca starch in the manufacture of a snackfood, fish cracker ('keropok'), *Food Sci Techno* (1992), 27(5), 593-596.
10. Heidi Jacobs and Jan A. Delcour, Hydrothermal Modifications of Granular Starch, with Retention of the Granular Structure: A Review, *J. Agric Food Chem* (1998), 46(8), 2895–2905.
11. Dr. Rolf Stute, Hydrothermal Modification of Starches: The Difference between Annealing and Heat/Moisture -Treatment, *Starch* (1992), 44(6), 205-214.
12. Richard FTester and Stéphane J.JDebon, Annealing of starch — a review, *Int J Bio Macro* (2000), 27(1), 1-12.
13. A Gunaratne and R Hoover, Effect of heat–moisture treatment on the structure and physicochemical properties of tuber and root starches, *Carbohydr Polym* (2002), 49(4), 425-437.
14. Liu Pei-Ling, Hu Xiao-Song and Shen Qun, Effect of high hydrostatic pressure on starches: A review, *Starch* (2010), 62(12), 615-628.
15. Behzad Nasehi and Saeideh Javaheri, Application of High Hydrostatic Pressure in Modifying Functional Properties of Starches: A Review, *Middle-East Journal of Scientific Research*(2012), 11 (7), 856-861.
16. MonikaSujka and JerzyJamroz, Ultrasound-treated starch: SEM and TEM imaging, and functional behaviour, *Food Hydrocollide* (2013), 31(2), 413-419.
17. Yanli Xie , Mingxia Yan, Shasha Yuan, Shumin Sun and Quangong Huo, Effect of microwave treatment on the physicochemical properties of potato starch granules, *Chemistry Central Journal* (2013), 7:113.
18. ZhongHan, Xin AnZeng, Shu JuanYu, Ben ShanZhang, Xiao Dong Chen, Effects of pulsed electric fields (PEF) treatment on physicochemical properties of potato starch. *Innovative Food Sci. & Emerging Tech.* (2009), 10(4), 481-485.

DATA PRIVACY AND ISSUES**Ms. Lata Bhatia**

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ABSTRACT

Background: With the increasing use of internet and smart devices, lot of private and sensitive and other data is collected from users and is shared, accessed and analyzed for various purposes. Various organizations such as E commerce websites, Online Banking facilities, Smart applications using Artificial Intelligence or Smart devices using Internet of Things concept are increasing popular now a days. The user shares various personal data such as transaction details, health details, credentials and many other personal details. Apart from providing various benefits and facilities to the end users, breaching, misusing or leaking of private data using these technologies has become a serious concern.

Methods: To learn various privacy issues evolved out of various technologies such as Artificial Intelligence, Big Data Analytics, Cloud Computing and Internet of Things, we search the literature using different academic databases such as IEEE, Scopus, Google Scholar, various books, articles etc. In this study, tried to collect and studied the information provided in them regarding various private data and its issues in different technologies.

Results: There occurs a large concern for preserving the privacy of user data. Some of the solutions are also analyzed to release the burden of maintaining and preserving private data to some extent. Some of the solutions found during the study are discussed.

Conclusion: Maintaining Data privacy is more or less users' responsibility, Organizations' responsibility and with the use of various software and technologies, privacy can be maintained to some extent.

Keywords: Cloud Computing, Big Data, Artificial Intelligence, Internet of Things (IoT), data privacy.

I. INTRODUCTION

Any shared, stored, retrieved, accessed and or handled information using various digital applications is known as Data. It is information that has been converted into a form that is effective for sharing, storing or processing.[1]. Data Privacy means protection of private data from its unauthorized access and its misuse and having a control to the originator of data regarding who can use its private data. Privacy of data also deals with the concept in which the users or customers private information is collected, shared and used in a secure way such as in online purchasing websites where customers share their credit or debit card information, apps using the concept of Artificial Intelligence say for an example: An AI app which records the parking slot of a vehicle for future reference by the app user, E Banking transactions where banking customers share the information such as Account number. Name etc.

Not to forget the very known CIA Triad. Confidentiality, Integrity and Availability are the three components of information security referring to as CIA triad. [2].

Confidentiality deals with the concept that only authorized people are allowed or given permission to alter the data [3]

Maintaining the reliability of information by having it in the correct state and resistant to any improper changes or modifications is known as Integrity. [3]

Only authorized users should be able to access or retrieve the data whenever needed is what is called as Availability. [3]

OBJECTIVES OF THIS STUDY

- 1) To understand what is data and what is private data
- 2) To identify various data privacy issues in various data collection dimensions such as Artificial intelligence, Big Data Analytics, Cloud Computing etc.
- 3) To identify some ways to protect the private data from getting breached or leaked or misused.

II. LITERATURE REVIEW

Davison, C. B., Lazaros, E. J., Zhao, J. J., Truell, A. D., & Bowles, B. (2021), in their research paper called "Data privacy in the age of big data analytics". Issues in Information Systems, 22(2), 177-186 discussed various concerns such as "What privacy, legal and security issues arise from the collection and analysis of vast amount of information? Within the context of big data analytics."

Syrine Sahmim, Hamza Gharsellaoui, (2017) in their research paper “Privacy and Security in Internet-based Computing: Cloud Computing, Internet of Things, Cloud of Things: a review” reviewed risk factors and solutions regarding various technologies and discussed various current and future trends.

Mehmood, I. Natgunanathan, Y. Xiang, G. Hua and S. Guo (2016), conducted a research work entitled "Protection of Big Data Privacy," in IEEE Access, vol. 4, pp. 1821-1834, 2016, doi: 10.1109/ACCESS.2016.2558446 in which they analyzed on privacy in data generation phase and privacy in data storage phase.

III. RESEARCH METHODOLOGY

The research paper is based on secondary data. The data has been collected from various Journals, newspapers, websites, already published papers, social media, published articles etc.

SCOPE OF STUDY

This study is based on secondary data. Hence the results are based on research study.

IV. DISCUSSION

1. Privacy Issues in Artificial Intelligence

Artificial Intelligence is a part of computer science with an aim of creating algorithms that can perform the tasks performed by the human beings. The term “artificial intelligence” (AI) describes the broad goal of empowering “a computer system used to perform tasks that normally require human intelligence, such as face, speech, visual recognition, decision making, thinking etc.” [12] The concept of AI has evolved rapidly in the recent times but has also raised number of concerns from data protection point of view.

AI tools and models are possibly weak, and their usage introduces new attack directions for telco environments. [6]

Some Privacy Issues of AI Include

Data Persistence – Driven by low cost of storage, Data which is existing longer than the person that created it, [13] like the data collected while parking a vehicle using an AI app. The vehicle may be drove away after the sometime of parking but the data may still persists in the database.

Data Repurposing – “If the data being used beyond their original purpose is called as Data repurposing [13] such as users vehicle information captured during parking time by AI app may be used for some other purpose after some period of time.

Data Spillovers – If the data collected of the people who are not the part of required data collection is termed as Data spillovers.[13] like any other information like location, some other nea by vehicle etc captured during the use of parking app may have data spillover in the future time period.

Weakness to Adversarial Attacks: “An adversarial attack such as Image recognition systems, can completely confuse the system. [7]

2. Privacy Issues in Big Data Analytics

A collection of data that is huge in volume, but grows exponentially with time is called as Big Data. It is a data with very large scope and complexity that none of available and traditional data management tools can store it or process it properly. [4] It is definitely strength in today’s digital age but also has a privacy risk associated with it. It includes use of tools such as Artificial Intelligence (AI), machine learning to work or process on the huge data collected.

The Main Data Privacy Risk that comes with big Data Analytics Are:

1. **Data Breach:** When private data is accessed without any legal authorization may be due to weak passwords or out of date software or any kind of malware attacks is called as Data Breach [5].
2. **Data Brokerage:** When the organizations buy the data without proper research or they are not receiving data from a reputable provider offering inaccurate data sets is called as Data Brokerage. [5]
3. **Data Storage and Collection:** Rather than storing the data on a physical computer or network, sensitive data or private information is often stored on the cloud to have minimal risk and requires a carefully planned data management plan and an thorough understanding of the privacy risks. [5].

3. Privacy Issues in Cloud Computing

Without direct active management by the user, on-demand availability of computer system resources, especially data storage and computing power is known as Cloud Computing.[8] It gives different services to the users

based on their demands such as servers, databases, networking systems etc. used via the internet. Important cloud computing service models are Software as a service (SaaS), Infrastructure as a service (IaaS) and Platform as a service (PaaS).

In Cloud Computing data is stored in large amount in unencrypted format which is managed by someone apart from the owner of the data. Privacy issues in cloud computing includes:

- i. **Data Confidentiality:** To maintain confidentiality of the data for the users is the main aim of any service provider so as to preserve the trust of the customers, Confidential data should not be accessible to unauthorized users. It can be achieved by encrypting the data while transmitting and storing it. Various algorithms such as RSA, 2DES, 3DES, AES, etc can be used for the encryption and decryption.
- ii. **Data Integrity:** Unauthorized Modification or deletion of data is termed as Data Integrity. It is also one of the important factor in data privacy. However, to maintain trust by the end user, it is needed to build the third-party administration mechanism besides users and cloud service providers. [9]
- iii. **Data Availability:** Authorized users should be able to access data whenever needed is the meaning for Data Availability. In case of cloud computing, data availability refers that any kind of disruption to data such as server failure, network failure, System failure etc., its required that the data can be recovered, backed up and verified by the users.

4. Privacy Issues in Internet of Things (IoT):

The term Internet of Things (IoT) means “for the aim of connecting and swapping data with other devices and systems over the internet. the network of physical things are embedded with sensors, instruments, software, and other technologies These devices may vary from ordinary household objects like smart watches, smart homes appliances to sophisticated industrial tools [10] such as smart cars to name a few. IoT data privacy is the important aspect to gain trust of the consumers.

IoT mostly consist of sensors which works on collecting the data that is required for its working for the customers or businesses. The data collected may sometimes be the real data of the customers. The customers should be made aware of when, what and how the data is collected and who will access the data. Where will be the data stored? How secure will be the data accessed. To secure personal information, IoT data privacy needs to be created into these devices from the ground up. [11]

During the study some of the ways found for preserving our private data from breaching, brokerage, leaked, misused, unauthorized access are described as follows:

- i) **“Give Users Control:** Whether AI is being used to make decisions about users or whether their data is being used in the creation of AI., users should be made aware of when their data is being used. They should also be given a option to permit to such data use. [14].
- ii) **“End User’s Responsibility:** User has to be careful while sharing the private data by reading the policies and rules and regulations regarding where the data will live and go after the user shares it.”
- iii) **“Organization’s Responsibility:** The organization or the company should be extra careful for not forwarding or leaking the user’s private data whether intentionally or not.”
- iv) **“Data Should be Encrypted:** The data which is stored in Big data or in Cloud especially the credentials like usernames and passwords should be encrypted so as to avoid data leakage or integrity issues.”
- v) **“Implement Data Integrity Safeguards** to guard data from unauthorized deletion, alteration, insertion or fabrication.”[15]
- vi) **“Keep a Watch on your Connected Devices:** From numerous solutions out there, select a security solution to find out how your sensitive data is being used on devices that are connected and for how long.”
- vii) **“To Possible Extent use Ad- Blockers:** In order to avoid data leaking, clicking an popup ads should be avoided to much extent unless it is genuine. Ad blockers can be used or settings can be made in the browser to avoid any third-party access to our data”
- viii) **“Store the Data for Limited Period of Time:** The data collected for the required purposed should not be stored for long period of time in the data base.”

V. CONCLUSION

Data privacy is something which should not be taken for granted. It's a social responsibility, Users' responsibility and the concerned organizations' responsibility that has a social value and individual's dignity. With the development and progresses of technologies and digital systems, protecting the private or sensitive data is also becoming equally significant. User should be made aware of where the data will live and where it will go after being shared with the organization via various technologies to maintain the privacy of end user.

VI. REFERENCES

- [1] Definition of Data, <https://www.techtarget.com/searchdatamanagement/definition/data>
- [2] The three-pillar approach to cyber security: Data and information protection, DNV, <https://www.dnv.com/article/the-three-pillar-approach-to-cyber-security-data-and-information-protection-165683>
- [3] What is The CIA Triad? - Definition and Examples, <https://intellipaat.com/blog/the-cia-triad/#1>
- [4] What is Big Data? Introduction, Types, Characteristics, Examples, <https://www.guru99.com/what-is-big-data.html>
- [5] Big Data and Privacy: What Companies Need to Know, <https://www.talend.com/resources/big-data-privacy/>
- [6] Privacy-Preserving AI for Future Networks, <https://dl.acm.org/doi/pdf/10.1145/3512343>
- [7] Alexandros Zenonos, PhD, 5 Key AI problems related to Data Privacy, <https://towardsdatascience.com/5-key-ai-problems-related-to-data-privacy-f39558290530>
- [8] https://en.wikipedia.org/wiki/Cloud_computing
- [9] Yunchuan Sun, Junsheng Zhang, Yongping Xiong, Guangyu Zhu, Data Security and Privacy in Cloud Computing, SAGE Journals, <https://journals.sagepub.com/doi/full/10.1155/2014/190903>
- [10] What is IoT?, ORACLE, <https://www.oracle.com/in/internet-of-things/what-is-iot/>
- [11] IoT and Data Privacy, IEEE Innovation at work, <https://innovationatwork.ieee.org/iot-data-privacy/>
- [12] Artificial Intelligence and Data Protection: Observations on a Growing Conflict, Fred H. Cate & Rachel Dockery, <https://ostromworkshop.indiana.edu/pdf/seriespapers/2019spr-colloq/cate-paper.pdf>.
- [13] Beware the Privacy Violations in Artificial Intelligence Applications, Guy Pearce, CGEIT, CDPSE, <https://www.isaca.org/resources/news-and-trends/isaca-now-blog/2021/beware-the-privacy-violations-in-artificial-intelligence-applications>
- [14] 4 Ways To Preserve Privacy In Artificial Intelligence, Booz Allen Hamilton, <https://www.boozallen.com/solution/four-ways-to-preserve-privacy-in-ai.html>
- [15] How to Secure Private Data Stored and Accessed in the Cloud, Principles for Digital Development, <https://digitalprinciples.org/resource/howto-secure-private-data-cloud/>.

WOMEN EMPOWERMENT IN INDIA**Mamata Manohar Ghadashi**

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ABSTRACT

In today's rapidly changing modern world, women's empowerment is an important issue. Being able means she can make her own decisions and live life without any help. In our ancient scriptures, "Yatra Naryastu Pujyante Ramante Tatra Devata" means that God has a place where women are worshiped. This paper attempts to analyse the status of Women Empowerment in India and highlights the Issues and Challenges of Women Empowerment. The women will be self-conscious socially, politically and economically by education. The study is based on purely from secondary sources. The study reveals that women of India are relatively victimhood and they enjoy somewhat lower status than men. The study concludes by an observation that access to Education, Employment and Change in Social Structure are only the enabling factors to Women Empowerment.

Keywords: Women Empowerment, Gender Equality, Education, Health, Socio-Economic Status.

INTRODUCTION

Women are almost half of the human population. Women's empowerment is, in short, a combination of the progressive and sensible approach of society towards eliminating this discrimination and creating a conducive environment for the advancement of women and balancing society through gender equality. Many people think that women should pay attention only to 'mother and child', but now women need to pay attention on her career as well as mother and child. Despite recognition in many international human rights treaties, women remain poor and illiterate. Women have less opportunities than men in medical facilities, property ownership, credit, training and employment.

The process of empowering women in all economic, social, educational and political field through legislation and welfare programs, providing opportunities for development, and eliminating gender inequality is called women's empowerment. Many schemes for the welfare of women are being implemented continuously by the government. The government is fully responsible for the safety and welfare of women. It plays a very important role in the overall development of the country. So, in order to make the country fully developed, women empowerment is an essential tool for the country in present-days.

1. REVIEW OF LITERATURE

- ❖ **M. Bhavani Sankara Rao** has state that health of women members of Self Help Group have certainly taken a turn to better. It clearly shows that heath of women members discuss among themselves about health related problems of other members and their children and make them aware of various Government provisions specially meant for them.
- ❖ **Shettar, R. M.** has state that "A Study on Issues and Challenges of Women Empowerment in India" that empowerment of women could only be achieved if their economic and social status is improved. This could be possible only by adopting definite social and economic policies with a view of total development of women and to make them realize that they have the potential to be strong human beings.
- ❖ **Duflo E.** Women's Empowerment and Economic Development, National Bureau of Economic Research Cambridge The study argues that the inter relationships of the Empowerment and Development are probably too weak to be self-sustaining and that continuous policy commitment to equally for its own sake may be needed to bring about equality between men and women.
- ❖ **Sethuraman K.** The Role of Women's Empowerment and Domestic Violence in child Growth and under nutrition in a Tribal and Rural Community in South India. This research paper explores the relationship between Women's Empowerment and Domestic Violence, maternal nutritional status and the nutritional status and growth over six months in children aged 6 to 24 months in a rural and tribal community.

2. OBJECTIVES OF THE STUDY

- To know the need of Women Empowerment.
- To study the Government Schemes For Women Empowerment.
- To identify the Hindrances in the Path of Women Empowerment.
- To find out the Violence against Women.

- To overview how Indian society is changing by Women Empowerment in the 21st century.
- To offer useful Suggestions.

3. RESEARCH METHODOLOGY

This paper is basically descriptive in nature. This paper has been taken to analyse the empowerment of women in India. The data used in it is purely from secondary sources like books, magazines, journals, various government organizations, website etc. according to the need of this study.

4. WHY NEED OF WOMEN EMPOWERMENT

Empowering women is the fundamental right of women. They can have equal rights to participate in education, society, economics and politics. They are allowed to have higher education and treated in the way like men. The status of women in India particularly in rural areas needs to address the issue of empowering women. Empowering women is essential to the health and social development of families, communities and countries. When women are living safe, fulfilled and productive lives, they can reach their full potential, contributing their skills to the workforce and can raise happier and healthier children.

Following ways can be used to Achieve Women Empowerment

- ❖ Boost her self-esteem.
- ❖ Provide education.
- ❖ Changes in women's mobility and social interaction.
- ❖ Changes in women's control over Decision making.
- ❖ Encouraging women to develop in their fields they are good at and make a career.

5. AWARENESS OF WOMEN EMPOWERMENT IN INDIA

Now-a-days the Government began various programmes for women development. The Government of India has schemes for women operated by different department and ministries. Some of these are as follows:

- ❖ Indira Mahila Yojana 1995.
- ❖ Women Entrepreneur Development programme given top priority in 1997-98.
- ❖ Support to Training and Employment Programme for Women.
- ❖ Swawalamban.
- ❖ Hostels for working women.
- ❖ Swadhar.
- ❖ National Mission for Empowerment of Women.
- ❖ Rajiv Gandhi Scheme for Empowerment of Adolescence Girls (2010).
- ❖ Dhanalakshmi (2008).
- ❖ Ujjwala (2007).
- ❖ Scheme for Gender Budgeting (XI Plan).
- ❖ Training of Rural Youth for Self Employment (TRYSEM).
- ❖ Prime Minister's Rojgar Yojana (PMRY).
- ❖ Women's Development Corporation Scheme (WDCS).
- ❖ Indira Mahila Kendra.
- ❖ Mahila Samiti Yojana.
- ❖ SBI's Stree Shakti Scheme.
- ❖ NGO's Credit Schemes.
- ❖ National Banks for Agriculture and Rural Development's Schemes. etc.

As well as many programmes have been implemented and run by the government such as international women's day, mother's day etc. in order to bring awareness in the society about the true rights and value of the women in the development of the nation.

6. BARRIER IN THE PATH OF WOMEN EMPOWERMENT

Women are continuously facing many problems even after having self-confidence, individuality, self-respect, personality, capacity, talent, and efficiency more than men. They are facing problems in their daily life even after they are given equal rights and opportunities like men by the Constitution of India. There are many challenges facing women's rights issues in India. Targeting these issues will directly benefit women's empowerment in India. Some barriers are as follows:

- ❖ **Education:** - Education is considered as a basic requirement and a fundamental right for the citizens of any nation. It is a powerful tool for reducing inequality as it can give people the ability to become independent. Women, who come across discrimination in many fields, have a particular need for this. Women Empowerment is a global issue and discussion on women political right are at the front line of many formal and informal campaigns worldwide. The constitutional directive to provide free and compulsory education for all children up to the age of 14 years has remained unfulfilled till now. Literacy and educational levels are increasing for Indian women still there is gap between male and female literacy rate. As of the Year, 2021 India's average literacy rate can be seen in the following Table :

Person	Literacy Rate in 2021
Male	84.70%
Female	70.30%

- ❖ **Poverty:** - Poverty is considered to be the biggest threat to world peace and eradication of poverty should be as important a national goal as eradication of illiteracy. This leads to the exploitation of women as domestic helpers.
- ❖ **Health and Safety:** - Women's health and safety issues are supreme in the interest of the country and are important factors in the assessment of women's empowerment. However, there are worrying concerns where mothers are concerned.
- ❖ **Professional Inequality:** - This inequality is prevalent in employment and promotion. In government offices and private industries, women face a number of barriers in a male-dominated environment.
- ❖ **Household Inequality:-** Family relationships around the world, especially in India, are showing gender differences in very small but important ways. Sharing house hold work, childcare and trivial workloads from the so-called division of labour.
- ❖ **Unemployment:-** It is becoming more and more difficult for women to find the right job for themselves. They become more vulnerable to exploitation and harassment in the workplace.

7. THE VIOLENCE AGAINST WOMEN

Though comparatively much lesser than other countries, the amount of violence committed against women in India is still high. The force committed against women, mostly by men, takes various forms – sexual assault, molestation, marital abuse, or naturally, household abuse. Whatever be the shape and extent, it is a punishable crime. However, owing to the country's crooked and lagging judiciary system, often, such crimes go unaddressed. The rates of violence against women keep on increasing. Violence against women which counted as crimes under the Indian penal code are rape, kidnapping and abduction, mental and physical torture, death for dowry, wife battering, sexual harassment, trafficking, molestation, importation of girls, etc. The cases of violence against women is increasing day by day and becoming too broad. On the other hand, with the increasing level of violence against women they started losing their educational, social, political, economic and cultural opportunities in the society. Dowry related violence is a serious problem that affects the lives of women and girls. Dowry includes gifts, money, goods or property given from the bride's family to the groom or in-laws before, during or any time after the marriage. Indian women through the countries remained subjugated and oppressed because society believed in clinging onto orthodox beliefs for the brunt of domestic violence as well as public, physical, emotional and mental violence. It can take the form of threats, verbal abuse, battering, rape and murder. Women living in India, 7.5% live in West Bengal where 12.7% of the total reported crime against women occurs. Andhra Pradesh is home to 7.3% of India's female population and accounts for 11.5% of the total reported crimes against women.

8. HOW INDIAN SOCIETY IS CHANGING BY WOMEN EMPOWERMENT IN THE 21ST CENTURY

In general sense Women empowerment means making women self-dependent and giving them all the freedoms and opportunities. In a specific sense, women empowerment means improving the position of women in the society's power structure. Women empowerment is a process of acquiring power for women in order to understand their rights and to perform her responsibilities towards oneself and others in a most effective way. Women empowerment abolishes all gender based discrimination in all institutions and structures of society. Women empowerment means their capacity to participate as equal partners in cultural, social, economic and political system of a society. In the process of empowerment women should consider their strengths and weakness opportunities and threats and move forward to unfold their own potential to achieve their goals through self-development has become an integral part of our development effects due to three important advantage entrepreneurs, economic growth and social stability. In the past few millennium, various great changes has occur in the status of women in India. Women are actively participating in the democratic process and elections which is quite more impressive in enhancing their status. Many women actively supported and participated in the nationalist movement and secured eminent positions and offices in administration and public life in free India. Education of women has not only helped them to become aware of the political problems, but they are gradually becoming active participant in the political life. Some are enrolling themselves as members of political parties, attending party meetings, conventions and carrying out political programs.

9. REASONS FOR THE EMPOWERMENT OF WOMEN

- ❖ If women who are 50% of global population suffers daily discrimination, increased risk of assault and all kinds of other delightful problems just by virtue of being female, we can say that empowerment should be a top priority.
- ❖ Financial empowerment of women motivate economic growth within a country which can lead to the country becoming more stable, reducing poverty and becoming a bigger player in the global market.
- ❖ The vast majority that is 80% of agricultural workers in the world are female. Empowerment to grow, buy and sell the crops they want decreases malnourishment in producing countries and increases the amount of food available for export.
- ❖ If women are empowered, that frees men from the pressure to be the primary wage-earner and shows little boys they can explore all aspects of who they are without paying attention to roles that are traditionally "masculine" or "feminine." Men will have more freedom to work part-time or take care of children, which frees them up for other, more interesting activities.
- ❖ When women stand up in political forums, we get legislation that can save lives, protect young girls and provide access to needed healthcare.
- ❖ Women's empowerment will lead to more journalism, better books and movies, and more interesting stories being told.

10. FINDING AND CONCLUSION

- ❖ There are many barriers to women empowerment in India.
- ❖ Poverty and lack of education are major obstacles to women empowerment.
- ❖ We must start by empowering women to create a sustainable world.
- ❖ This study shows that the empowerment of women occurs when they are involved in decision making in social, economic and political fields and they are also able to play an equal role as per with men in society.
- ❖ Sustainable development of the country should be possible if to promote the role of women in every social, political and economic activities of the development.
- ❖ Violence against women is a serious violation of human rights. The Government of India has provided to eliminating violence against women and girls through various policies, laws and programs.
- ❖ This study reveals that education is one of the most important means of empowering women with knowledge, skills and self-confidence necessary to participate fully in the development process.
- ❖ This study shows that educated women have greater chance to achieve high empowerment level.
- ❖ In present days, the role of India women has been changing because of growing women empowerment. Women empowerment has the power to change many things in the society as well as country.

11. REFERENCES

- ❖ www.wcd.nic.in/empwomen.htm
- ❖ <https://en.wikipedia.org/wiki/Empowerment>
- ❖ Sharma, Y. (2013). 'Women Entrepreneur in India.' Journal of Business and Management, 15(3)
- ❖ Dr. Dasarati Bhuyan “ Empowerment of Indian Women: A challenge of 21st Century” Orissa Review, 2006
- ❖ Pankaj Kumar Baro1 & Rahul Sarania “Employment and Educational Status: Challenges of Women Empowerment in India” ,
- ❖ Guidelines issued by Government of India

ECONOMIC GROWTH AND EMPLOYMENT

Minal More

ABSTRACT

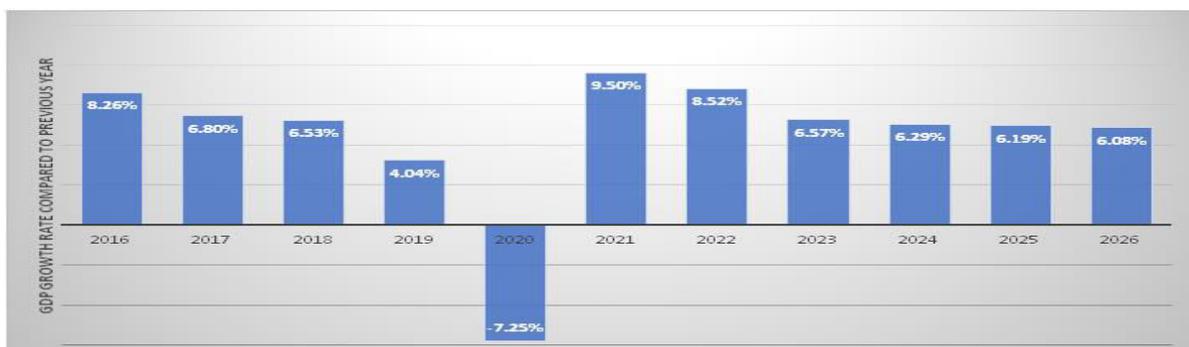
The study reveals that economic growth which started after independence took momentum after economic reforms were introduced in the economy. Now India is recognized as the second fast growing country after China and is emerging as a superpower in the years to come . GDP and Per Capita Income is growing but employment is not growing in the ratio the GDP is growing . As we know Labor is one of the main factors of production . By 2030, we have to achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value which is a challenge for sustainable development goals . With higher output and positive economic growth , it tends to employ more workers and to create more employment . Economic growth and Employment depend on the full use of it and the quality of the workforce . It discusses the direct and inverse relationship between economic growth and employment . Tourism industry plays a key role in any country's economic development. It helps significantly to the country for creating the employment opportunities to the enormous number of people. Moreover, it is also one of the important engines to attract more foreign exchanges with its potential . The number of jobs created by tourism in many different areas is significant. These jobs are not only a part of the tourism sector but may also include the agricultural sector, communication sector, health sector, and the educational sector. We want more tourists to visit their country which means that safe and advanced facilities are necessary. This leads to new roads and highways, developed parks, improved public spaces, new airports, and better schools and hospitals . Safe and innovative infrastructures allow for a smooth flow of goods and services. Moreover, local people experience an opportunity for economic and educational growth . Tourism is a terrific opportunity for foreigners as it allows young entrepreneurs to establish new products and services . Tourism drives economic prosperity and sustained development in many regions around the world .

Keywords: Economic Growth, GDP of India, Employment in Tourism

INTRODUCTION

Income and employment have always been crucial for economists, sociologists, and politicians throughout the ages . Even when the kings governed the state their performance was adjudged on the basis of the prosperity (Economic Growth) and employment status of its subjects. Economic prosperity of the country is perceived to be at its maximum, when all of its subjects are optimally and gainfully employed. Employment provides income to a person , which is used to create effective demand for consumption and capital goods in the country . This effective demand in turn leads to increased production of goods & services. His increased production again leads to more employment opportunities and thus contributes to economic growth. Employment is important not only for economic growth , but its ramifications have also been on social and political stability and peace in the country.

Employment is one of the main Macro – economic indicators that characterize the efficiency of the economy . In addition , the problem of employment is of great social importance . Not only the pace of economic development but also the social well-being of the economy depends on the level of employment . Employment must be effective . At the Macro level of the economic system , the goal is to efficiently distribute labor resources by industry and activity , which ensures high productivity of the national economy . At the Micro level of the economic system , the number of employees and the number of jobs in each enterprise should be balanced . From a social point of view , effective employment involves a combination of high production which results with fair wages , satisfaction of personal preferences of workers etc. The increase in labor productivity is an intensive factor of economic growth.



Real Gross Domestic Product Growth Rate of India from 2016 -2026

The statistics show the growth of the real gross domestic product (GDP) in India from 2016 – 2021 , with projections up until 2026 . GDP refers to the total market value of all goods and services that are produced within a country per year. It is an important indicator of the economic strength of a country. Real GDP is adjusted for price changes and is therefore regarded as a key indicator for economic growth. In 2019, India’s real GDP growth was 4.04% and in 2020 it was at about -7.25% compared to previous year. As the GDP declined in 2020 due to Covid – 19 Pandemic, it showed a drastic change in percentage compared to previous year.

Gross Domestic Product (GDP) Growth Rate in India:-

Recent years have witnessed a shift of economic power and attention to the strengthening economies of the BRIC countries : Brazil , Russia , India, and China . The growth rate of GDP in BRIC countries is overwhelmingly larger than in traditionally strong economies, such as the United States and Germany.

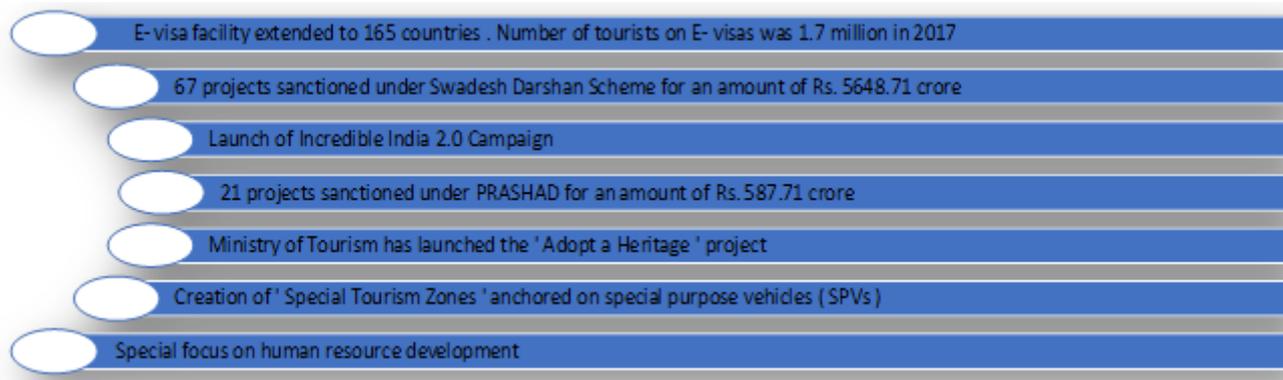
While the United States can claim the title of the largest economy in the world by almost any measure, China nabs the second largest share of global GDP , with India racing Japan for the third largest position . Despite the worldwide recession in 2008 and 2009 , India still managed to record impressive GDP growth rates , especially when most of the world recorded negative growth in at least one of those years .

Part of the reason for India’s success is the economic liberalization that started in 1991 and encouraged trade subsequently ending some public monopolies. GDP growth has slowed in recent years, due in part to skyrocketing inflation. India’s workforce is expanding in the industry and services sectors, growing partially because of international outsourcing – a profitable venture for the Indian economy. The agriculture sector in India is still a global power, producing more wheat or tea than anyone in the world except for China. However, with the mechanization of a lot of processes and the rapidly growing population, India’s unemployment rate remains relatively high.

TOURISM IN INDIA

Tourism is a social , cultural , and economic phenomenon which entails the movement of people to countries or place outside their usual environment for personal or business / professional purposes . Tourism in India is experiencing tremendous growth and is one of the major economic generators. Recent data shows a major contribution to the GDP of the country and a major tool for employment generation. The tourism and hospitality industry needs new innovation, trendsetter development and a progressive approach to extract the optimal potential from the available resources of the country. Tourism boosts the revenue of the economy, creates thousands of jobs , develops the infrastructure of a country and plant a sense of cultural exchange between foreigners and citizens . It is a vast industry which provides a number of ancillary services as it stimulates economic growth by generating income, employment, investment, and exports.

Some Achievements in Tourism Sector

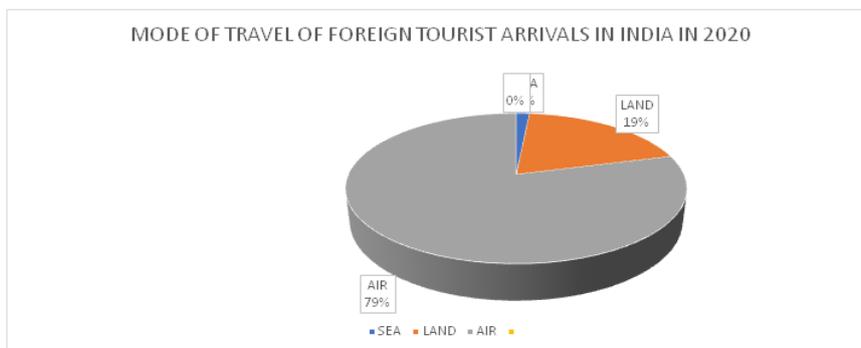


Employment in Tourism Industry

The tourism industry is one of the largest and most dynamic industries in today’s global economy . Tourism also plays a significant role in eradicating the unemployment. India has gained an exponential growth in the tourism industry. Tremendous growth in Indian economy is the main reason for the growth of tourism. Tourism industry in India is one of the most profitable industries and is credited with contributing a substantial amount of foreign exchange. Indian tourism industry has also helped the growth in other sectors like horticulture, handicrafts, agriculture, construction and even poultry. The ministry of tourism plays a crucial role in formulating national policies and programs to help the government in improving the quality of tourism industry.

According to the report of World Travel and Tourism Council, Travel and Tourism generated 26,148,000 jobs directly in 2017(5% of total employment) and is forecast to grow by 2.8% in 2018 to 26,883,000 (5.1% of total employment). This includes employment by hotels, travel agents, airlines and other passenger transportation services excluding commuter services. By 2028, Travel and Tourism will account for 33,195,000 jobs directly, an increase of 2.1% p.a. over the next ten years.

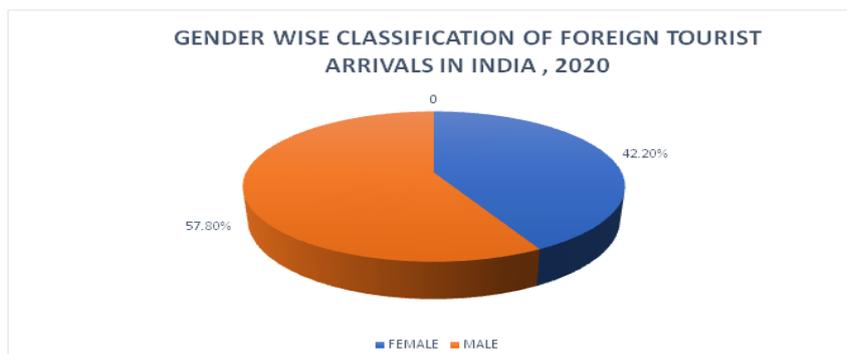
Mode of Travel of Ftas in India



Ftas in India According to Mode of Travel, 2001 – 2020

Year	Arrivals	% Distribution By Mode Of Travel		
		AIR	SEA	LAND
2001	2537282	87.1	0.9	12.0
2002	2384364	81.9	0.6	17.5
2003	2726214	83.1	0.5	16.4
2004	3457477	85.6	0.5	13.9
2005	3918610	86.5	0.4	13.1
2006	4447167	87.1	0.6	12.3
2007	5081504	88.4	0.6	11.0
2008	5282603	89.1	0.7	10.2
2009	5167699	89.8	1.0	9.2
2010	5775692	91.8	0.7	7.5
2011	6309222	92.0	0.8	7.2
2012	6577745	91.7	0.7	7.6
2013	6967601	91.0	0.5	8.5
2014	7679099	86.1	0.4	13.5
2015	8027133	84.5	0.7	14.8
2016	8804411	84.1	0.9	15.0
2017	10035803	79.6	0.7	19.7
2018	10557976	79.6	0.8	19.6
2019	10930355	77.4	0.9	21.7
2020	2744766	79.2	1.5	19.3

Gender Wise Distribution of Ftas in India



During the year 2020 , the gender wise distribution of FTAs comprised of 57.8% males and 42.2% females . The male – female break up of FTAs in 2019 was 58.9% and 41.1% respectively. These table gives the gender

wise distribution of FTAs in India during 2001-2020 . Percentage of arrivals not reporting their gender was quite high in 2001 and 2002 but it gradually decreased from 2005 . It was noticeably low at 0.1 in 2008 and from 2009-2018 , the reporting of sex wise breakup of the FTAs has been almost 100%

CHALLENGES IN TOURISM

- **Unequal Treatment:** There is no equal treatment for all type of employees. Even though men and women are doing jobs in tourism sector fewer career opportunities are being dominated by women while men dominate key managerial positions. Women are underrepresented in managerial and senior positions. Family and care responsibilities are still not equally shared.
- **Poor Pay and Working Conditions:** To speak tourism sector is organized by how hourly rates of pay, over time work without extra money, long working hours of more than 48 hours per week, extraordinarily little or no adequate break during peak season periods, inappropriate management , and leadership styles such as unplanned recruitment, little attention to staff turnover etc. .
- **Pollution:** Now a day's pollution caused by tourists, tourism service provider, supporting industries is becoming a major challenge for the tourism sector.
- **Density of Population and Vehicle:** Due to increased density of population and vehicles the serenity and healthy living of the people are affected.
- **Deforestation:** Home stays have substituted the place of forests which leads to deforestation. →
- **Lack of Interest in Agriculture Sector:** Many agriculturist people are moving to the tourism sector which severely affects the agricultural sector which is a major industry contributing to the economic development of the country.
- **Seasonality:** Seasonal tourism is also an important challenge for the employees in tourism sector.

Following 3 years due to Covid – 19 Pandemic, we have seen an adverse impact on tourism . As the world was facing many problems like restrictions on travels , hotels closed airplanes on ground etc. The United Nation World Tourism Organization (UNWTO) estimated that global international tourist arrivals might decrease by 58% to 78% in 2020 . In many of the world's cities , many tourist attractions around the world , such as museums , amusement parks , and sports venues closed down . In spite of the multiple changes and shocks from natural disasters and economic crises from which the world is still recovering the UNWTO are trying to make changes in tourism sector . The next two decades will be of sustained growth for the tourism industry . International tourist arrivals are set to increase by an average of 43 million a year between 2010 and 2030 . By 2030 , the number is anticipated to reach 1.8 billion . There will also be much change beyond the numbers . Future arrivals will be spread more widely across the globe .The future brings enormous opportunities for tourism to take center stage in the political , social, and economic agenda , seeking recognition for its contribution to economic growth and development .

Tourism has evolved into a global phenomenon – one of the most important economic sector and social activities of our time . Today , it contributes directly to 5% of the world's GDP , one in twelve jobs globally and is a major export sector for many countries , both in developing and developed world .The next 20 years will be of continued growth for the sector .They can also be years of leadership , tourism leading economic growth , social progress and environmental sustainability . To make this possible we need to make tourism a priority in national policy decisions , foster competitive and responsible business models and practices and increase cooperation between the public and private sectors .

CONCLUSION

On the basis of this work , the economic growth which started after independence took momentum after economic reforms were introduced in the economy . The main aim is to achieve economic growth so as to raise the standard of living of the people . There is a need for economic growth even in today's developing and developed countries . For developing countries, it is must because it increases productivity , reduces poverty and unemployment . As the employment and economic growth goes hand in hand then there will be a sustainable growth in the economy . Tourism is seen to be as a way for boosting countries' economic growth, thanks to its positive influence on the economy as a whole . Tourism can lead to economic development through direct and indirect effects . As we know tourism boosts the revenue of the economy, creates thousands of jobs, develops the infrastructures of a country, and plants a sense of cultural exchange between foreigners and citizens. The number of jobs created by tourism in many different areas is significant . Tourism is strongly associated with economic development. The tourism industry is open and promotes the development of many other economic

sectors. Other benefits of tourism include improvement of the balance of payments of countries, the creation of employment opportunities and the enhancement of cultural heritage. We can say that tourism is a very productive activity both for the tourist and the government. As they support each other simultaneously. Also, the government should consider improving the conditions of the country as a greater number of tourists visit their country.

WEBLIOGRAPHY

- <https://journals.sagepub.com/doi/full/10.1177/1354816618793762>
- <https://tourism.gov.in/sites/default/files/2021-09/English%20Tourisum%202021.pdf>
- http://www.ijirset.com/upload/2014/april/29_Impact.pdf

COMMUNITY BASED TOURISM (CBT) AND SOCIAL DEVELOPMENT – A STUDY OF BAROT VALLEY DISTRICT MANDI (HIMACHAL PRADESH)**Mohinder Singh**

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ABSTRACT

Community Based Tourism is gaining importance day by day all over the world. It is a new type of tourism which includes the resident community of that area to facilitate the tourist and to let them know about the culture of the community's native place. Community based tourism emerges from a community development strategy by using tourism as a tool of local community development. This is an alternative to mass tourism. Through community tourism local earn their essential livelihood by providing facility of transportation, accommodation and other ancillary services to tourists. Community based tourism enables tourists to discover local areas, cuisine, wildlife, traditional cultures, rituals and traditions. Through community based tourism local community member will also become aware about the values of their community. Community participation in the tourism planning process is advocated as a way of implementing sustainable tourism. Present study is focused on the Barot Valley District Mandi (Himachal Pradesh). Present Study shows that how local community are engaged in different kind of services to facilitate tourists like accommodation (Home Stay), Transportation, Guiding, Angling etc. through Public Private Partnerships (PPP).

Keywords: Community based tourism, Community development Public Private Partnership (PPP)

INTRODUCTION

Community based tourism is a form of tourism which aims to include and benefit local communities, particularly indigenous people and villagers in the rural. For instance, villagers might host tourists in their village, managing the scheme communally and sharing the profits. There are many types of community tourism projects, including many in which the 'community' works with a commercial tour operator, but all community projects should give local people a fair share of profits and a say in deciding how incoming tourism is managed. Community based tourism is travel to local indigenous communities that have invited outsiders to experience their customs, food, lifestyle and set of beliefs. These communities manage both the impacts and benefits of this tourism, strengthening their self- governance, economic alternatives and traditional ways of life in the process. Community based tourism enables the tourist to discover local habitats, wildlife and celebrates, respects traditional cultures, rituals and wisdom. The community will be aware of the commercial and social values placed on their natural and culture heritage through tourism and this will foster community based conservation of these resources. Governments of developing countries have struggled for many years to promote economic growth in mountainous, landlocked areas inhabited by ethnic minorities that are considered to be behind the mainstream national culture and economy. Many of these areas are inconveniently located in relation to important trade routes, which limit those mountain communities ability to compete with urban regions in the trade of cash crops or manufacturing product. As a result numerous countries have develop tourism in these economically depressed mountain regions in order to enhance the micro-level social and economic wellbeing of the inhabitants. Communities in a tourism initiative appear to be closely linked to the derivation to the livelihood and other benefits from the initiative to that same community. Tourism in its many form and they take account of and address the needs of communities in all situation. It may not be sufficient or effective for key tourism stakeholder to consider only particular segments of society such as the poor can be of benefits to community at large in all setting and should be considered, where appropriate in this wider perspective. A primary concern of the Community based tourism industry is the action of conveying net livelihood and economic, social and environmental benefits to communities and their member's in responsible and sustainable manner. These benefits can be said to fall into four broad categories; Economic, Environmental, Social culture and Building of the skills and influence.

ECONOMIC

Direct employment opportunities like administration, guiding, tours and transport, construction, hospitality, management, accommodation shopping, food and beverages outlets.

- 1 Indirect employment opportunities like environmental management, entrepreneurs, other secondary industries.
- 2 Supports the development of multi-sector or mono-sector non-profit enterprises.
- 3 Provides alternatives to changing or fading traditional industries.
- 4 Increase land values and thus rates payable to council for community services.

ENVIRONMENTAL

- 1 Improves environment (Changes in subsistence leading to less degradation of natural resources)
- 2 Encourages awareness and appreciation by the community of natural assets, environment and other resources on which tourism relies.
- 3 Enhances management and stewardship of natural resources.

SOCIO-CULTURE

- 1 Provides and stimulates infrastructure development like roads, communication, healthcare, education, public transport, access to drinking water and food supplies.
- 2 Increase safety and security.
- 3 Facilitates workforce development like rights and conditions.
- 4 Mutually beneficial to all stakeholder in the community.
- 5 Creates opportunities (broadening of idea horizons)
- 6 Promotes cultural understanding.
- 7 Preserves cultural and social heritage and local languages or dialects.
- 8 Supports and preserves local and unique crafts and skills.
- 9 Creates a sense of wellbeing.
- 10 Promotes greater cross-institutional understanding.

BUILDING OF SKILLS AND INFLUENCE

- 1 Influencing and enforcing government policy.
- 2 Skills enhancement like training related to administrative, service industry, maintenance, guiding.
- 3 Building capacity collectively and individually.
- 4 Fosters empowerment gender and community; social, financial, political and psychological.

Government are now more motivated to play an integral and collaborative role in tourism planning and management and the private sector requires government assistance to ensure the sustainability of tourism. Sustainability issues effecting tourism must be high on the agenda of governments as governments agencies have control over a wide range of features that effect the maximization of benefits tourism can deliver to communities. Government has the ability to influence profoundly the positive and negative socio-economic and environmental effects of tourism. Land use planning and land management, labour and environmental regulations, skills training and capacity building, the provision of essential structure and social and environmental services including health, safety, waste, disposal, energy supply and water provision are all vital components in determining the type and level of benefits derived by communities. The international tourism industry is made up of largely small to medium enterprises (SMEs) and governments are also able to support tourism through marketing, information services, education, advice and through public private partnership. NGOs have numerous positive roles to play in the delivery of benefits to community through tourism initiatives; these roles range from investment and equity holding in projects to capacity building, advocacy, campaigning and consultancy. The inclusion of NGOs as one of many stakeholders in the processes and management of tourism initiatives can bring about more sustainable and prolonged benefits to communities. NGOs have vital role to play in building civil accountability, consultancy, providing full spectrum alliances increasing networking, resourcing sharing and deep engagement.

REVIEW OF LITERATURE

Community participation in a tourism initiative appears to be closely linked to the derivation of livelihood and other benefits from the initiative to that same community (Murphy 1985). A Community approach (1985) was a catalyst for discussion in this area and provided an important platform for debate and change at a key stage in the development of the tourism industry. At a time when leisure travel was expanding in terms of both visitor numbers and the amount of more easily accessible destinations, the emphasis on considerations such as local initiative, a tourism product being in accord with the community and local benefits being integrated into the principles of tourism planning and management was refreshing and stimulating (Blank 1989; Haywood 1988). A community sense of ownership, feeling of responsibility and practical involvement in tourism has since been

heralded by researchers and practitioners as central to the sustainability of tourism and of great importance to planners, managers and operators (Boyd & Singh, 2003). Murphy and Murphy (2004) suggest four function of business management (planning, organization, leadership and controlling) and present a combined business management and collaborative planning model for tourism development. They argue that by adopting the business principles outlined in the book communities will be better placed to develop tourism potential and benefit in the global marketplace. The publication provoked strong reactions and stimulated a significant exchange of views (Murphy, 2007) went as far as suggesting that the book was contradictory and uncritical in its presentation of the four functions and that the model presented for bridging stakeholder gaps needed more application and through testing before it could be claimed to be a paradigm. It responded by reasserting that the four key business management functions presented in the book are an artificial division of what should be regarded as a continuous management process. Furthermore, he provided a clarification of the synergies that exist between regular business and community tourism management and that they were four case studies examining the model and its major component parts, bringing depth, reality and credibility to the text. Regardless of strength and weaknesses of Murphy and Murphy book (2004). In 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, it was recognized that the tourism industry could contribute towards development of the community (United Nations (1992, 1997). Recognition and expansion of this theme has been taken up by the organization including the United Nations Development Program (UNDP), Tourism concern , the Eco - Tourism Society, the Association of Caribbean States, Fair Trade in Tourism South Africa, by researchers and commentators (Singh, Timothy & Dowling,2003).Whether the tourism initiative is located in a developed or a developing country it is argued that the involvement of the communities and a significant level of community participation at all stages in the initiative gives stakeholders a better chance to have an influence in shaping community development and to deliver the maximum benefits. In developed and developing countries the majority of government agencies around the world have historically for the most part, taken a back seat in tourism development, seemingly happy to allow the private sector to drive forward the industry in their countries and regions. They have been equally happy to collect taxes from successful operations, providing little or no assistance to struggling initiatives. As a result benefits derived by communities from tourism have in the past been created and received more by accident than design or in a few cases have been engineered by more philanthropically minded private tourism businesses or NGOs (Ashley, 1998). More recently, a range of factors have contributed to government agencies taking greater interest, committing funds and time to collaborative projects and playing a crucial role in the planning, development and management of tourism initiatives.

RESEARCH METHODOLOGY AND FINDINGS

Present study is based on primary data collected through questionnaire. There were 200 respondents of Barot Valley District Mandi (Himachal Pradesh). The survey consisted of five opinion statement responses to each statement was evaluated on two point scale of agree and disagree, opinion were assessed through statistics using frequency and percentage of respondents on each statements. Respondents were Home Stay owner, Taxi operator Guides and Shopkeepers.

FINDING AND DISCUSSION

Respondent's perception on Community Based Tourism from the first opinion out of 200 respondents 95% were agrees with the view that community based tourism leads to rural development. Infrastructure development is possible through it and small hotels, motels, inns, parking, camping sites, eco club etc. are developing with the outcome of community based tourism. 87% were agree with the view that community based tourism leads to social empowerment, community is earning well as according to their needs and services provided by them. Community based tourism leads to economic development because locals are the main service provider to the tourists. 80% of people responded that community based tourism is instrumental in environmental conservation because community is belongs from that place and if there will be any degradation in environment than that will affect the livelihood the community at large scale. Most of the locals were agreed that they tell their clients (Tourists) about the importance of environment. 60% of the respondents said that they are involving in the grass root level of decision making. Local participation and involvement shows that community based tourism has the positive image in rural areas and through it they can make suitable policies for the better governance in tourism sector. They are involved in the issues related to give the clearances to a new project in their respective area. 85% agree with that community based tourism boosts the local handicraft industry and people know their handicraft through community based tourism. People are also aware about their own handicraft and they are preserving it for coming generation.

CONCLUSION

It is concluded from this study that the community based tourism is the mode of development in Himalayan region where other industries like agriculture, pharmacy, automobile and government job is limited. It is the toll of development. Home stay are the best option for tourists to stay and for operators it's easy to open and people enjoy local cuisine. It helps in the promotion and protection of handicraft industry because it is an important component of community based tourism. Community based tourism improved the standard of living by providing livelihood to community. Revenues generated by tourism are needed to be distributed equally in the communities. It is alternate to mass tourism. It helps the society at very first level, sustain the natural resources and protect the environment. Communities are rich local knowledge and having a strong relation with the cultural heritage of their native area. Tourism offers them economic opportunity in their own place. It generates a good volume of money in their area and develops the whole society and contributes in the overall regional development.

REFERENCES

- 1 P.E Murphy (1985) *Tourism: A community approach*, Methuen, London, England.
- 2 D.G. Simmons (1994) *Community participation in tourism planning*. *Tourism Management*, 15, pp. 98-108.
- 3 J. Pretty (1995) *The many interpretations of participation*. *In focus*, 16, pp. 4-5.
- 4 S. Singh, D. J. Timothy, R. K. Dowling (2003) *Tourism in destination communities*. CABI Publishing, Oxford, England and Cambridge, USA.
- 5 World Wildlife Fund (2001) *Guidelines for community based ecotourism development*. WWF International.
- 6 Bhatia. A. K. (2001) *International Tourism Management*, Sterling publishing house, New Delhi.
- 7 [Www. Hptdc.in](http://www.hptdc.in)
- 8 U. Blank (1989) *the community tourism industry imperative*. Venture publishing, New York, USA.
- 9 United nation (1992). *Report of the United Nations conference on environment and development, Rio de Janeiro 3-14 June 1992, Vol. 1, Resolutions adopted by the conference, Resolution I, annex II*. New York, USA: United Nations.
- 10 United Nations. (1997). *Nineteenth special session of the general assembly for the overall review and appraisal of the implementation of the agenda 21, Assembly resolution S/19-2, annex of 28 June 1997, paragraph 69*. New York, USA: United Nations.
- 11 United Nations World Tourism organization (2004a) *Indicators of sustainable development for tourism destinations: A guidebook*. UNWTO, Madrid, Spain.
- 12 United Nations World Tourism organization (2004b) *National and regional tourism planning: Methodologies and case studies*. UNWTO, Madrid, Spain.
- 13 Development institute – *Fair Trade in Tourism Paper*. Nottingham, England: Russell Press.
- 14 P.E. Murphy, A.E. Murphy (2004) *Strategic Management for Tourism Communities: Bridging the gaps. Aspects of Tourism series* Channel View Publications, Clevedon, England.

FAMILY IN THE NOVELS OF EUDORA WELTY**¹Mrs. Namita Rupesh Shah and ²Dr. Ulka S. Wadekar**¹Research Student and ²Supervisor, SMT. K. L. Mahavidyalaya, Amravati**ABSTRACT**

Eudora Welty portrays the family as the most redeeming force in Southern culture. Her novels Delta Wedding, Losing Battles, The Optimist's Daughter and The Ponder Heart describe the family's functions of socialization and mutual aid. These novels demonstrate how loyalty to family and pride in family heritage strengthen the individual. According to her, family love is able to transform bitterness into compassion and misunderstanding into knowledge. It is sufficient to sustain the individual through grief, loneliness, and regret. Eudora Welty presents the enduring and cohesive family as the most powerful influence on individual lives. In her view, it is the family which has the greatest effect on human relationships. Family relationships provide resources that can help an individual cope with stress. Eudora Welty's novels foster the conviction that our own kin can be our greatest source of strength and our highest hope for the future.

Keywords: family, love, kin, marriage, devotion.

Southern American authors has produced the literature in which it is consistently evident that family is one of several essential features among Southerners. One of the significant among these writers in the twentieth century is Eudora Welty. Like the other Southern writers, Welty repeatedly explores in her writing the nature of the family: its origins, structures, growth, influence, enmities, affections and complexities. Unlike her contemporaries, Welty engages in extensive, meditative searching into the long, entangled past of family. She wants to discover forgotten secrets to reveal facts about personal identity and familial relationships. Although she is aware of family development for several generations, she concentrates on family in the present involving two generations and their immediate past.

One of the most significant characteristics engendered by this past is loyalty to family. Even after the economic dependence upon relatives has faded, the emotional importance of kin endures. Even with necessity removed, mutual aid and group ritual persist. In Delta Wedding and Losing Battles we see how the family can resolve conflict and bring individuals together to satisfy and preserve the group as a whole. In The Optimist's Daughter we have a closer look at how the love and support of a family enriches the inner life of the individual. Yet, whether or not the institution itself will survive does not really seem to be the issue at stake. Despite increasing evidence of divorce, people are still marrying at a steadily growing rate. Homes are destroyed, but new homes soon take their place. It is the quality of family relationships that is the crucial question. Does family love have value for the individual? Can the family endure change and conflict, and can the original family be kept together? In Delta Wedding, Losing Battles, The Optimist's Daughter and The Ponder Heart Eudora Welty has given us affirmative answers. She has illustrated how family stability and individual enrichment by the family are possible. The family can be our means of maintaining a life style and our encouragement for our expectations. Eudora Welty's novels foster the conviction that our own kin can be our greatest source of strength and our highest hope for the future. Most modern Americans assert their identity by separating themselves from their extended family, that is, their relatives other than their spouses and their children. Southerners like the Fairchilds, however, join the majority of the world's people who define themselves by their family name.

In Delta Wedding when George risks his life on the railroad trestle to save the retarded Maureen, his wife Robbie is convinced that he is more dedicated to his family than to her. She then leaves him to stay secretly with her sister named, Rebel. Finally, with Dabney's wedding imminent, Robbie walks alone the long and hot road back to Shellmound and George. The family welcomes her quietly, without undue fuss, as if her return were quite natural and completely expected. They scold her but do nothing to force a confrontation between Robbie and George. They comfort her, and calmly allow her to vent all her feelings of frustration. They even listen complacently to her insults.

Robbie believes that only her love is worthy of George. Her disdainful opinion of family ties actually reveals some of the complexities and paradoxical strengths of family life. In the Southern family, the kinship network supplements and supports rather than fragments or displaces the nuclear unity. Eudora Welty shows, as in the case of Robbie, that in-laws may be a source of marital conflict. Yet, divorce is not an alternative. Kinship behaviour reinforces the importance of marriage and thereby strengthens it. Eventually, Robbie begins to believe that the Fairchilds will permit George to lead his own life and will not smother his love for her. When she sits at the wedding, studying her husband and pondering his character, she realizes that there is a part of him

that is revealed only to her. Others cannot really invade her special knowledge. In fact, the family can protect the private and inner life of its members, for within this compassionate group, emotions are accepted and unquestioned.

The Beecham-Renfro clan of *Losing Battles* is a multi-generation family living peacefully together under one roof. There are Granny Vaughn, whose ninetieth birthday is being celebrated, Beulah and Ralph, their four children, and one daughter-in-law and her baby. None of them ever question why they should all share the same home. The willingness with which they coexist is evidence of their devotion to each other to preserve the family as a whole unit. The multi-generation households is often closely related to an agrarian economy. For the individual farmer who could not afford to hire labour, it was an advantage to have a large family. Early marriage and a high birth rate were desirable. With each farm or plantation striving for self-sufficiency, there were ample tasks in field and kitchen for many men and women. Their agrarian values demand mutual aid. None of them have the skills or the will to prosper apart from the farm.

They remain together to struggle with perseverance. There is a promise of victory in their multi-generation household. The older generation offers reassurance that change can be endured. The middle generation shows faithfulness in work, and the younger generation provides new energy and hope. These people are different from the typical American family of today. In modern industrial cities, men and women do not have children to keep alive the past or ensure the future. Their children do not kneel down to receive a grandparent's blessing nor do they tend a shrine for their dead grandparents. Family life has its meaning almost completely in the present. This is not the case in '*Losing Battles*'. All the generations of Renfro establish continuity.

A clan gathering is one of Welty's favourite settings, and she uses it to depict the family's fierce concern for one another. The Beecham-Renfro may be poor people, but there is dignity in their deliberate and continual repetition of their family name. There is intense energy and purpose in their extensive preparations, their joy in greeting one another, and their lavish feast. The reunion lasts until the last possible moment, late into the night. Miss Welty is accurate in her portrayal of human nature with a normal amount of jealousy and bickering, but, through it all, the family members delight in one another. When Judge Moody joins the family, Jack is astonished that everyone is forgiving the Judge for having sentenced him to prison. Ralph tells Jack that forgiveness is just a natural part of the reunion. This day is more than a birthday party. It is a time of spontaneous, happy, and often hilarious renewal. Judge Moody becomes a friend. Jack resumes his marriage to Gloria and meets his baby daughter. New relationships are begun, thus insuring the family's future. Old relationships are strengthened, thus revitalizing it.

In *Delta Wedding* and *Losing Battles*, the author paints sprawling landscapes of two large families. In *The Optimist's Daughter*, she unveils a detailed portrait of one character and the importance of family in her life. In *Delta Wedding* and *Losing Battles* we see how the family can absorb change, resolve conflict and draw individuals together to satisfy and preserve the group as a whole. In *The Optimist's Daughter* we have a closer look at how the love and support of a family enriches the inner life of the individual.

The Optimist's Daughter is primarily concerned with family relationships. The central character of this novel, Laurel Mckelva is a fabric designer. She lives in Chicago but coming originally from Mount Salus, Mississippi. She visits back to Mississippi to accompany her father Judge Mckelva who is hospitalized for a complicated operation of eye. The operation proves unsuccessful and the father dies unexpectedly. He has been remarried only before one year but that period has proved sufficient time for his spiritual death. Laurel has always been committed to her family, even though she hasn't returned home regularly. She last has seen her father a year and a half before at his wedding to Fay.

Fay's family, the Chisoms, remind Laurel of the Dalzells, the weeping and joking clan who ate out of shoe boxes in the hospital waiting room. Neither the Chisoms nor the Dalzells are fighting to maintain their vitality as are the Renfros and the Fairchilds. They lack the Renfro and Fairchild pride and heritage. The Dalzells ' laugh together as they plan to pour water down the throat of their dying, thirsty grandfather. The Chisoms don't discuss the Judge as a man or the sadness of his death with Fay. They are only concerned with the showiness of the coffin, the size of the crowd, and whether Fay's tears came at an appropriate time. Both the Dalzells and the Chisoms are crass and callow. Laurel does not want to belong to this category. She struggles to analyse her family.

Laurel has ample proof that her father had not forgotten her mother. He spoke of her constantly with friends and even in front of Fay. He told stories to describe her. He regarded the house, its furniture, and the plants as if they all still belonged to Becky. Her parents' relationship provide security and value for Laurel's life. Their marriage is proof that something beautiful is possible between people and that it can last. Just before her father's

coffin is closed, Laurel insists that he loved her mother, as if this fact can assuage her loss. Widowed after only a year of marriage, Laurel is totally alone now. Laurel compares love to the juncture of the Ohio and Mississippi rivers that she and Philip saw on their wedding trip. Even though both Phil and that landscape are now out of her sight, she knows with utter certainty that both still exist. Death is not the end of a kinship. She can still dream and think about her parents and Phil. She can still have affection, compassion, and devotion for them and be comforted by the feelings they displayed for her. Love of family has always been sufficient to give purpose to Laurel's life. Memories are all she needs to take back to Chicago all that is required for the continuance of that love. She is surrounded by people she has known her entire life-the teacher she had in grade school, the doctor who cared for her parents, and the same maid who cleaned her house throughout the years. Laurel does not have aunts, uncles, cousins, or her own children. Mount Salus provides her with the love of an extended family.

In *The Ponder Heart*, Uncle Daniel Ponder may not have been too smart, but he has a big heart. He loves to give things away - flowers, ice cream, a white-face heifer calf, a pickup truck - anything he has. He has gifted Edna an entire hotel, which she operates during the events of the story. Edna Earle leads the reader to a happy acceptance of Uncle Daniel. She spills out the family secret one by one. Through Edna Earle, the reader learns everything significant. Edna Earle blames the Ponder heart for what happens to Uncle Ponder as the result of his extreme generosity. Uncle Ponder does not care about property but he loves being happy.

After reading the novels of Eudora Welty the question arises in our mind, what is the future of family in our nation? Though the youth have respect for and fear of parents yet they want parental support for achieving their individual interests. The family will continue to exist. Woman's position of power within the family will further improve with increase in gainful employment. Women will get more freedom due to their education and increasing economic independence. When life gets hard and starts to grip away from your control, the kind words of your mother, spouse, or siblings calm your soul and give you the strength and courage. Children feel secure and loved when they have strong and positive family relationships. The family provides emotional support to an individual as well as plays a major role in the formation of one's personality. Family relationship is important for a person at every stage of life. Positive family relationships help families resolve conflict, work as a team and enjoy each other's company. Stress process theory suggests that the positive and negative aspects of relationships can have a large impact on the well-being of individuals. Family relationships provide resources that can help an individual cope with stress, engage in healthier behaviours, and enhance self-esteem, leading to higher well-being. Miss Welty knows that those human traits which comfort us best throughout life are tenuous and fragile. They must be constantly cultivated. She believes that it is the family who can keep alive trust in one another.

WORKS CITED

1. Welty Eudora, *Delta Wedding*, New York: Harcourt, Brace & World, 1946
2. *The Ponder Heart*, New York: Harcourt, Brace & World, 1954.
3. *Losing Battles*, New York: Random House, 1970.
4. *The Optimist's Daughter*, New York: Random House, 1972.
5. Weston Ruth, *Gothic Traditions and Narrative Techniques in the Fiction of Eudora Welty*, LSU Press, 1994.
6. Gyax Franziska, *Serious Daring From Within: Female Narrative Strategies in Eudora Welty's Novels*, London: Greenwood Press, 1990.
7. Hoffman Frederick J, *The Art of Southern Fiction: A Study of Some Modern Novelists*, London and Amsterdam: Southern Illinois University Press, 1967.
8. Westling Louise, *Sacred Groves and Ravaged Gardens: The Fiction of Eudora Welty*, Carson McCullers and Flannery O'Connor, Athens: University of Georgia Press, 1985.

DIGITAL INDIA – A ROADMAP TO SUSTAINABLE DEVELOPMENT GOALS**Miss. Neelam**

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ABSTRACT

The whole world is racing to promote business, politics, entertainment etc. online. Achieving sustainable development goals is the task of all countries, both developed and developing. At the same time, almost all countries are moving to a digital economy, with the core of e-commerce. One such programme is 'digitalization' a crucial Part in "digital India Programme". Digital India is an innovative thought of Hon'ble Prime Minister Shri Narendra Modi of India to integrate the government functionaries and the people of India. The drive behind the concept is to build participation, transparent and responsive system. The digitalization of economic activities and trade is of direct relevance to several of these Goals. But its implementation proved to be a great challenge. There are many roadblocks in the way of its successful implementation like digital illiteracy, poor infrastructure, low internet speed, lack of coordination among various departments, etc. These challenges need to be addressed in order to realize the full potential of this Programme. This paper attempts to examine all aspects of employing digital technologies in accelerating the processes of 17 UN Sustainable Development Goals.

Keywords: E-Commerce, Digital India Programme, Sustainable Development.

INTRODUCTION

The government launched several major and minor e-governance and digitalisation programmes which were later brought into the fold of Digital India Programme. During 1st July 2015 Modi government's flagship programme 'Digital India' was introduced. The programme has one mission and one target that is to take nation forward digitally and economically. The objective was to make Government services easily available to the citizens electronically by improving its online infrastructure all over the country. The process would be structured to increase internet connectivity to make the country digitally empowered. It helps to reach out to the masses and encourages them to use technology in their daily lives and reducing paper work. The initiative aims at connecting rural India with the help of high-speed internet connectivity. It will push the usage of technology to connect and empower people in areas relating to health, education, labour and employment, commerce, etc. It is one of the biggest steps of the government to motivate the citizens of the country and connect our economy to the world and setting itself on the path to achieve the UN 17 SDGs by 2030.

OBJECTIVE OF STUDY

1. To identify the concept of digital India and its affect on SDGs.
2. To analyse the Sustainable Development Goals relevance to digital India.
3. To study the contribution of digital India to achieve SDGs.
4. To find the challenges towards achieving SDGs and to find the future prospects of it.

RESEARCH METHODOLOGY

This is a descriptive research which helps to understand about the Digital India campaign and its effects so far and to develop a model to achieve Sustainable Development Goals with the pillars of Digital India. The type of data used is secondary data obtained from sources such as research papers, newspaper, journals and magazine articles etc

DIGITAL INDIA PROGRAMME

Digital India is a awning initiative that aims to transform India into digitally empowered society and knowledge economy. The theme can be explained as Indian Talent (IT) + Information Technology (IT) =India Tomorrow (IT). Digital India is rooted in three vision areas and nine pillars. Three vision areas are 'Digital Infrastructure as a Utility to Every Citizen', 'Governance & Services on Demand' and 'Digital Empowerment of citizens'. These key areas are expected to be achieved by nine pillars of DI that include Broadband Highways, Universal access to mobile connectivity, Public Internet access programme, e-Governance: Reforming government through technology, e-Kranti – electronic delivery of services, Information for all, Electronics manufacturing, Information technology for jobs and Early harvest programmes. Out of these nine pillars, four are about provision of Internet and access, and the other pillars focus on providing governance and services on demand. Digital India programme has received appreciation world over for its innovative approach of mobile first and involvement of citizens in co-creation of next generation public services coupled with robust approach towards

planning, monitoring and service level strategies. The announcement of PM about initiation of Digital India was followed by a spate of other initiatives such as launch of MyGov, Biometric attendance, Jeevan Praman and GeM and Swayam Portal being some of the recent ones.

Now, a summarised glimpse of initiatives launched since the year 2014 would give a wiser insight into the core functionalities and features of Digital India programme.

1. **MyGov**- A platform to enhance citizen engagement in government by soliciting ideas and suggestions. (mygov.in)
2. **E-Hospital**- A platform that connects patients, physicians, and hospitals to give citizens with a one-stop solution. (<https://www.nic.in/projects/e-hospital/>).
3. **DigiLocker**- A platform that provides a "private place in the public cloud" for storing, issuing, and verifying digital documents and certificates. (<https://digilocker.gov.in/>).
4. **Jeevan Praman**- A biometric-enabled digital service for protecting the life certificate for pensioners. (<https://jeevanpramaan.gov.in/#>).
5. **Aadhar**- The Unique IDentification Authority of India (UIDAI) issues residents of India with a 12-digit number that serves as the basis/primary identification for a variety of government benefit initiatives and programmes. (<https://uidai.gov.in/your-aadhaar/about-aadhaar.html>)
6. **Direct Benefit Transfer (DBT)** - This plan involves the direct payment of subsidies to the beneficiaries' bank accounts, with no middlemen. This is now supported by the Jan Dhan Darshak smartphone app, which will assist in locating financial touch points across the country.
7. **Government e-Marketplace (GeM)** - A one stop Government e-marketplace to facilitate online procurement of common used goods and services required by various government organizations and PSUs (<https://gem.gov.in>).
8. **UMANG (Unified Mobile Application for New Age Governance)**- A unified mobile platform for all Indian people to access central, local, and other government services, including Aadhar and DigiLocker. It is accessible via a mobile application, the web, IVR, and SMS. It is supposed to change the way an Indian citizen accesses government services today. (<https://web.umang.gov.in/web/#/>).

A blatant listing of Digital India initiative would be irrelevant, until these initiatives are not mapped to the governance goals, defined by SDGs. Therefore, as a formal acknowledgement of critical position accorded to digital technologies in governance landscape of India, parallels have been drawn between various SDGs and Digital India initiatives in the subsequent section.

Transition from MDGs to SDGs

The SDGs are a set of proposed global development goals that governments throughout the world are expected to accept. The global sustainable development agenda post-2015 will be defined by 17 objectives and 169 indicators. India has made headway in halving poverty, HIV/AIDS, drinking water, and slums while lagging behind on education, health, nutrition, gender equality, sanitation, and job creation. Now that the SDGs have replaced the MDGs – with a broader scope – India has already set more ambitious objectives for achieving SDGs in both the social and economic sectors, as well as inclusion and sustainability. For sustainable development to be achieved, it is crucial to harmonize three core elements: Economic growth, Social inclusion and environmental protection.

Sustainable Development Goals (SDGs) - Relevance for Digital India

Sustainable development has become a major focus of international public policy since the United Nations Declaration on Sustainable Development in 2015, endorsed by all 193 member countries. It identifies three core objectives for human development – economic growth, social inclusion and environmental sustainability. The collective pursuit of these objectives can help the world achieve 'development that meets the needs of the present without compromising the ability of the future generations to meet their own needs.' India as a signatory to the Sustainable Development Goals (SDGs) Declaration has proactively initiated the Digital India programme, with an emphasis on providing digital infrastructure as a core utility, on-demand digital services, and digital empowerment to all citizens. All Digital India initiatives leverage Information and Communication Technologies for Development (ICT4D) to offer citizen-centric, business-centric, and government-centric services through mission-mode projects. SDGs are comprehensive and focus on **five Ps** – people, planet, prosperity, peace and partnership as shown in figure:



Agenda 2030 is a set of 17 specific goals that must be achieved by 2030, including poverty eradication, ending hunger and malnutrition, health and well-being, education, gender equality, water and sanitation, energy, growth, resilient infrastructure, inequality reduction, sustainable production and consumption, urbanisation and habitat, climate change, life on land, life below water, peace and justice, and global partnerships. These are critical issues that demand immediate and comprehensive treatment.

Vision of Digital India Programme

The Above Goals are aligned with the Digital India Vision which is centred on three Key Areas:

- **Digital Infrastructure as a Utility for Every Citizen:** As per this vision, the Indian villagers are digitally connected through broadband and high speed internet. Bank accounts will be given priority at individual level. People will be provided with safe and secure cyber space in the country.
- **Governance and Services on Demand:** Government services will be available online where citizens will be ensured easy access to it. Transactions will be made easy through electronic medium.
- **Digital Empowerment of Citizens:** To provide universal digital literacy and make digital sources easily accessible. The services are also provided in Indian languages for active participation.

It is planned to set up enabling infrastructure for digital identity, financial inclusion and ensure availability of common services centres.

Contribution of Digital India to Achieve SDGs

The 1st commonality between Digital India and SDGs is that the vision of former insists on overall wellbeing and digital empowerment of its citizens that resonates well with the spirit of SDGs. Even the nine pillars of DI programme echoes the spirit of 17 SDGs in one way or another. There is direct linkage between the SDGs and Digital India initiatives.

For instance, MGNREGA – one of the world's largest rural employment guarantee programme, which guarantees minimum 100 days' employment on demand to rural poor, is directly covering the Goal 1 – End Poverty in all its forms everywhere. NREGA Soft Payments, an initiative under Digital India, enables wages being paid using Aadhaar based Direct Benefit Transfer (DBT). This ensures better management of MGNREGA and timely payment of wages.

DBT is a programme for effecting direct transfer of entitlements like scholarships, pensions, wages, etc. to beneficiaries across the country. Because each beneficiary is electronically authenticated, DBT eliminates leakages in payments such as fake or ghost beneficiaries. More crucially, the DBT platform improves citizen benefit disbursement efficiency, accountability, and transparency. DBT also backs important initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY), which allows funds to be transferred to more than 270 million newly created no-frills bank accounts, initiating a transformation to a "less cash economy" and decreasing, if not eliminating, corruption.

Similarly, all other SDGs have direct intervention or indirect support from Digital India – ranging from food security (Targeted Public Distribution system – an end-to-end online PDS that automates and makes transparent all operations from procurement to final disbursement) to health (e-Hospital for healthcare services and online registration system for appointment in hospitals), education (SMS-based Mid-Day Meal monitoring, and e Basta

for digital school textbooks), gender equality (Beti Padhao, Beti Bachao scheme for empowering girl child), drinking water & sanitation (Swachh Bharat app to monitor waste management), rural energy services (GARV application to track progress of rural electrification and DBT PAHAL helps in distribution of LPG cylinders in rural areas to provide clean and efficient cooking fuel), sustainable growth (Common Services Centres for village level entrepreneurs), entrepreneurship through Start-Up India (incubation centres and scholarships for PhD students), resilient public infrastructure (Meghraj – Government of India Cloud provides on demand computing and storage infrastructure, BharatNet and National Knowledge Network provide high-speed broadband connectivity), inculcation of innovation (DigiLocker provides access to authentic documents from single source of truth), and inclusion of marginalized groups through Stand-Up India app (for facilitating loans) for the differently-abled citizens, among many others.

SDG 17 - Strengthening the mechanisms of implementation and partnerships – has the greatest direct connection to Digital India. The JAM (JanDhan, Aadhaar, and Mobile) trinity, the Unified Payment Interface (UPI), the Bharat Interface for Money (BHIM) app, e-Trade MMP, mMyGov, and the Electronic Transaction Aggregation & Analysis Layer (eTAAL) are all part of Digital India. In the areas of financial inclusion, capacity building, trade, multi-stakeholder partnerships, data monitoring, technology, and accountability, they directly contribute to improving SDG 17 achievements.

RESULTS AND FINDINGS

The Main Challenges for the Sustainable Development of India are Categorized As

- (i) **Defining Indicator:** There are few metrics to quantify the outcomes of sustainable development in India. According to government figures, 86 % of Indians have access to clean drinking water. However, the high number of patients with water-borne diseases and deaths from diarrhoea plainly demonstrate that this is not the case. It signifies that no safe drinking water was available.
- (ii) **Financing Sustainable Development Goals:** The union government has indicated that unless states contribute a significant amount of their resources to the social sector, there would be a significant financing gap. High rates of growth and redistribution are insufficient. Despite substantial economic growth in 2010, India alone houses 1/3 of the world's extreme poor, according to the United Nations MDG 2014 report. We may conclude from this that, aside from domestic taxes, private finance might be a critical source of funding for the SDGs.
- (iii) **Monitoring and Ownership:** One of the most significant obstacles to maintain sustainability is ownership. According to current sources, NITI AAYOG plays an important role in progress monitoring. The AAYOG, on the other hand, has reservations about being able to do so. Furthermore, if states are to take the lead, ownership is required not just at the national level, but also at the state and local levels.
- (iv) **Measuring the Progress:** Last but not least, assessing accomplishment progress is a critical problem for India's sustainable development. Because of data scarcity, government choices, periodicity challenges, and limited administrative data coverage, assessing sustainable development is nearly hard.

These 4 challenges aside, the SDGs provide broad goals and targets, it is important to remember that it will be up to national and state governments to identify priorities, determine appropriate locally relevant policies, harness innovation, and ensure that a plan for implementation, monitoring, and measuring is in place. Only then will the 'S' in SDGs stand for success. The credo “Sabka Saath, Sabka Vikas” (Participation of All, Growth for All) can forge ahead globally, with Digital India offering its support on a global platform – with Analysis (policy, government process re engineering ,multi-purpose platforms and efficient decision support systems), Advocacy (open standards, open data, grievance redressal and Information, Education & Communication (IEC)) and Action (development of capacity and content, rapid deployment and replication of successful e-governance projects, multi-stakeholder partnerships and international cooperation).

CONCLUSIONS

Digital India Programme is a game-changing tool to the present and future needs of society and their proper implementation can be synergised to the sustainable development goals. The existing digital initiatives spearheaded under the Digital India Programme have accomplished a lot in SDGs, particularly in health, education, labour and employment, commerce, etc. However, these digital initiatives must not wither away as erratic experiments. To sustain these digital initiatives, the governance agencies must provide citizens with what exactly the need and aspire rather just an aped model where ‘one size fits all’. However the goal is still far away since most of the nine pillars of digital India mission are facing serious challenges in implementation. It is imperative that focused persistent attention must be given to each and every pillar so that this programme does

not end up in failure. In fact we all should be mentally prepared for the change and be ready to face the challenges in implementing this policy, only then it would be possible to make this vision in reality and forward a step towards SDGs.

REFERENCES

1. SDG India Index & Dashboard 2020-2021
2. Gupta, A. (2019). Making India Digital: Transforming towards Sustainable Development. Journal of Engineering & Technology, Vol.9, No.2 (2019) ISSN: 2231-4210.
3. Daptardar, V., Gore, M.(2019) Smart Cities for Sustainable Development in India: Opportunities and Challenges. European Journal of Sustainable Development (2019), 8, 3,133-144.
4. Malhotra, C. (2018). Role of digital technologies in Governance. Indian Institute of Public Administration New Delhi (2018).
5. David, M.P.C.(2018). Sustainable Development Goals (SDGs)-Challenges for India. Indian Journal of Public Health Research & Development, Vol.9, No.3 (2018), pp 1-5.
6. Digital India Retrieved from <http://www.indiacelebrating.com/government/digital-india/>
7. www.digitalindia.gov.in
8. www.wikipedia.org

ACHIEVING GREEN ECONOMY THROUGH SOCIAL COST BENEFIT ANALYSIS**Mrs. Nisha R. Deodhar**

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ABSTRACT

Green Economy is adopted for reducing environmental impacts of economic activities for sustainability. Social Cost Benefit Analysis (SCBA) is a need of an hour, to support green economy. This is one of the best tool to evaluate the value of money particularly of public investments in many of the primary activities. These activities are facing the problems due to climate change and customer's attitude. SCBA is an aids in decision making with respect in changing design, methodology and closely interrelated Projects. SCBA has become important among economists and consultants in recent years Some of the benefits of adopting this policy are- 1] Support growth and poverty reduction, which is basic SDG of 2015 and 2030 2] Lowest cost and maximum benefits. 3] Enhancing and Empowerment of Citizens 4] Social Sustainability Works with Economic and Environmental sustainability 5] Fostering more resilient and peaceful communities

Present scenario of Agriculture sector shows is transformation from traditional to modern methods of sustainability. Use of drip irrigation, Sprinkler system, Crop Combination and crop rotation methods and use of step farming are already in use for sustaining agricultural methods. But these methods are not sufficient; hence use of Hydroponic Farming, Such farm system generates average revenue of \$21.15 per square foot. Aquaponics-Average earns Rs. 1.75 lakh from annual expenditure of Rs, 25,000. Floriculture-Such farm system generates average revenue of \$21.15 per square foot Agricultural Product Dehydration- gives roughly ₹ 3.50 Lakh/ unit. For the Agro-Tourisme centres government of India even gives subsidies.

In Maharastra Talegaon near Pune has became the a major centre of floriculture. Green house and poly house cultivation methods are practiced and this region contributes to 60 % of India's flower export and 40 % to other megacities in India. Rs. 6,83,522/- is the net revenue generated per poly-house at Talegaon. This region has become the hub of floriculture, and also providing 80% of employment to natives especially women workers. This is a clear indication that adopting Floriculture as alternative source of green business and indirectly supporting Indian economy for attaining the sustainable goals.

Keywords: Hydroponic, Aquaponics, Floriculture. Poly House.

INTRODUCTION

The term green economy was first coined in a pioneering 1989 report for the Government of the United Kingdom by a group of leading environmental economists, entitled Blueprint for a Green Economy (Pearce, Markandya and Barbier, 1989). UNEP in 2011 has defined this term as "One that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" Green economy has become frequently used term in recent years. SDGs include every aspect of individual as well as holistic upliftment of countries in world

Social Cost Benefit Analysis is a tool for evaluating the value of money, particularly of public investments in many economies. It aids in decision making with respect to the various aspects of a project and the design programmes which will benefit local people and also the nation.

Agriculture has remained as backbone on Indian economy. Changing climate, reducing land areas, fragmenting of land holding, frequently modifications in government policies and so on are the reasons reducing agri-produce and also the interest of farmers. Farmers suicided has even increased. The changing scenario of agriculture sector has diverted farmers to find out alternative farming techniques and agriculture produce. New techniques like drip-irrigation and sprinklers has helped in soil erosion and retaining soil fertility. The new ways of cultivation with crop combination and crop rotation, step and strip farming has helped the farmers up-to certain extent. The concept of Agri-tourism has even given a dual source of income to farmers. But by adopting traditional cultivation with new pattern and advance means of technology has helped the individual farmers and increased exports.

Floriculture is one of such newly introduced business activity through cultivation of flowers in less space and using poly house and green house technique. The lock down has not stopped farmers from cultivating floriculture products. Cultivation In the year 2020-2021, this cultivation has given Rs. 575.98 Crores/77.84 USD Millions by export of 15,695.31 MT of floriculture products. Agricultural and Processed Food Products Export Development Authority (APEDA), is responsible for export promotion and development of floriculture

in India. Floriculture crops like gerberas, carnation, etc. are grown in green houses. The open field crops are Chrysanthemum, Roses, Gaillardia, Lily Marigold, Aster, Tuberos. Major Export Destinations (2020-21): U S A, Netherland, U Arab Emts, U K, and Germany were major importing countries of Indian floriculture during the same period. The estimated area under flower growing in the country is about 65,000 hectares. Maharashtra is equally contributing to the exports, hence researcher concentrated on floriculture development at Talegaon region of Maharashtra and tried to verify whether this business activity is really cost effective?

RESEARCH METHODOLOGY

PRIMARY DATA

1) Personal visit to Talegaon green house of Maval Taluka. Pune.

2) Interview with green house owner.

SECONDARY DATA

1] Use of websites

2] Reference of books. Articles, news paper

OBJECTIVES

1] To study the development of floriculture in India and Maharashtra.

2] Reasons of Floriculture hub at Maval taluka of Pune District.

3] To assess the need for poly house and profit earned per poly house, a case study.

4] To know the constrains faced by farmers at Talegaon in carrying out floriculture,

5] Solutions.

DISCUSSION

1] To Study the Development of Floriculture in India and Maharashtra

Flowers has aesthetic value as well as social and economic value. By considering all this, in India ranks second in the world as far as area under floriculture is concern which accounts to nearly 64,768 hectors and seven largest in the world as far as flower production is concern. Floriculture products mainly consist of cut flowers, pot plants, cut foil age, seeds bulbs, tubers, rooted cuttings and dried flowers or leaves. The important floricultural crops in the international cut flower trade are rose, carnation, chrysanthemum, Gargera, Gladiolus, Gypsophila, Liastris, Nerine, Orchids, Archilea, Anthuriu, Tulip, and Lilies. Andhra Pradesh (19.1%), Tamil Nadu (16.6%), Madhya Pradesh (11.9%) and the other states like Maharashtra, Karnataka, West Bengal, Mizoram, Gujarat, Orissa, Jharkhand, Haryana, Assam and Chhattisgarh are states contributing to floriculture products. Floriculture comprises both traditional and modern flower crops. The traditional flowers are grown in open-air conditions. The modern flower crops are grown in controlled conditions (Green Houses)

Maharashtra has nearly 3,356 hectors of area under flower production. Lonavla, Talegaon belt, Maval taluka in Pune district as well as Satara and Nashik districts also contribute to floriculture development. Major variety of flowers cultivated in Maharashtra are marigold, rose, tuberos, chrysanthemum, gladiolus, aster, jasmine, kagda, Mogra, gerbera, carnation etc. Maharashtra state having four major areas i.e. Western Maharashtra, Vidarbha, Marathwada and Konkan. The major export destinations from Maharashtra are USA, Netherlands, UK, Germany, and the United Arab Emirates (UAE) etc..

2] Reasons of Floriculture Hub at Maval Taluka of Pune District

Pune District is a hub of floriculture in Maharashtra. It occupies 5% of the total land area and 3rd rank in population concentration in Maharashtra. Maval Taluka of Pune is located at foothills of Sahyadri ranges and Deccan Plateau in the eastern side. The hill slopes and rolling plains gives advantage of rocky structure which is not suitable any staple food cultivation. But the Pawana and Indrayani rivers are sufficient enough to supply water for flower cultivation. This region enjoys cooler winters and moist summer with average rainfall ranging between 1000 to 1200mm. Black-regure soil adds the advantage to flourish the cultivation of flowering crop.

This region is less developed with moderate density of population. Due to floriculture development the road connectivity has also increased and the cold storage facilities have developed. This indicates that most of the factors are fevering floriculture activity. It offers excellent self-employment good remuneration for the small and marginal farmers

3] To Assess the Need for Poly House and Profit Earned Per Poly House

Flowers can be Easily Cultivated in the Open Farming Spaces. But it has to Face Some Basic Problems Such as:

1] Problems of Pests: - when cultivation done in open farms controlling pest is the basic issue. Different variety of flowers grown in same region invites pest and major problem of honey bees. The cost of pesticides increases the cost of cultivation.

2] Poor Quality Weather Conditions:- Climatic Change is inevitable. This restricts the flowering season.

3] Poor Yield: - Heavy rainfall few days in a year or no rainfall and high temperature spoils the flowering season. In all such conditions yielding suddenly reduces and there by farmers has to face loss. More use of fertilizers in long run reduces the fertility of soil. Changes of acidic soil increases.

4] Loss of Nutrients: - Limited water retention capacity of soil reduces nutritional value of soil and hence there is more need of fertilizers

5] High Cost Overall: - Labour cost is increasing day by day. Permeant worker are needed but local laborers want higher wages. The input cost is more than output. Cost –benefit ratio is adverse.

Hence there is need for use of scientific cultivation and use of technology. Protected Poly or Green houses gives far better result and floriculture becomes a profitable business. Green house for Rose Plantation and most of flower cultivation, especially for Cut flowers is essential. Rose plants cultivated in open field has the capacity of 3.75 lakh stems per year to 5 Lakh stems per year, cultivation in greenhouse can yield 4.75 Lakh to 8 Lakh per acre every year

Shivaji Bhagde, President, Pune District Flower Growers Association said due to favorable climate in this belt productivity was encouraging several organized and unorganized enterprises. “Around 80 per cent floriculturists prefer growing Dutch roses, 18 per cent grow Gerbera and about two per cent grow Carnesia” The peak season for export orders is from September till March. From April to June there is a demand from domestic market due to the marriage season According to him, Talegaon exports 60% of its flower and remaining 40% is send to megacities like Mumbai, Delhi, Lucknow, Kolkata, and even to Nagpur and other parts of Pune.

Here the cost of one poly house of 560 sq. meter area is assessed and it has been found that just one poly house flower cultivation can give Rs. 6,83,522/- in one growing season. Likewise, in a poly house there are average 3 to 4 growing seasons are carried out throughout the year.

The table 1 and 2 indicate the total cost of production and the expenditure including cost of labour, fertilizer pesticides, and even packaging cost etc. This input cost is subtracted from revenue earned by export. This total income or profit earned per poly is calculated. Which indicate that in a growing season Rs.6, 83,522/- can be earned?

Table-1: Cost Analysis for Exported Rose from MIDC Talegaon [560 sq .m area]

Sr. No	Particulars of expenditure	Amount (Rs.)
1	Interest on Capital expenditure (10%)	49,675
2	Cost of labour	1,04,640
3	Cost of fertilizer	13,811
4	Cost of Pesticides	19,232
5	Cost of packaging , transport& marketing	6,41,120
	Total cost of Production	8,28,478

Table-2: Revenue Analysis of Rose export from MIDC Talegaon [560 Sq.m Area: -

Sr. No.	Particulars about production	Values
1	Number of plants in the Green house@7-8 plants /sq.m.	4200
2	Number of flowers per plant per season	30-35
3	Total number of buds harvested during the entire season	1,26,000
4	Export Price of buds @ Rs.12/-(1,26,000x12)	Rs.15,12000/-
5	Net Revenue (Rs. 1512000 – Rs. 8,28,478)	Rs. 6,83,522

4] To Know the Constrains Faced by Farmers at Talegaon in Carrying out Floriculture

A] Knowledge Base is Limited- Growing Flowers in commercial manner for export purpose need high skills and knowledge of each type of flowering season. The workers need to be trained for the same.

- 2] **Small Land Holdings-** The landholding of farmers getting fragmented the need for green houses for such activity is increasing. The cost of cultivation also increases.
- 3] **Unorganized Marketing:** - The marginal farmers are
- 4] **Poor Infrastructural Support-** Well developed transport connectivity; Cold Storages with Advance Electricity Supply, Gardening Equipment, good quality Packaging Materials and Trained Personals are even required.
- 5] **Domestic Market is a Huge Competition-** India being a cultural heritage and cultural diver country with various worshipping and festivals creates huge demand for flowers in local markets which reduces the quantity for exportable flowers and there by export of flowers during certain festivals drops down.
- 6] **Exposure to various kinds of biotic and abiotic stresses,** is not suitable for the ever growing export market
- 7] **Maintaining Quality is a Challenge.** Lack of commercialization approach in packaging technique id big challenge.

5] SOLUTIONS

- 1] The production technology for flowers under protected environment of greenhouses needs to be standardized by government.
- 2] Regularity in electricity supply, this will help in cold storage management for all farmers and increase export and income earning.
- 3] Research in this regards need to be enhanced with the regional and at National level. efforts
- 4] Integrated Pest Management techniques to be developed.
- 5] Easy accessibility to railways and airways with cold storage facility for increasing export.
- 6] Value Addition to Traditional Flowers etc.

CONCLUSION

In Maharashtra a farmer has to wait for six to seven years to earn a 100% profit from floriculture development where as in Gujarat, this can be achieved in three years. The demand from local market has to be satisfied by increasing productivity form all the regions under floriculture in Maharashtra. Some of the solutions given are easy to implement for government of Maharashtra

REFERENCES

- Green economy- Wikipedia, the free encyclopaedia
- Abhay Khairnar- Floriculture hit in Maharashtra as demand for flowers slumps within, outside India- Hindustan Times, Pune |
- Dr. Nirmala N. Pawar” Commercial Floriculture & sustainable Development[Regional Perspective] ISBN-978-81-929645-4-6 2016.
- Shilpa Kalmegh, Dr. Narpat Singh – “International Journal of Scientific & Technology Research” Volume 5, Issue 07, July 2016 ISSN 2277-8616 141
- IJSTR©2016 www.ijstr.org Review Of Floriculture As A Promising Industry For Marginal Farmers In Maharashtra.
- Randhawa, G.S. (1972) “Recent Advances in Horticulture” Research Indian Farming, 1972
- Floriculture vikaspedia
- <https://www.financialexpress.com>
- Personal Visit to Green House at Talegaon.

A STUDY OF THREE DIMENSIONS OF SUSTAINABILITY INTEGRATED IN E-COMMERCE**Dr. Dewani Om Prakashlal**

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ABSTRACT

The simple ability to make purchases online has changed our lives forever. The ecommerce industry is growing exponentially, more ecommerce businesses are emerging, and the digital economy is continuously expanding while reaching every corner of the world that has internet access. But with increasing awareness people are starting to become conscious about the effect of their actions on environment. The alarming increase in global warming has made people more concerned about their footprint. Environmental and sustainability awareness has long been a trend in e-commerce. In a bid to successfully address increasing demands for sustainability from their consumers, online retailers have been pondering for some time now on topics like corporate social responsibility and eco-friendly approaches in the supply chain. Some brands have built their businesses around sustainable models, considering the environmental impact on their activities, and ensuring that workers and suppliers are paid fairly. Although people are choosing sustainable products and making better choices the roots of sustainability in e-commerce at large needs to grow, considering the future of e-commerce and how it is growing it is the need of the hour that we look into making ecommerce more sustainable. We need to find more ways of reducing carbon footprint and making this trade eco-friendlier. This study focuses on how the three dimensions of sustainability (environmental, economic and social) can be integrated within the e-commerce sector to make it more sustainable.

Keywords: E-commerce, sustainability, sustainable e-commerce.

INTRODUCTION

E-commerce- Since the Industrial Revolution, people have been focused on what a product can do to make their lives easier. Internet is one such invention that has transformed our lives, it has made everything accessible from knowledge to needs, Items we purchase online show up at our house days or even hours later this service of internet is e-commerce. E-commerce stands for electronic commerce and refers to a digital platform and a business model where you can buy or sell products online. Every time you purchase a product online, you're participating in the ecommerce economy. A massive internet penetration has added to growth of E-commerce. Internet and smart phones are becoming an integral part of every life. Internet is no more a source of information but has become an important tool for shopping, learning, communicating and even getting service from plumbers, carpenters, doctors etc. Supply chain is also becoming leaner and smarter as digital platforms are helping to better connect with the customers which significantly reduces the waste and supporting to green businesses. Buying goods and services via E-Commerce allows consumers the freedom to choose when and where to shop and the opportunity to research the product, the seller, and any other available options. Shopping has been revolutionized through the availability of online information. Just about anything that can be bought in a merchandise store can be bought via E-commerce, even perishables like groceries. And consumers have embraced these possibilities around the globe. There are four traditional types of ecommerce, including B2C (Business-to-Consumer), B2B (Business-to-Business), C2B (Consumer-to-Business) and C2C (Consumer-to-Consumer). There's also B2G (Business-to-Government), but it is often lumped in with B2B. e-commerce is facilitated by many factors like internet, payment gateways which make safe online transaction possible, social media which has made brand building accessible.

Sustainability- The most often quoted definition comes from the UN World Commission on Environment and Development: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable practices support ecological, human, and economic health and vitality. Sustainability presumes that resources are finite, and should be used conservatively and wisely with a view to long-term priorities and consequences of the ways in which resources are used. In simple words Sustainability means doing something in such a way as to not deplete natural resources and to support long-term, global ecological balance. Sustainability often means taking the path of less convenience. Transforming global practices into sustainable ones may well represent one of the greatest challenges of the 21st century. Ultimately, its goal is to create a balance between the environment, society, and economics.

OBJECTIVES OF THE STUDY

The main purpose was to study how e-commerce companies are incorporating sustainability in their business and future of sustainability in e-commerce. It also focuses on consumer choices with sustainable products and practices. To study how social economic and environment factors of sustainability are integrated in the e-commerce.

RESEARCH METHODOLOGY

This study is theoretical approach towards studying the use of sustainability in e-commerce. The data has been collected from journals, papers and research papers, blogs. Researchgate, Google scholar are some of the portals used for study.

REVIEW OF LITERATURE

This paper presents an in-depth understanding of the subject matter by filling the gap in the literature by first discussing the development of e-commerce. The Internet revolution will enhance the environmental, economic, and social sustainability of e-commerce.

Sustainability in E-Commerce

According to the Sustainability Annual Trends report, produced by the think tank agency SustainAbility, indicates that e-commerce has experienced rapid growth in recent years and by doing so, this had an unprecedented environmental impact. To put this into a perspective, more than 2 billion tons of waste end up in landfills worldwide annually. All those cardboard boxes, plastic packing puffs, and Styrofoam peanuts have to be disposed of, they prove to be potential environment pollutants.

However, there is some hope left. For example, the sheer volume of waste produced by the supply-chain network and its dire impact on the environment has already rendered it necessary for e-commerce companies to rethink their practices and find sustainable solutions within the industry – most notably by adopting eco-friendly packaging. The need to switch to sustainable e-commerce has also been accelerated by customer demand. E-commerce at core focuses mainly on the customer demands and satisfaction, to meet the requirements of customer and achieve maximum customer satisfaction and due to increased awareness majority of customers are being mindful and looking for brands that provide sustainable options to choose from and take into consideration the factor of reduced carbon footprint.

The trend from recent years shows that many retailers have already given an ecological makeover to their products and have entered the green business with furniture and home accessories made of wooden pallets, paper, cardboard, or cork. In terms of environmental friendliness, some online shops have already established themselves with a sustainable business concept. Some of the brands that are taking steps to be more sustainable are Amazon announced that they plan to offset the company's enormous greenhouse gas emissions and make Amazon carbon neutral by 2040. CEO Jeff Bezos even pledged \$10 billion of his own money toward the projects combating climate change. While the goal is admirable, this doesn't address the unsustainability of Amazon's whole business model which relies on rampant one-click consumerism and blink-of-an-eye shipping standards.

Fast-fashion brand Zara has pledged to make all of its brands use only organic, sustainable, or recycled materials for their clothing by 2025. They also said they plan to transition to zero landfill waste and to use renewable sources to power 80% of their distribution centers, offices, and stores. However, again, their business model relies on fast fashion and people buying and wearing items for a short time, which even if the materials are more Earth-friendly is at odds with a sustainable solution.

Hello Fresh has what it claims is a 'lean and low-waste supply chain'. According to CEO Dominik Richter, Hello Fresh generates 66% less food waste 'than the average of 12 leading traditional food retailers globally'. Hello Fresh has what it claims is a 'lean and low-waste supply chain'. According to CEO Dominik Richter, Hello Fresh generates 66% less food waste 'than the average of 12 leading traditional food retailers globally'.

Levi's are committed to sustainable denim wear. The brand creates products which last a lifetime, their most popular item the 501 Jeans was first created over 150 years ago. This also rules out the issue of fast fashion Levi's plan to reduce their water usage by 80% using the WaterLess technique, as well as reducing their greenhouse gas emissions by 25%.

Pillars of Sustainability in E-Commerce-

There are three main pillars of sustainability that should be followed in e-commerce

Environmental: The environmental pillar often gets the most attention as companies focus on how to reduce their carbon footprints, waste from packaging, and overall environmental impact. Tracking and focusing on

reducing impact to the environment can have both a positive impact on the planet and a positive financial impact as more and more consumers come to value the efforts being made. Google is part of a wave of digital companies, including Amazon, and Ant Group, encouraging consumers to make more sustainable choices by offering eco-friendly filter options, outlining the environmental impact of products, and leveraging engagement strategies used in video games. Experts say these digital nudges can help increase awareness about environmental threats and the uptake of solutions to reduce greenhouse gas emissions.

The Green Digital Finance Alliance (GDFA), launched by Ant Group and UNEP, aims to enhance financing for sustainable development through digital platforms and fintech applications. It launched the Every Action Counts Coalition, a global network of digital, financial, retail investment, e-commerce and consumer goods companies. The coalition aims to help 1 billion people make greener choices and take action for the planet by 2025 through online tools and platforms.

Economic: Economic sustainability is defined as the way companies should economize available resources to attain maximize profits and ensure a good revenue for stakeholders. It means that companies should not only focus on short term goals but also on long-term goals by ensuring customers can see value for their money and be satisfied with their purchases. The economic dimension also requires companies to produce quality products and services at the least cost and package them in reusable packaging to avoid polluting the environment. For a business to remain solvent, they do have to focus on their own viability and profitability as a company. That said, to be sustainable, profit cannot come at the expense of the other two pillars. Concerns under this pillar are whether or not the business stakeholders' interests align with those of the company's community, customers, and values. For this to happen, retailers need to be in touch with the consumer, changing behaviour and preferences by investing in social media to get direct feedback.

Social: The social aspect includes human needs and cultural development. This includes operating in a way that benefits employees and the surrounding community according to the social license. It also means paying attention to your entire supply chain and making sure the people involved in creating your products are treated and compensated fairly. CSR (Corporate Social Responsibility) and business ethics in day-to-day activity help to achieve social sustainability.

Ways to Make E-Commerce More Sustainable-

1. Environmentally Friendly Shipping Options

A commendable development is emerging in sustainable shipping options. According to studies more people choose from environment friendly shipping but Cost-cautions consumers see additional costs for environmentally friendly shipping as unfavorable and would rather opt for the standard "free shipping" option. Some people are willing to pay more if it helps to protect the environment. Climate-neutral shipping solutions are offered by DHL GoGreen, DPD Total Zero, or GLS ThinkGreen.

2. Avoiding Packaging Waste

Besides using sustainable and recyclable materials for the packaging and opting for climate-neutral shipping options, e-commerce businesses can also optimize their waste management – by completely eliminating packaging waste. Many of us grew up with the terms "reduce, reuse, recycle" in our vocabulary. Nowadays, it's important for your business to reflect those same values. Not only to help the environment but also to increase brand loyalty among environmentally conscious customers. This can be achieved, for example, by using recycled material.

For example, H&M has a shopping bag that turns into a clothes hanger. These bags not only consist of less material than the traditional plastic bag from H&M, but 80% of the paper used is also recycled. H&M is aware that its customers are people between the ages of 18 and 35 who care about the environment and appreciate reusable packaging solutions.

3. Managing Deliveries and Returns

If your customer is not at home a lot or does not have a neighbour to accept the deliveries, orders are often returned directly back to the store. To avoid repeated delivery attempts, you could, for example, reroute your deliveries to a packing station. In addition, you should also raise your consumer's awareness to approach individual returns and act responsibly. Make sure that your product descriptions and sizing systems are precise so that customers always receive exactly what they're expecting. ASOS is a great example of this: they've implemented an AR technology that shows customers what garments will look on their body shape and size

4. Reduce Energy Waste

Sustainability can also go beyond your shipping practices and product makeup to overall business practices including how your offices and warehouses are run. Making simple changes such as turning off equipment

when not in use, investing in low energy lighting and reducing the temperature in the office can significantly lower energy bills. The first step in reducing energy waste in your business infrastructure is to do an energy audit to determine where cuts can be made. You can then start making changes based on what will be the easiest lift with the highest overall impact.

5. Creating a Safe Workplace

All the employees should be treated fairly; the environment of the workplace should be safe for everyone. The company should also focus on proper behaviour to the employees, paying them fairly and not exploiting them. This comes as a part of social sustainability.

FINDINGS

1. Over the past few years e-commerce companies are rethinking over the effect of this ever-growing business on environment and trying to make more sustainable choices.
2. There is rise of sustainable products in the market, these products have less effect on the footprint as compared to the previous, from taking organic raw materials to making changes in the supply chain everything is done taking environment in consideration.
3. The consumers gravitate towards brands which are transparent about their sustainability policies.
4. Everyday more customers are switching to sustainable products and services which have minimal footprint. Customers are becoming aware of their actions and making environment friendly choices.
5. The trend from recent years shows that many retailers have already given an ecological makeover to their products and have entered the green business with furniture and home accessories made of wooden pallets, paper, cardboard, or cork.
6. Customers are requiring that the company works more with sustainability, mostly regarding environmental factors. This are resulting in that Company expanding their product portfolios with more green alternatives. The customers however still want to pay the lowest price possible for the demanded product, if customer demand on the more environmentally friendly alternatives would be increased, it could push out the less friendly alternatives, since it more or less is the customer demand that controls what is on the market.

SUGGESTIONS

1. More and more customers are now willing to pay a higher price for a more environmentally friendly product, but they need the right information and motivation to do so. The brands need to increase transparency with customers just providing that the product is eco-friendly is not enough they need to give detailed description about how their products are sustainable. customers need to know and see how every individual action can make a difference, and that it is not only the company's responsibility to protect the environment and the societies.
2. A sustainable brand is one that has taken a clear stance on sustainability and has undertaken the environmental or social practices to support that. As an ecommerce company, your brand ethos should be reflected across site and channels. It can be consistently conveyed through a strong statement on website, blog posts, social media.

CONCLUSION

E-commerce is much more than another business model; it is another worldview and an essential element of competitiveness. As e-commerce business develops, there are still questions regarding how it can be managed from an environmental, financial, and social point of view. The aim of this study was to investigate how the three dimensions of sustainability can be incorporated within the e-commerce sector to make it more sustainable. E-commerce is realizing importance of sustainability, whereby companies will not only focus the economic gains, but also to the contribution to environmental and social aspects. They will achieve this by conserving the environment and providing job security for their employees, and choosing sustainable methods. Communication has been shown to be key in sustainable development as everybody should be encouraged to remember why one should act sustainably. Customers need to demand more sustainable items and friendly environmental activities from organizations. An organization can promote sustainability by the use of economic motivating factors e.g., low costs, quality products and additionally reduced transportation charges.

REFERENCES

1. https://www.researchgate.net/publication/304703920_A_Review_Paper_on_E-Commerce
2. <https://www.diva-portal.org/smash/get/diva2:1215642/FULLTEXT01.pdf>

-
3. <https://www.mdpi.com/2071-1050/11/1/89/htm>
 4. <https://blog.getbyrd.com/en/rise-of-sustainable-ecommerce>
 5. <https://blog.carts.guru/ecommerce-sustainability>
 6. <https://www.bigcommerce.com/articles/ecommerce/#types-of-ecommerce>
 7. <https://www.bigcommerce.com/blog/ecommerce-sustainability/#8-steps-to-move-toward-sustainable-ecommerce>

ROLE OF ARYA SAMAJ'S EDUCATIONAL INSTITUTES IN WOMEN EMPOWERMENT IN HARYANA**Parveen**

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ABSTRACT

Maharishi Dayanand Saraswati took many steps for women empowerment during his lifetime. He advocated equal rights for women as men, citing the example of Vedic society. After him, Arya Samaj did many important works for women's emancipation and women's empowerment. At the time of establishment of Arya Samaj, the condition of women in Haryana region was very pathetic. At that time, the female literacy rate in Haryana was negligible. Due to lack of education, the women here did not have any sense of their rights. For women empowerment in Haryana, Arya Samaj took the lead in promoting women education and opened many girls schools and colleges and many girls gurukuls in Haryana. In Haryana, these educational institutions of Arya Samaj contributed significantly in bringing public awareness against many evil practices like purdah system, polygamy system, child marriage and dowry system and made women aware of their rights. At present, there have been many positive changes in the social status of women in Haryana, the credit of which goes to the educational institution established by Arya Samaj and even today the educational institutions of Arya Samaj in Haryana are continuously contributing towards women empowerment.

Keywords: Women Empowerment, Arya Samaj, Haryana, Education, Gurukul

INTRODUCTION

Maharishi Dayanand Saraswati was well aware of the plight of women in Indian society and made many efforts to improve the social condition of women and women empowerment. After the establishment of Arya Samaj by Maharishi Dayanand, Arya Samaj also maintained its important goal of improving the social condition of women and women empowerment. By the end of 19th century the condition of women in Haryana was very pathetic. The women of that time had to live under their husbands or relatives. Many types of evil practices were imposed on women by referring to religious scriptures and traditions, such as purdah system, child marriage, sati system, polygamy system, widow system, female infanticide. Women were not given education. They also did not get any share in the property of the father or husband, nor did the women of that time have any rights related to their marriage or divorce etc. The woman of that time was confined to her father's house in her childhood and then her husband's house. Maharishi Dayanand realized that without educating women, their condition could not be improved, so he laid great emphasis on women's education. Arya Samaj also strongly supported the point that a woman should have all kinds of knowledge and should be given equal status in the society as a man. Swami Dayanand Saraswati made the basis of his social reform work on the ancient religious literature of India and he drew the attention of the people to the fact that the position of women in Indian society was very good during the Vedic period.

He repeatedly mentioned the lines of the Rigveda, which says that where women lead a miserable and painful life, that family soon perishes, whereas where women are respected, that family always prospered.

These words of Maharishi Dayanand Saraswati had a great impact on the Arya Samajis of Haryana and Arya Samajists in Haryana played an important role in improving the social condition of women and women empowerment through their educational institutions.

Arya Samaj Opened the Doors of Education for Women: - We all know that education has always been the basis of all round development of man. Man keeps on getting education in various forms throughout his life and keeps on taking the help of education to increase his knowledge. In ancient Indian tradition, education has been started from the very beginning of pregnancy. The proof of which is the Vedic period conception ceremony. Education in the Vedas has been counted in 6 Vedangas. According to the Vedas, the word Vidya means liberation. It is said in the Vedas that "Sa Vidya ya Vimuktaye" means that through knowledge one attains Amrita.

Realizing this importance of education, Arya Samaj established many girls' Gurukuls in Haryana and many girls' schools and colleges were opened by DAV. These Kanya Gurukul and Girls School College proved to be a boon for women's education in Haryana and there was amazing improvement in women's education.

Initially, the number of girl students in these Girls Gurukuls and Girls School Colleges was very less and their operators had to face many difficulties but gradually these institutions were successful in doing all that for which Arya Samajists established them with great enthusiasm.

Campaign Against Child Marriage System Through Education: - By the end of the 19th century, the practice of child marriage was prevalent throughout Haryana. The marriage of children was considered the first duty of the parents. The situation was so dire that if a child attained the age of 7-10 years without getting married, his parents would be pointed at by the society and often there would be many speculations in the society as to what would have been the reasons for not marrying their children at a certain age. At that time, it was common for girls to cohabit in their childhood (before the age of 13) due to the child marriage practice in Haryana.

Swami Dayanand Saraswati ji had also strongly opposed child marriage and he had said that the country where children are married in childhood, that country is drowned in misery.

The famous Arya Samaji of Haryana, Shri Basti Ram ji, through his hymns, told the rural people not to do child marriage. Drawing people's attention to other evils caused by this and refuted many traditions related to this practice. A few lines from one of his famous hymns throw light on this malpractice:- "ruko shaadee baalepan kee, har lo peed vidhavan kee. Karalo punarvivaah mat dariyo, phir prachaar jagat mein kariyo."

Through this hymn, we can know about the child marriage practice in Haryana of that time and the support of widow remarriage by Arya Samaj. In the then Haryana, a large number of widows were child widows. That's why Basti Ram Ji said that we have to leave child marriage and start widow remarriage.

Apart from this evil, especially in the rural area, marriages were arranged by the traditional priests and barber classes (Brahmins and Nayi). The basic aim of these classes was to fulfil material gains and not to do good to the boy and girl. They could easily be bribed to arrange marriages and they used to get into improper marriages for their personal gain.

Early marriage had a negative impact on both girls and boys. Many problems started arising in the society due to this evil practice. Arya Samaj started a fierce religious war against child marriage. Arya Samaj supported the British government's bill of 1891 which raised the age of marriage for girls.

The educational institutions of Arya Samaj played an important role in creating public support against child marriage.

Movement in Support of Widow Remarriage through Education: - The condition of widows in the then India was very bad. Even in the Haryanvi society of that time, the life of widows was a hellish life. She was considered stigmatized in the society. Women who became widows at a very young age and decided not to commit sati with their husbands were not allowed by the society to remarry. The rest of the life of such women was very painful. Widow women had no respect in the society. Widow women generally lived in plain clothes of white color or any other color and were not allowed to wear any kind of makeup. Even seeing them was considered inauspicious. They did not even have the right to participate in any good and auspicious program of the society. Seeing such plight of a woman, the heart of any saint can break. Therefore Maharishi Dayanand Saraswati ji supported widow remarriage and his followers also made many efforts for widow remarriage.

Swami Dayanand Saraswati ji also supported the Vedic period Niyoga system for widow marriage. Arya Samaj did a lot of publicity to get the widows out of the pitiable condition. Piru Singh ji, Ramjilal Lala ji, Lajpat Rai ji, Bhagat Phool Singh ji, Basti Ram ji and many other Arya Samajis of Haryana made the people of Haryana aware in favor of widow remarriage. Basti Ram ji made people aware by singing folk songs in favor of widow marriage through his melodious voice.

The famous Arya Samaji Basti Ram ji, presenting the picture of the pathetic life of a widow, wrote in his hymn: "hans bolane se badanaamee ho, karanee din-raat gulaamee ho. nahin vastr naya, nahin gahana ho, jogan see ban rahana ho.."

Basti Ram ji has written in another hymn for the salvation of widows that: "aaryon ne kae khulavae sabha, vahaan jaatee hai bhalee bhalee vidhava, vah punarvivaah karavaate hain, garbh hatya se sab ko bachaate hain."

Shri Basti Ram ji and many other famous Arya Samaj leaders of Haryana organized meetings for widow remarriage at many places in Haryana and widow marriages were done through them.

Due to the promotion of Arya Samaj in Haryana, widows got some relief and in the beginning some widow remarriages took place due to the efforts of Arya Samajists. Many women who came out of Arya Samaj's Kanya Gurukulas and DAV's school colleges played an important role in preparing public opinion in support of widow remarriage in the society.

Movement against Polygamy System: - This practice was generally prevalent among the upper strata of the society. But having more than one wife in the whole society was not considered wrong in the society, but it was considered a matter of pride. Many examples are also seen in such a way that even older men used to get married with girls much younger than them. This created some problems, after the death of the old man, that girl had to spend the rest of her life as a widow. Due to a man having more than one wife, there was an atmosphere of trouble in the house.

Arya Samaj's Gurukuls and DAV School Colleges, through their courses, explained to the students that having more than one wife is not a matter of pride but it is a bad practice. Thus the Arya Samajists succeeded in bringing awareness to the Haryanvi society against this evil practice.

Public Awareness against Purdah System: - After the arrival of Muslim rule in the country, the purdah system got a lot of encouragement. Even in the Haryanvi society, the purdah system was very prevalent among women. Arya Samaj was against this evil practice. He tried to tell through the Vedas that Indian society did not have such a bad practice in the Vedic period and today's purdah system is a social evil.

Arya Samaj through its educational institutions educated the girls and provided inspiration to be self-reliant. These scholarly students of Arya Samaj played an important role in bringing public awareness against the purdah system in the society. Although this evil practice is still seen in the society, but there has been a big difference in it as compared to earlier.

Movement against Dowry System: - Like other parts of the country, the dowry system has been a serious problem in the Haryanvi society. The girl's father had to spend a lot on dowry in the marriage of his daughter under the pressure of the society or the pressure of the groom's side. Therefore, the birth of a girl child was not considered auspicious in the Haryanvi society and female feticide had come into vogue here.

Arya Samaj has controlled this evil practice to a great extent by educating the girls of Haryana through its educational institutions. However, this evil practice has not been completely eradicated from the Haryanvi society even today.

CONCLUSION

If we look at the present day society of Haryana, we will find that there has been a huge change in the social status of the women here. Many factors have contributed to this change and among these the most important factor, if any, is the work done by Arya Samaj in the field of women's education in Haryana. Arya Samajists had realized from the very beginning that major changes could not be brought about in the condition of women in the society of Haryana unless the education system here was corrected, so they decided to promote education in Haryana. Established many educational institutions and running them smoothly, provided excellent education to the people of Haryana and gave many learned students to Haryana, who completely changed the complex society of Haryana. The modern education imparted by the schools and colleges opened in Haryana by DAV created social and political awakening among the people of Haryana. In the beginning the number of students studying from these schools and colleges may be less but they played an important role in creating awareness in the society.

In this way we have seen that Arya Samaj made every effort to improve the condition of women of Haryana. The movement launched by Arya Samaj to improve the condition of women in Haryana had a very positive effect and proved to be effective in changing the thinking of the people of Haryana. Gradually people started sending girls to schools and gurukuls to educate them and this revolutionized the social status of women and encouraged women empowerment.

REFERENCES

1. Chauhan Rukmesh, (2018) Women's Gurukul and Haryana, Nirmal Publications Kurukshetra, Haryana
2. Vidarthi Dharmdev, (2010) Aary Samaaj Ka Itihaas Vishesh Sandarbh Hariyaana (In Hindi), Aadhar Publications Panchkula, Haryana
3. Vidarthi Dharmadev, (2011) D.A.V. Aandolan Ka Itihaas 1886 Se 1947 (In Hindi), D. A. V. Publications Division, Delhi
4. Vidyalankar Satyaketu, (2014) Arya Samaj ka Itihas, Part I (In Hindi), Shri Saraswati Sadan, Safdarjung Enclave, Delhi, 2nd ed.
5. Vidyalankar Satyaketu, (2016) Arya Samaj ka Itihas, Part-2 (In Hindi), Shri Saraswati Sadan, Safdarjung Enclave, Delhi

-
6. Vidyavachaspati Indra, (2019) Arya Samaj ka Itihas, Part I (In Hindi), Vedic Publications, Delhi
 7. Vidyavachaspati Indra, (2019) Arya Samaj ka Itihas, Part-2 (In Hindi), Vedic Publications, Delhi
 8. Singh Ranjit, (1976) Haryana ke Arya Samaj ka Itihas (In Hindi), Arya Pratinidhi Sabha Haryana Dayanand Math, Rohtak, Haryana
 9. Chauhan Rukmesh, (2018) Swami Dayanand Contribution to Education, A.B.S. Publications New Delhi
 10. Sharma Dharampal, (2017) Bhaarateey Punarjaagan Or Aarya Samaaj (In Hindi), Atmaram and Sons Publications Delhi

A STUDY ON ARTIFICIAL INTELLIGENCE IN ACHIEVING THE OBJECTIVES OF SUSTAINABLE DEVELOPMENT GOALS**¹Adv. Prachi Chaturvedi and ²Adv. Nidhi Borana**¹Thakur Institute of Management Studies and Research²PatkarVarde College, Mumbai**ABSTRACT**

The exposure of AI along with its gradually wider impact on numerous sectors needs an assessment of its impact on the attainment of SDG. With a consensus-based expert elicitation process, it is observed that AI can help the accomplishment of targets among all the goals, but it may also impede 59 targets. The rapid development of AI needs to be assisted by required bureaucracy, failure to do so can result in gaps in transparency, safety, and also ethical standards.

The current study aims to investigate the impact of AI on the achievement of the Sustainable Development Goals by focusing on poverty eradication, innovation, and the development of better infrastructure. The method used to achieve an objective is through structured questionnaires and rapid review of literature done on the database of Scopus, and Google Scholar using keywords of Sustainable Development or Artificial Intelligence or AI.

Keywords: Artificial Intelligence (AI), Economic Growth, Technology, Sustainable Development

INTRODUCTION

Artificial intelligence (AI) is transforming a growing number of industries. For example, AI is projected to have both short and long-term effects on global productivity, equality and inclusion, environmental outcomes, and a variety of other areas. AI's reported potential consequences on sustainable development are both positive and negative. However, there has yet to be a published study that systematically evaluates the influence of AI on all elements of sustainable development. (Vinuesa, R., Azizpour, H., Leite, I. et al., 2020) However, we can also choose to observe the positive impact of AI, which is helping us to make the world a better place. The global AI market is estimated to snowball in the next few years, reaching a \$190.61 billion market value in 2025. (Saurabh Uboweja, n.d)

Speaking about the global attempts for achieving sustainability, AI can become an integral part of various sectors. According to Forbes, the industry's AI adoption rate is expected to increase by 155%. The capabilities of AI can help in eradicating sustainable issues across the world, in due course helping hundreds of millions of people in developing and advanced countries.

Benefits of Adopting AI Mechanism

Assisting blind people in understanding the environment, spotting casualties of molestation accessible by system, aiding disaster reassurance efforts, or even finding out early stages of cancer or diabetes through image scrutiny. As per the study published in Nature, AI can help achieve about 79% of sustainable development goals. (activesustainability.com, n.d) AI could become an important tool for helping a circular economy and building smart cities which use resources wisely, it will also pave the way for advanced sustainable methods. (Naveen Joshi, 2019) A transparent example of AI's contribution to achieving sustainability is traffic management. Using AI in urban mobility helps traffic jams to be forecasted and substitute routes to be suggested (intellias.com) with shared mobility; this technology foresees vehicle demand by zone and time. It means that companies can assemble the accessibility of vehicles for subjects based on their needs. This solution not only facilitates mobility but also minimizes its environmental impact.

Artificial intelligence in India focuses on various sectors ranging from developing better infrastructure to agriculture to manufacturing and retail. It adds incremental value to varied sectors and can boost the Indian economy in coming years. Unlike a decade ago it's concept and use was unknown among Indians at large.

AI is considered a greatly developed production factor and will affect growth via 3 mechanisms. (accenture.com, 2016)

The very first is—AI can mechanize multiplex physical tasks.

Secondly, AI will bring positive outcomes by functioning as an additive to the existing human, physical & capital resources.

Lastly, AI can advance innovation which can be adopted by all industries.

GAP ANALYSIS

Human lives are now greatly impacted by AI. It has become crucial now to even focus upon whether or not the mechanism will uphold human values and also the techniques should not be misused. For instance, while some AI tools can be used for harmony, peace, justice and powerful institutions (SDGs 16) issues regards to how to explain the use of such models to people could be uneasy in such sensitive areas.

In order to ensure that ethical principles are incorporated new methods are to be deployed. Currently, the data scientists and institutions which are focusing on developing digital services are finding it difficult to follow the principles of AI ethics & governance because of the absence of functional guidelines and governance.

The Need for Technology in Achieving the Targets of Sdg

Because of the holistic character of the SDG framework, policymakers must analyze a significant number of potential linkages among the 169 targets. Although a methodology for characterizing SDG interactions has been proposed, there is currently no comprehensive, data-driven investigation of interactions between all SDG indicators. (Pradhan et al,2017)

A notable amount of proficiency, proposals, and innovative technologies, are developed regularly by people like a businessman, and intellectuals to attain the goals of Sustainable development. This is where technology steps in; it integrates processes, information, and tools together, to encourage development for the betterment of mankind. It aids people to solve their problems, reduce excess time, save lives, and help to interact and exchange information (slidingmotion.com, n.d)

Artificial Intelligence and Sustainable Development Goals

The United Nations had formalized 17 Sustainable development goals (SDGs) as a blueprint to achieve a sustainable and better future for all by 2030. (United Nations- Department of Economic & Social Affairs)

As per a report by Max Tegmark, Anna Felländer, and eight co-authors, 79% of the SDGs could be facilitated with AI (Vinueza, R., Azizpour, H., Leite, I. et al., 2020).

Here's what AI can do to help humanity achieve the 17 United Nations Sustainable Development Goals:

Sdg 01 – No Poverty

With the help of AI identification can be done of the region in most need of help. By improving farmlands and agriculture, providing education and helping with aid distribution in war prone areas or disaster affected areas.

Sdg 02 – Zero Hunger

According to FAO, out of one-third of all of the food produced annually, 1.3 billion tons of food is not consumed. Only 25% of what is wasted would be sufficient to supply the entire hungry population. AI can be effective in predicting food shortages, to achieve food security, improving nutrition and avoiding malnutrition among children also in promoting sustainable agriculture.

SDG 03 – Good Health and Well Being

AI now has become very helpful for health professionals to verify past records of the patient and share diagnostic treatment with the concerned. AI helps in locating brain tumors, finding out early stages of cancer or diabetes through image scrutiny.

Sdg 04 – Quality Education

Providing education to all is not easy to achieve with AI. But AI can help to personalize education according to each child's needs for better learning.

Sdg 05 – Gender Equality

AI helps HR to achieve gender equality while hiring. At the screening stage, AI can provide data by analyzing how many applicants are men vs. women. Also, establishing zero-tolerance sexual harassment policies at work.

Sdg 06 – Clean Water & Sanitation

AI detects water contamination, recognizes bacteria and harmful particles, and also kills them through trained models. Smart toilets are installed at various places to help in tracking the health condition with the use of sensors. Looking at the current scenario, a lot of developments are still left to unleash to achieve this goal.

SDG 07 – Affordable and Clean Energy

According to the circumstances and real-time demand AI can balance energy production. AI has the potential to get better forecasts for companies to manage electrical grids and schedule maintenance accordingly. To achieve this goal by 2030, nations need to invest in clean energy such as wind, solar, thermal and adopting cost-effective standards.

SDG 08 – Decent Work and Economic Growth

AI can make life easier and safer by detecting the risk of dangerous machines at work. It is expected to provide fair income and revive the economy in coming years.

Sdg 09 – Industry, Innovation & Infrastructure

Due to AI, the manufacturing process can be faster, creating smooth distribution channels and high-quality goods. By 2030 the goal is to upgrade infrastructure and redesign sustainable industry. For instance, the automotive industry makes extensive use of AI in its various operations. Audi the automobile company has deployed computer vision- equipped cameras to find tiny cracks in sheet metal hitherto, which are not visible to humans. Financial institutions such as the banking sector are also reaping benefits due to the installation of AI applications.

Sdg 10 – Reduced Inequalities

Three major areas where AI helps in eradicating inequalities is Automating hiring and legal processes, saving the environment and minimizing food shortage. Also, it helps in creating a new and equal foundation for all.

SDG 11 – Sustainable Cities and Communities

AI can assist in urban planning and transforming into Smart Cities with more focus on traffic management, advanced security systems and waste management making society a secure place to live.

Sdg 12 – Responsible Consumption & Production

AI can do much better with less - so any inefficiency in line of production and consumption can be reduced, logistics optimized and quality improved. The only thing we need to do is change our mindset and trust the transformation of AI towards responsible consumption.

SDG 13 – Climate Action

AI can use past data to predict the future climatic condition. The action can be taken to optimize demand forecasting of energy and related predictions like sunlight, rain, wind.

Sdg 14 – Life below Water

AI is used to reach those areas of the ocean which are out of human reach. It helps to identify new marine animal and plant species living below the sea. By 2030, with the help of AI, the goal is to restore marine ecosystems and promote sustainable fishing while reducing ocean acidification.

SDG 15 – Life on Land

Desertification is a major problem faced by many countries. AI will help to easily detect and plan, prevent and take action by identifying the parameters. Future goals are set to achieve sustainable forest management and developing a greener transportation network.

Sdg 16 – Peace, Justice & Strong Institutions

Corruption, terrorism, bribe and other frauds can be prevented through AI. It can contribute to the justice system by providing better accessibility, leading communication and assisting administration.

Sdg 17 – Partnerships

This is the goal where society, institutions, citizens across nations needs to stand in unity. Without the support of You and I, AI alone cannot achieve the above stated goals by the United Nations.

RESEARCH METHODOLOGY

The study is Qualitative in nature there is use of primary as well as secondary data.

Primary data: The data is collected through a structured questionnaire to find out the viewpoint of people about the use of AI.

Secondary data: The data is collected from various websites, reports, articles, periodicals and journals.

OBJECTIVES OF THE STUDY

- To study and understand to what extent AI can lend a helping hand in achieving the targets of Sustainable Development Goals.
- To understand what propulsion AI can give to various sectors to stand unique on the Global level.
- To study the human view about AI.

SCOPE OF THE STUDY

The objective of the present study is to understand the impact of Machine Learning on our ecosystem, also what sense of strength it provides to various sectors to stand unique on a global platform. The study has also highlighted how AI is helpful in achieving Sustainable Development goals framed by the United Nations.

LIMITATION OF STUDY

The study has some limitations; the results are based on prospective observational studies.

I. This study focuses majorly on understanding the impact of AI in achieving goals by 2030.

II. This study is done through random sampling.

III. Conclusions are based on the survey conducted through a questionnaire on Google forms. Therefore, the results are just conjectural.

DATA ANALYSIS & INTERPRETATION

On the basis of Primary data collected with the help of Questionnaire through a sample size of 53 respondents comprising academicians, researchers, industrial experts and others.

The result shows 37.7% institutes are quite focused on increasing its proportion of applications assisted by AI whereas 28.3% are moderately focused. While, there are 7.3% institutes who are not having any plans to apply AI in their institutes.

As per data collected AI can bring better results and efficiency for financial advisors, Doctors, academics, and entrepreneurs while respondents are skeptical about the role of AI for employees and labours.

AI is used in various ways day to day, majorly people voted for social media, voice assistant, navigation and smart appliances. Yet there is a decline in use of AI technology in Deep learning, Robotics and Natural Learning Processes.

More than 45 respondents believe that Products and Services using AI makes life easier, bringing Harmony, Peace, Development, Eradication of monetary problems, Global level adoption of AI.

When asked about their response on high profile individuals giving dire warnings about AI, 64.2% were worried but optimistic about the effect of AI. The best part is that few respondents were welcoming the adoption of AI.

Whether pleasant or rough, the future is rapidly approaching, and artificial intelligence will undoubtedly play a role. As this technology advances, the world will witness new businesses, consumer applications, and employment displacement, as well as the creation of whole new jobs. Artificial intelligence, like the Internet of Things, has the potential to drastically alter the economy, but its full impact is unknown.

CONCLUSION

AI offers a wide range of applications that can act as game changers for the pursuit of Sustainable Development. This involves multiple stakeholders from different countries, cultures and sectors. Through the United Nations Global Compact, companies around the world are required to play a role in achieving the SDGs. As can be seen in the data collected above, AI has the potential to be a powerful enabler in global efforts to boost economic development and achieve SDGs framed by the United Nations. There is no technology that solves every problem in the world. Achieving the SDGs requires ambitious government policies, corporate efforts, and personal action, in addition to new technologies. We need to be free to adapt any tool. As AI becomes more powerful every day, we need to encourage more innovators and entrepreneurs to focus on new ways to use this technology to solve their biggest social challenges.

REFERENCES

- <https://www.nature.com/articles/s41467-019-14108-y#auth-Ricardo-Vinuesa>
- <https://agupubs.onlinelibrary.wiley.com/action/doSearch?ContribAuthorRaw=Pradhan%2C+Prajal>
- <https://www.wcfaglobal.com/from-the-members/14/saurabh-uboweja-artificial-intelligence-an-era-of-adaptability#:~:text=The%20global%20AI%20market%20is,a%20top%20priority%20for%20brands.>
- <https://www.allerin.com/blog/how-ai-can-build-a-circular-economy-in-smart-cities>
- [https://www.activesustainability.com/sustainable-development/the-alliance-between-artificial-intelligence-and-sustainable-development/#:~:text=According to a study published, that use their resources efficiently.](https://www.activesustainability.com/sustainable-development/the-alliance-between-artificial-intelligence-and-sustainable-development/#:~:text=According%20to%20a%20study%20published,that%20use%20their%20resources%20efficiently.)
- <https://intellias.com/ai-in-urban-mobility-give-citizens-what-they-want-or-die-trying/>

-
-
- <https://sdgs.un.org/goals/goal2>
 - https://www.accenture.com/_acnmedia/PDF-153/Accenture-AI-For-Economic-Growth-India.pdf
 - <https://slidingmotion.com/why-technology-is-important/#:~:text=Conclusion-, Overview of Why Technology is Important.,to interact and exchange in formation.>
 - <https://peltarion.com/blog/applied-ai/17-ways-to-reach-un-sdgs-with-ai>

ANALYSIS OF THE POTENTIAL IMPACT OF TRADE SANCTIONS ON RUSSIA AND GLOBAL ECONOMY WITH REFERENCE TO RUSSIA – UKRAINE CONFLICT

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ABSTRACT

Trade sanctions are financial and commercial restrictions imposed by one or group of countries against a targeted country. They are imposed for a variety of reasons other than economic like political, military and human rights. This paper analyses the potential impact of trade & economic sanctions on Russia imposed by U.S , U.K and other European countries in retaliation to the invasion of Ukraine by Russia. The threat of the Third World war and nuclear war is being discussed seriously in the international forums. There are chances of escalation of other conflicts into war like between China & Taiwan. There is lot of volatility and uncertainties in the global markets due to the prolonged war. The supply chain of many Global companies has been affected which are dependent on Russian oil, gas and other raw materials. Indian economy is also facing challenges due to the increase in the prices of crude oil in the global markets. India has adopted a principled approach and has called for peaceful and diplomatic solution to the conflict. It has abstained from U.N. resolutions imposing sanctions on Russia. This paper focuses on the measures adopted by Western countries to isolate Russia economically and also the steps taken by Russia to safeguard its economy. The study concludes that Russian economy is facing major challenges due to the trade sanctions. The prolonged sanctions can lead to severe reactions by Russia and this can lead to new conflicts with NATO countries.

Keywords: NATO, trade sanctions, Russia, Ukraine, volatility, conflict.

INTRODUCTION

The origin of the conflict lies in the break up of USSR (Union of Soviet Socialist Republic) in 1991. Ukraine was a part of the USSR since the end of the Second world war. Ukraine lies west to the Russia and is surrounded by Poland , Belarus and the Black sea in the south. There are major similarities in the culture , religion and language of Ukraine and Russia. Since the past decade there has been a growing affinity in Ukraine towards the NATO (North Atlantic Treaty) group countries. This had sent alarm bells ringing in Russia as the presence of NATO at its doorstep is considered as a major threat to Russia. In 2014 , Russia had annexed the Crimea region of Ukraine which had a majority of Russian speaking people. Since then onwards there was always a constant threat of a full scale invasion of Ukraine.

On 24th February 2022 , Russia started the invasion of Ukraine with a warning to all the NATO countries that any interference in the conflict would be considered as a attack on Russia. The Western countries & U.S. were very cautious in their approach and have replied mostly with trade & economic sanctions. They have supplied major arms & ammunition to Ukraine but stopped short of any direct military involvement in the conflict. The NATO countries plan to isolate Russia through global sanctions and in the event of prolonged war, major damage can be inflicted on the Russian economy.

Russian Economy

The economy of Russia has gradually moved from the Soviet era planned economy to a market driven economy. It is the fifth largest economy in Europe and eleventh largest in the world in terms of nominal G.D.P. It has vast reserves of natural resources like crude oil and natural gas. The unemployment rate is also about 5%. It has the fifth largest foreign exchange reserves in the world. The arms industry of Russia is very sophisticated and developed and many countries including India rely heavily on Russia for their arms and ammunition requirements. The country's monetary system is regulated by the Russian Central Bank which has replaced the Soviet era Gosbank. The main function of the RCB is to stabilize the currency Ruble by the control of foreign exchange transactions. In recent years there has been increased trade relations between Russia and China.

Trade Sanctions by U.S & Western Countries

Trade sanctions have been imposed by U.S and E.U. on Russia. It has also been barred from the SWIFT banking system. Many MNC's have closed their operations in Russia. Germany is a major importer of natural gas from Russia. It has stalled the construction of NORD STREAM -2 pipeline which was under advanced stage of construction. The Bank Accounts of many Russian Oligarchs have been freezed by the U.S and European Banks. There are sanctions on export of critical technology to Russian companies, trade in Russian Government Bonds, freezing of assets and travel ban on selected elite Russian citizens. All these measures will definitely hit the Russian economy in a hard way.

Counter Measures by Russia

Russia has also responded to the trade sanctions by reciprocal sanctions and cancellations of contracts to the unfriendly countries. It has also stopped the supply of Gas to many East European countries and Germany which are dependent on Russia for their energy requirements. Buyers of the Russian natural gas based in the unfriendly countries will have to make payments in Russian rubles. It has imposed export ban on a variety of products till the end of 2022. The ban covers export of medical equipments, automobiles, agricultural products, telecom and electrical equipments. Russia has also offered Crude Oil at discounted options to friendly countries and this offer is being used by India to fulfil its energy requirements.

Impact on Russian Economy

The impact of the trade sanctions on the Russian economy will be felt in two major ways. Firstly there will be a sharp depreciation in the value of the Rouble. Secondly, the shortage of imported goods will cause great spike in inflation. All these factors combined will lead to a sharp fall in the real GDP of the Russian economy. Most of the economists predict that by the end of 2022, industrial production, consumption and investment will all decline and the G.D.P will contract between 12 to 16 percent. The Russian economy will rely heavily on its existing export model of oil and gas.

Impact on Global Economy

The current conflict will have major consequences for the global economy which was just beginning to recover from the stress of corona virus pandemic. Russia and Ukraine combined total up to 30% of the global exports for wheat and corn. The disruption of food supplies have already led to jump in the food prices in many countries. The International Monetary Fund (IMF) has predicted that entire global economy will experience slower growth and faster inflation in 2022.

The world stock markets have reacted adversely since the start of the conflict. Most of the European and Asian stock markets are on a downturn whereas the U.S and Japanese stock markets are not showing any adverse trends. The major impact has been the sharp rise in the prices of crude oil in the international markets.

CONCLUSIONS

- In the event of the war continuing for a longer period, it will have disastrous effect on the Russian economy. Inflation is expected to rise above 20% by the end of 2022. –(1)
- The Global G.D.P could reduce by 1 percent by 2023 and global inflation could rise by 2 percent by 2023. – (2)
- The supply of important commodities like titanium, palladium, wheat and corn will be disrupted which will create supply chain problems for manufacturing companies like automobile, Smartphone and aircrafts.
- Russia is a major exporter of farm fertilizer to many countries. There will be a major disruption in the fertilizer supply for the world markets.
- Europe will be most badly affected region as it is heavily dependent on Russia for energy and food supplies.
- Most of the European and Asian stock markets are reporting negative CAAR co-efficient since the beginning of the conflict. This negative trend is expected to continue as the war extends for a longer period. – (6)
- There were continuous cyber attacks by Russia on Ukraine installations since 2014. These cyber attacks will be extended to countries supporting Ukraine in the conflict.

REFERENCES

1. How sanctions impact Russia and the Global economy – Ira Kalish (Chief Global Economist , Deloitte Tohmatsu) Article published 15th March 2022 – deloitte.com
2. The Economic cost of Russia-Ukraine conflict – Iana Liadze, Corrado , Paul – National Institute of Economic and Social Science Research, U.K. (Policy Paper No:32 , 2nd March 2022).
3. Brandishing the Cybered Bear: Information War and the Russia-Ukraine Conflict: Azhar Unwala and Shaheen Ghori: Military Cyber Affairs: Vol1, Issue1, Article 7: Scholar Commons, 2015.
4. The Russia – Ukraine Conflict and the effect on Fertilizer – Greg Ibendahl: Department of Agriculture Economics: Kansas State University : G.I:2022.10 , March 8 2022. Agmanager.info
5. Economic consequences of the Ukraine conflict: Havlik, Peter: Policy Notes & Report No:14, The Vienna Institute for International Economic Studies , November 2014.
6. The reaction of G20+ stock markets to the Russia Ukraine conflict “black swan” event : evidence from event study approach: Imran Yusuf, Ritesh Patel , Larisa Yaroyaya : papers.ssrn.com , March 29 2022.
7. The price of war: Macroeconomic effects of the 2022 sanctions on Russia: Anna Pestova, Mikhail Mamonov, Steven Ongena.: Voxeu.org/article: Published: 15th April 2022.

SUSTAINABLE DEVELOPMENT GOALS 2030: CHALLENGES & OPPORTUNITIES**A STUDY ON LIFE UNDER WATER: SDGs 2030****Ms. Priyanka Ramesh Patil**

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ABSTRACT

Humans are basically a land-dwelling species, they depend greatly on oceans for survival. Oceans are connected to our existence to such an extent that with every breath we take and every drop of water we drink we owe something to them. A large segment of the global population depends heavily upon coastal and marine resources for their day to day needs. Oceans provide food, create opportunities for livelihoods and contribute significantly to the global economy through trade, transport, tourism, etc. This shows how intimately our existence is linked to oceans. We are now witnessing an emerging concept of the blue economy, which refers to sustainable ocean resources for economic growth, improved livelihoods and jobs and ocean ecosystem health.

For Open Ocean and deep sea areas, sustainability can be achieved only through increased international cooperation to protect vulnerable habitats. Establishing comprehensive, effective and equitably managed systems of government-protected areas should be pursued to conserve biodiversity and ensure a sustainable future for the fishing industry. We should eliminate plastic usage as much as possible and organize beach clean-ups. Most importantly, we can spread the message about how important marine life is and why we need to protect it.

INTRODUCTION

It is only 08 years until 2030, the deadline for achieving the United Nations Sustainable Development Goals (SDGs). The world has set itself an ambitious task. To reach the SDGs we will have to produce more from the oceans. We need the oceans to provide more food, more jobs and more energy. And we must maintain its capacity to regulate the climate and support biodiversity.

These are all reasons to manage the oceans better. To build a sustainable ocean economy, we must stop the degradation of the world's marine ecosystems and improve the environmental status of the oceans. This will require action from all of us.

Although humans are basically a land-dwelling species, they depend greatly on oceans for survival. Over 40% of the earth's population lives within or near coastal region. Oceans are connected to our existence to such an extent that with every breath we take and every drop of water we drink we owe something to them. Estimated volumes of water stored in the earth's natural reservoirs show that most is stored in oceans (about 96%); in other natural reservoirs the percentage is much less. They regulate the earth's system, supply living and non-living resources and provide social and economic goods and services. A large segment of the global population depends heavily upon coastal and marine resources for their day to day needs. Oceans provide food, create opportunities for livelihoods and contribute significantly to the global economy through trade, transport, tourism, etc. This shows how intimately our existence is linked to oceans. We are now witnessing an emerging concept of the blue economy, which refers to sustainable ocean resources for economic growth, improved livelihoods and jobs and ocean ecosystem health. However, oceans are gradually losing their potential to support our lives. Though there are several factors which have contributed directly or indirectly to declining oceanic health, there are two major categories of impacts on oceans: firstly, due to human management issues such as overfishing, habitat loss and pollution; and, secondly: greenhouse gas (GHGS) emissions, leading to ocean warming, oceanic acidification and deoxygenation.

Markets in global value chain are increasingly becoming reliant on marine and coastal biodiversity. Domestically, more than 3 billion people rely on marine food for their protein needs. The excessive burden, thus, calls out for more manageable interventions in the sector with immediate attention towards the damage caused to the biodiversity below water.

OBJECTIVES OF STUDY

- To reduce the environment and water pollution Nirmalya Management drives can be organised.
- Beach clean-up drives as an initiative to save Marine life.
- Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

- Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- Effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources

Fact and Figures

As much as 40 per cent of the world's oceans are heavily affected by human activities, including pollution, depleted fisheries, and loss of coastal habitats. Long-term observations of ocean acidification over the past 30 years have shown an average increase of acidity of 26 per cent since pre-industrial times, and at this rate, an increase of 100 to 150 per cent is predicted by the end of the century, with serious consequences for marine life.

Illegal, unreported and unregulated fishing remains one of the greatest threats to sustainable fisheries, the livelihoods of those who depend upon them and marine ecosystems. Current levels of marine acidity have increased by about 26 per cent on average since the start of the Industrial Revolution. Moreover, marine life is being exposed to conditions outside previously experienced natural variability.

To counter this, Goal 14 focuses on preventing marine pollution, ending illegal and destructive fishing practices, and sustainably managing and protecting marine and coastal ecosystems while increasing scientific knowledge, research and transfer of marine technology to improve marine health.

Sources of Marine Pollution



India has a coastline of more than 7,000 kilometers, but sadly, it's not all pristine beaches and stunning cliffs. In fact, for Mumbai's citizens, the shore is more like a landfill. The beaches are covered with trash – colorful plastic bags, bottles and food packages are everywhere, often entangled in old fishing nets or rotting fabrics. Most people are outraged by the situation, angry at the city government for not cleaning it up or at those who throw their trash in the streets or even straight onto the beach. This hugely impacts the marine life, particularly the tortoises, and other crustaceans who are habitants of the beach, especially during their breeding season.

Marine Litter poses a vast and growing threat to the marine and coastal environment. Around 8 million items of litter enter the marine environment every day endangering the species in the ocean. Every day, tones of plastic and other waste is disposed of into our water bodies. The litter not only spoils the scenery but is harmful to the natural habitat, including people and wildlife. Additionally, the debris thrown into marine bodies can last a very long time, affecting marine life for years to come.

Nirmalya Management Drives

Disposal of Waste generated during ganapati festival.

To reduce the environment and water pollution Nirmalya Management drives were organised.

More about Nirmalya Collection

The flowers, leaves and garlands offered to the idol of Ganpati are generally left into the water ponds, then water become polluted and if it is dropped in the garbage, it become litter and gets desecrated. To reduce the water pollution and to keep the balance of environment, Dr. Shree Nanasaheb Dharmadhikari Pratishtan Revdanda have achieved golden mean in order to start the unique campaign of collecting this “Nirmalya”, converting into fertilizer which can be used for trees.

Nirmalya Composting

The collected “Nirmalya” was transported with the help of vehicles like dumpers and tempos. The pits were dug and collected “Nirmalya” was dropped in those pits for converting it into Fertilizer. This fertilizer will be utilized for conservation of trees planted by the Pratishtan. The Pratishtan has provided the required equipment in order to collect the “Nirmalya” from the lakes.

A golden mean of this “Nirmalya” would certainly be recycling it as thought by the Pratishtan, which started converting it into vermiculture.

[<http://dsndp.com/activities/other/nirmalya/nirmalya2019.html>]

Clean Shores Mumbai

Marine Litter poses a vast and growing threat to the marine and coastal environment. Around 8 million items of litter enter the marine environment every day endangering the species in the ocean. Among the litter found on the ocean, plastics constitute around 90% (Source: Ocean Conservancy Report 2017) Mumbai the island city has 114 km of coastline and nearly 16 km of beaches stretching from Colaba in the south and Madh and Marve to the north (Maharashtra Maritime Board). Dadar Chowpatty, also known as Chaityabhoomi beach is a popular tourist destination. The high number of footfall make cleanliness at the beach a major challenge for MCGM.

Through Project Clean Shores Mumbai, United Way Mumbai strives to enhance the overall state of cleanliness and waste management at the shores of Mumbai through public-private partnership.

Every day, tonnes of plastic and other waste is disposed of into our water bodies. The litter not only spoils the scenery but is harmful to the natural habitat, including people and wildlife. Additionally, the debris thrown into marine bodies can last a very long time, affecting marine life for years to come. [United Way Mumbai]

Beach Clean Up Drive

As a part of our Global Social Leaders (GSL) activity, the school administration along with Mr. Afroz Shah and his team encouraged us to take up beach clean up drives as an initiative to save Marine life. Our Secondary learners as well as learners of Grade V took this initiative seriously and enthusiastically visited Dana Pani beach, Malad for this purpose. We began this journey on Feb 9, 2019 and have had almost 3-4 successful beach clean up drives ever since.

Our Personal Reflection: We as a group felt content that we could make a small yet impactful contribution towards nature and its inhabitants. We aim to take this initiative further and create awareness among our families and societies so that we all can contribute in keeping our beaches and water bodies clean and not pollute it by throwing plastic and debris into the them. [<https://www.jbcnschool.edu.in/beach-clean-drive/>]

Big Mumbai Cleanup- Beach Warriors

Team Beach Warrior has been spearheading the Dadar Beach Clean Up for more than a year. This year, 700+ tonnes of garbage was collected and responsibly dumped.

The Dadar initiative has been inspired by the citizen-driven Versova beach cleanliness program – championed by activist Afroz Shah and dubbed by the UN as the world’s largest beach cleanup project.

Beach Warriors are extending their support to BMC workers and taking the cleanup drive to different locations across Mumbai. The clean up drive is divided into 6 different zones out of which Zones 1-5 are Residential areas and Zone 6 is a Beach cleanup. You can choose from any of the zones to help Mumbai shine. [<https://www.ivolunteer.in/opportunity/a0C7F00000DdZiqUAF/big-mumbai-cleanupbeach-warriors>]

CONCLUSION

For Open Ocean and deep sea areas, sustainability can be achieved only through increased international cooperation to protect vulnerable habitats. Establishing comprehensive, effective and equitably managed systems of government-protected areas should be pursued to conserve biodiversity and ensure a sustainable future for the fishing industry. On a local level, we should make ocean-friendly choices when buying products or eating food derived from oceans and consume only what we need. We should eliminate plastic usage as much as possible and organize beach clean-ups. Most importantly, we can spread the message about how important marine life is and why we need to protect it.

Human well-being cannot be achieved without the protection and conservation of the Earth's ecosystem. To maintain the quality of life that the oceans have provided to humankind, while sustaining the integrity of their ecosystems, a change will be required in how humans view, manage and use oceans, seas and marine resources.

**A STUDY ON THE EMPOWERMENT OF WOMEN ENTREPRENEURS THROUGH
GOVERNMENT INITIATIVES****¹Rekha Shetty and ²Prof. Dr. Vilasini Patkar (Guide)**¹Assistant Professor & Doctoral Student and ²HVPS's Ramniranjan Jhunjhunwala College of Arts, Science, and Commerce (Autonomous)**ABSTRACT**

Entrepreneurship has benefits that go beyond self-sufficiency. Entrepreneurs have been essential in fostering social change and bettering people's lives and working circumstances. They not only help to raise the standard of living by creating jobs for the populace, but they also add to the country's GDP. The government is taking the initiative to empower women and thus reduce gender discrimination. If women participate as entrepreneurs, the rate of expansion of the Indian economy can be accelerated. The research aims to learn more about the country's entrepreneurial ecosystem and the government's many programs targeted at encouraging women's participation in the process. For this purpose, along with secondary data, an in-depth interview of 39 women entrepreneurs from Mumbai was conducted by convenient sampling technique.

Keywords: empowerment, women entrepreneurs, entrepreneurial ecosystem, GDP, economic growth.

I. INTRODUCTION

India will be the largest individual contributor to the global demographic change in the not-too-distant future. According to a Working Paper published by the International Monetary Fund in 2011, the country's age structure and altering demographics are responsible for a substantial portion of India's growth since the 1980s. India's average age by 2026 will be 29, which is lower than the global average. According to the United States Census Bureau, India will surpass China as the world's largest country by 2025, with a substantial proportion of the masses of working age. The demographic dividend in India might add around two percentage points per year to the country's per capita GDP growth over the next two decades.

In a fast-growing economy like India, entrepreneurs are critical in ensuring that the right number of products and services are produced in response to demand from the rising population. Without entrepreneurs, the country would be entirely reliant on imports from foreign corporations, and the country's GDP would suffer, if not completely collapse. We are currently witnessing such a crisis in our neighboring country. As a result, the economy's GDP generation is heavily reliant on entrepreneurs. Entrepreneurs contribute to foreign exchange profits, job creation, and tax income, resulting in increased wealth and self-sufficiency.

Michelle Obama had once quoted "No country can ever truly flourish if it stifles the potential of its women and deprives itself of the contributions of half of its citizens." Women over the years were considered a less privileged gender when it comes to their decision-making ability, recognition, and self-esteem.

II. REVIEW OF LITERATURE

Goyal and Prakash (2011) did a study on women's entrepreneurship and discovered how push and pull variables influenced women's entrepreneurship. The modern woman's awareness of her rights has completely altered the situation. As a result, women are thriving as entrepreneurs in a variety of fields. Despite her accomplishment, the author has demonstrated India's slow progress in women's entrepreneurship. One of the saddest mindsets has obstructed the way: male-dominant culture. Another example is cutthroat competition. Other factors were schooling, family responsibilities, a lack of training, time constraints, a lack of awareness, and financial help. However, the author has proposed several steps to help women entrepreneurs flourish, including increased awareness of how to do business, ongoing support, varied training, and cheap loans.

Hina Shah and Punit Saurabh (2015) stated that some women launch micro-companies to support themselves and their families, but their contributions are insignificant, and many of these businesses are unlikely to grow or be profitable in the long run. Given the obstacles and regional variations faced by women entrepreneurs in South Asia, this article focuses on women entrepreneurship development programs and identifies nine areas such as enhancing institutional support, Building up the support infrastructure, Enlarging the cadre of trainer-motivators, Identifying opportunities, Training, and counseling, Identifying candidates for entrepreneurship, Supporting women entrepreneurs through to operation, Fostering an entrepreneurial culture and environment and the entrepreneurial environment, are the areas where programs can be strengthened.

Kirve and Kankar, (1993) For someone who is beginning a business on his own time and at risk, there is a huge danger of failure. As a result, in the case of women who must deal with business, family, and social issues,

this percentage of loss may be substantially higher. This type of setting is conducive to the growth and development of female entrepreneurs. As a result, this demonstrates the need to effectively guide and encourage women to start businesses. This method will assist them in increasing their motivation. The training strategy is critical for assisting women in non-traditional, high-skill, male-dominated activities, as well as for boosting women's confidence.

Kamberidou, I (2020) The multitasking whirlpool, work-life conflict, lack of financial resources and support services, insufficient business, management, and marketing skills, and low access to knowledge, business networks, technology, and digital markets continue to be challenges for women entrepreneurs. Researchers continue to call for the promotion and implementation of statutory policies and legal scholarship on entrepreneurship, including equal opportunity policies and well-defined property rights, particularly for women in developing countries, to encourage long-term female entrepreneurial involvement and foster socio-economic development. As a result, incorporating the gender factor is critical in preventing talent waste. Using all human resources, including the complete talent pool, means encouraging innovation, which is essential for economic growth and long-term development

III. OBJECTIVE OF THE STUDY

- ❖ To investigate the current entrepreneurial ecosystem for women entrepreneurs in India
- ❖ To explore the challenges faced by women entrepreneurs
- ❖ To study the opportunity offered by various government initiatives

IV. METHODOLOGY

Primary Data was collected in the form of in-depth interviews of 39 women entrepreneurs from Mumbai through the convenience sampling technique. A structured questionnaire was framed and responses were recorded.

Data for the study was obtained from **secondary sources** such as various published reports from NASSCOM, Statista, Startup India website, Ministry of MSME, WTO, ILO reports, KPMG reports, expert opinions published in top newspapers, and journal articles.

V. Data Analysis & Interpretation

Data was collected from 39 respondents from different sectors (fig:1)

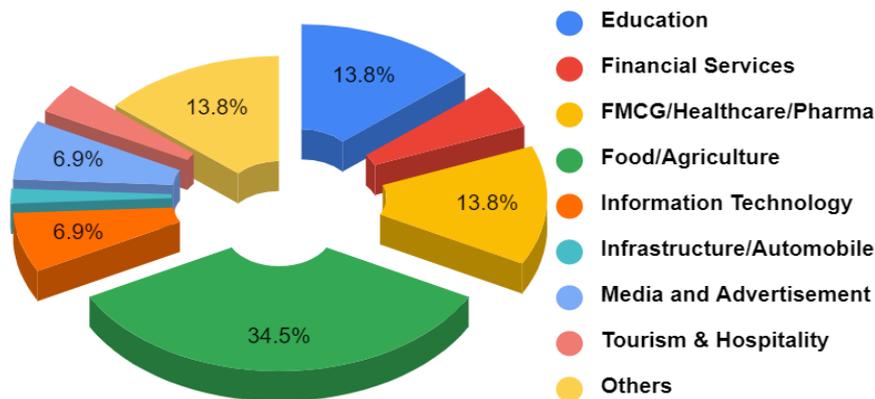


Fig 1: Sectors covered by women entrepreneurs for the survey

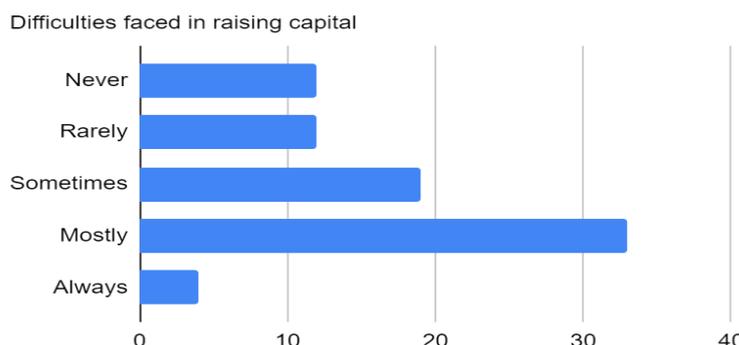


Fig 2: Difficulties faced by women entrepreneurs in raising capital

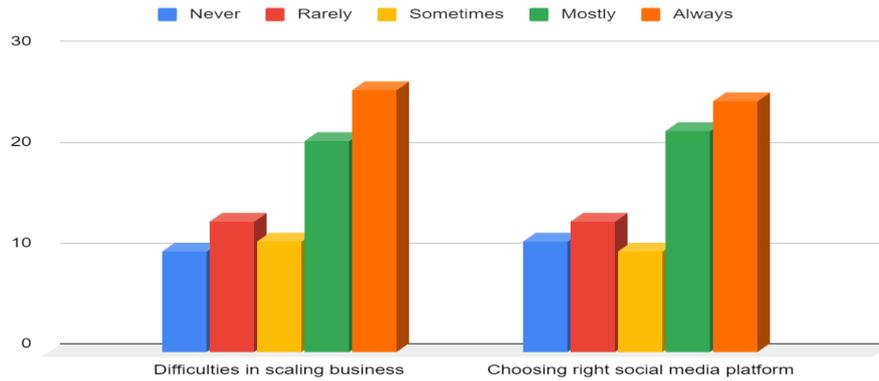


Fig 3: Difficulties faced by women entrepreneurs in scaling their business and choosing social media platforms to spread awareness

The data suggests that these women entrepreneurs have trouble raising capital and encounter marketing challenges.

VI. FINDINGS

A] Current Entrepreneurial Ecosystem for Women Entrepreneurs in India

India is progressing towards its goal of establishing a thriving entrepreneurship ecosystem. People are focusing their efforts on finding better ways to deal with the economic challenges that the pandemic and related circumstances have posed. According to a Forbes survey and the Startup India website, women entrepreneurs account for 13.76 percent of all entrepreneurs in India. It also suggests that in six years, the percentage of self-employed women in the country decreased while the percentage of salaried women increased dramatically. According to the World Economic Forum's Global Gender Gap Report 2021, India ranks 140th out of 156 nations in the Global Gender Gap Index 2021, down 28 places from its ranking in 2020. The downfall is mainly viewed as an impact of the pandemic.

Our women needs to be empowered. Empowerment refers to the ability to change one's situation and surroundings. Women's empowerment entails a woman's sense of self-worth, her right to make and determine her own decisions, her access to opportunities and resources, her ability to control her own life both inside and outside the home, and her ability to influence the direction of social change to create a more just social and economic order on a national and international scale. Gender equality is a vital foundation for a peaceful and sustainable planet. It is one of the 17 Sustainable Development Goals by the United Nations. As per the report by McKinsey and Company, India offers one of the world's largest potential to improve GDP by promoting women's equality—\$770 billion in additional GDP by 2025. Women's contribution to India's GDP is 18 percent, one of the lowest in the world, compared to 40% in China (figure 1) reflecting the fact that women make up only 25% of the country's workforce. Increasing women's participation in the labor force by ten percentage points generates more than 70% of the potential GDP opportunity. As a result, it has become even more critical to assist the country's women entrepreneurs to ensure a secure path to a speedy recovery of the economy.

Percentage of GDP contributed by female workers,

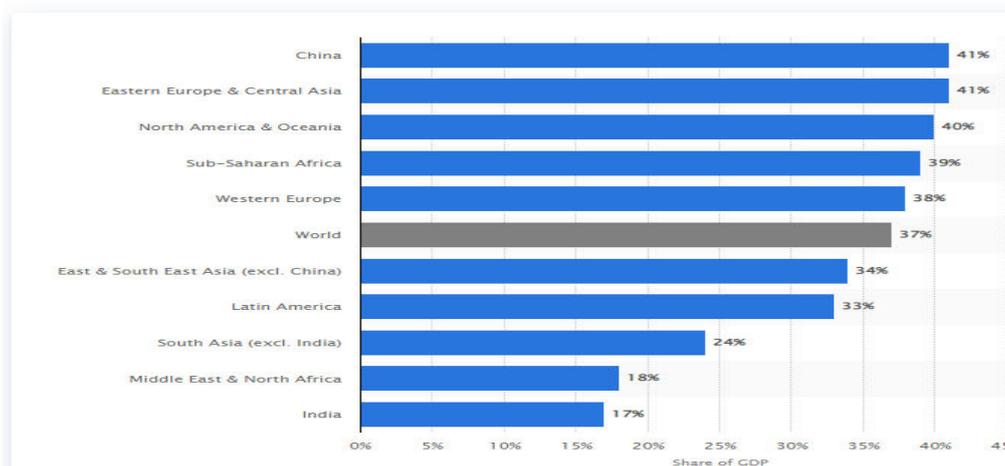


Figure 1: Percentage of GDP contributed by female workers, as of 2015, by region

Source: Statista

B] Challenges Faced by Women Entrepreneurs

According to a Forbes survey and also the primary data collected, a salaried job is considered more secure, and being an entrepreneur is never pursued for multiple reasons like lack of funds, lack of risk-taking appetite, lack of confidence, and lack of networking. This is mainly because culturally over the years, women are taught and reminded that they are dependent and will be questioned for dreaming. Lack of financial literacy, banking illiteracy, lack of awareness about the various schemes offered by state and central government, lack of mentorship add to the baggage of challenges.

C] Government Initiatives for Women Entrepreneurs

The government has established a ministry (department) committed to promoting and supporting women entrepreneurs. In addition, the Indian government has introduced a slew of initiatives aimed at boosting entrepreneurship in the country and providing financial assistance to new businesses.

Some of the Top Initiatives by the Government to Encourage Entrepreneurship among Women are:

- Dena Shakti Scheme: This one provides loans to women entrepreneurs in sectors such as Agricultural businesses, Retail stores, the Manufacturing sector, Micro-credit organizations, and Housing and Education.
- Bharathiya Mahila Bank Business Loan: It offers women entrepreneurs up to INR 20 crores in financing to start a manufacturing enterprise.
- The Shree Shakti Loan: The scheme initiated by SBI requires women to register under their training program to build the skills required to run a business and then the loan is granted at a minimal interest rate.
- Pradhan Mantri Rozghar yojana: Employers will be incentivized to create new jobs by the Government of India, which will pay the entire employer contribution to EPF and EPS both w.e.f. 01.04.2018. An initiative to increase employment opportunities among youth.
- Startup India schemes: The government has taken all initiatives to promote startups across the country. Various schemes are launched for women entrepreneurs like funding support, Innovation centers in National institutes, Atal innovation mission, self-certification, tax exemption, start-up fest, and legal support.
- Annapurna Project: One of the first few programs by the Indian government. It offers loans up to Rs. 50000 to women entrepreneurs in the food and catering industries.
- Udyogini Scheme: The Udyogini Scheme is designed for women who come from families with an annual income of less than Rs. 1.5 lakhs.
- Cent Kalyani Scheme: Cent Kaylani is a plan that provides loans up to Rs. 100 lakhs without the need for collateral or processing fees to expand SMEs.
- Mahila Udyam Nidhi Scheme: By offering hassle-free loans, the purpose is to promote modernization and technological growth in these small-scale enterprises.
- Women Entrepreneurship Platform (WEP): The Indian government, through the NITI Aayog, has launched the Women Entrepreneurship Platform, which brings together female entrepreneurs and sponsors eager to help them in one place. Right from incubation to skill training to assisting in marketing to help them meet legal compliance to funding assistance and building a community of like-minded people.
- SAMARTH: Twenty percent of seats in free skill development programs conducted under the ministry's skill development schemes will be allotted to women.
- Womaniya on GeM: Women entrepreneurs will be able to offer handicrafts and handloom, accessories, jute and coir products, home decor, and office furniture directly to various government ministries, departments, and organizations through the website. The program aims to foster female entrepreneurship on the outskirts of society to promote gender-equal economic growth.
- PMEGP Scheme: Under the scheme, Women entrepreneurs are eligible for 25% and 35% subsidies for projects set up in urban and rural regions, respectively. The personal contribution for women recipients is only 5% of the project cost, whereas it is 10% for the general group.

VII. CONCLUSION

Many barriers exist in the so-called cultural norms of Indian society. Strangely, a country that just became the first Asian country to complete a Mars mission in its first attempt is ranked 140 out of 156 countries in the World Economic Forum's (WEF) gender gap index 2021. It is important to advocate role models, build

significant business networks, and mentor women entrepreneurs. Women should be encouraged to take diverse career paths through policies and training. Women are expected to multitask in general, hence her part time commitment at work should not be overlooked and considered unfruitful. Necessary support should be extended. The task to empower women and provide assistance to compete and excel is not easy, hence we would need support from the community and government. While the government is working towards the upliftment of women by empowering them through various schemes, it is equally important that we as a society should be aware of the rights, benefits, and schemes offered.

VIII. REFERENCE

1. Demographic dividend - Wikipedia
2. Women Entrepreneurship (startupindia.gov.in)
3. Boosting women's entrepreneurship ecosystem a necessity in India (yourstory.com)
4. 7 Indian Government Initiatives to Help Women Entrepreneurs Smash the Glass Ceiling - Vakilsearch
5. Indian Government Initiatives To Help Women Entrepreneurs - Finaxis
6. GeM launches 'Womaniya' initiative for women entrepreneurs (smetimes.in)
7. Entrepreneurship, growth and opportunities (assets.kpmg)
8. The power of parity: Advancing women's equality in India, 2018 | McKinsey
9. Chart: Where Female Entrepreneurs Are Most & Least Common | Statista
10. GEM Global Entrepreneurship Monitor (gemconsortium.org)
11. Global Gender Gap Report 2021 | World Economic Forum (weforum.org)
12. https://www.researchgate.net/profile/Noel-Busch-Armendariz/publication/249685821_Empowerment_Practice_A_Focus_on_Battered_Women/links/6152611ad2ebba7be75230c1/Empowerment-Practice-A-Focus-on-Battered-Women.pdf
13. <https://eige.europa.eu/thesaurus/terms/1102>
14. <https://msme.gov.in/women-entrepreneurs>
15. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1782628>
16. <https://nasscom.in/system/files/secure-pdf/moving-towards-gender-parity.pdf>

NEW PERSPECTIVES IN HEI TOWARDS GLOBAL COMPETENCY: A MODULAR APPROACH TO ACADEMIC REFORMS BY EDUCATION TECHNOLOGY FOR THE SUSTAINABLE DEVELOPMENT

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ABSTRACT

With higher education becoming an international service, there is growing concern the world over about quality, standards and recognition. Consequent upon this trend, the debate on how benchmarks have to be evolved for ascertaining and assuring quality at different levels of higher education is significant. New methodology has taking the initiatives which will help our to student compete globally. Assessment of quality of education, this methodology looks into how the various policies and processes of the institution determine the educational provisions and consequently, the quality of its performance. The focus is on both the functioning of the institution as well as the outcome. A methodology adopted is based on the actual facts happening in the country by NAAC which will create a new perspective for all the HEI's. By the process of Continuous Evaluation, students' knowledge assessment is made and a proper path to success is created by the HEI's.

Recognizing, identifying and fostering the unique capabilities of each student, by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic sphere. As per the National Education Policy (NEP),

Keywords: NEP Best practices, Continuous Evaluation Process, curriculum, ICT, Teaching, learning and evaluation.

INTRODUCTION

Introduction With higher education becoming an international service, there is growing concern the world over about quality, standards and recognition. Consequent upon this trend, the debate on how assuring quality at different levels of higher education is significant. NAAC has identified the elements of the best practices that contribute to the efficient and effective functioning of the institution and they are called criterion statements and are seven in number. Here we discuss only 2 criterions (Curricular Aspects, Teaching Learning and Evaluation) as this paper discusses the innovative academic reforms. These criterions have to be evolved for ascertaining and assuring quality at different levels of higher education is significant. As a result students will acquire of in-depth. knowledge and understanding of international issues, an appreciation of and ability to learn and work with people from diverse linguistic and cultural backgrounds, proficiency in a foreign language, and skills to function and our students have the opportunity and challenge of living and working in a diverse and rapidly changing world to compete globally.

Curriculum Design: The curriculum is the foundation of an educational activity conceived by a HEI's. It is designed based on a multifaceted, comprehensive and well-defined curriculum periodically updated with student and faculty feedback. The following reforms are implemented

- a) **Design of Well-Defined Curriculum:** Every students admitted to college have a dream in his eyes, the designed curriculum will fulfill his dreams, there by the dream of the HEI also fulfilled under globalization, so that the knowledge and skills acquired by the stake holder will compete the world. periodically update and market oriented programmes (Job oriented).
- b) Curricular processes include selection and organisation of courses in order to translate goals into action. While many colleges under the affiliating system do not have the freedom to do it, universities, to a large extent, and autonomous colleges, to some extent, have the freedom to do so. It is heartening to find that a large number of programme options and a considerable number of professional/vocational courses have been chosen by most HEIs.

Most of the professional and technical programmes offered by the best HEIs in the country are acceptable to the global community. This is particularly so in the fields of information technology, engineering and management studies.

So we can offer add on/ vocational programs (skill oriented programs)

Proficiency in Foreign Languages. The ability to understand, read, write, and speak in more than one language enhances cross-cultural communication skills. The knowledge of additional languages opens doors to the understanding of other cultures and people who speak those languages.

Competitive Skills. The ability to compete globally entails the acquisition of extensive knowledge of international issues. To be able to compete, students need high-level thinking skills that enhance creativity and innovation. Students who gain a thorough understanding of the economic, social, and technological changes taking place across the globe enhance their ability to compete in the worldwide marketplace.

c) Collaboration with institutions of acknowledged repute known for the rigour of curricula and other academic strategies often enhance the quality of the programmes of an institution.

Reforms Needed: Flexibility in the design of Curriculum in tune with globalization.

Improving the skill set of the students, ultimately job should be confirmed with their skills.

Improvement in the Communication (Proficiency in languages) skills must take care with the beginning of the semesters. (This is a big challenge especially rural based student.

MOU with industries and research Centres.

More number of programs (or combinations) and having PG in the respective subjects

Teaching, learning and Evaluation

The prime object of higher education is imparting quality in teaching learning process and develop a prominent "Research Culture" in our education system.

The structure of teaching consists of three variables which operate in the process of teaching and create learning conditions for different situations. Firstly, the teacher is an independent variable, as he plans, organizes, leads and controls teaching. Secondly, the students are a dependent variable, since they are required to act according to the planning and guidance of the teacher. Thirdly, the intervening variable is the content and strategy of presentation which leads to interaction between the teacher and the taught. These three functions are performed by teaching, i.e. diagnostic, prescriptive and evaluative functions.

The Teaching-Learning process has four components: teacher, student, learning process and learning situation. Teaching and learning are interlinked. Teaching remains central to both learning and evaluation. There is an inter-relatedness between teaching objectives, learning experiences and evaluation. Evaluation is a process of determining the extent to which an objective is achieved; the effectiveness of the learning experience provided in the class room; and the accomplishment of goals set.

ICT is a major tool in the teaching and learning process. ICT=IT+other media. It has opened new avenues, like, Online learning, e-learning, Virtual University, e-coaching, e-education, e-journal, etc. The ICT brings more rich material in the classrooms and libraries for the teachers and students. The main objectives are developing time saving and effective teaching, understanding and application of the concepts, developing reasoning and thinking power, improving comprehension, speed and vocabulary, developing proper study habits, practice tests etc.

Reforms to be adopted in Teaching, learning and evaluation

Effective use of ICT in the academic development

Use of ICT in developing virtual laboratory. Use of ICT in online tutorials

Faculty members should prepare their own visual and teaching aids(animations and simulations) and make liberal use of, LCD, projector, computers, etc Colleges evolve a 'Class Guide and Mentor System' whereby each teacher is assigned about 20 students.

Enrichment programme for advanced learners and remedial teaching to slow learners goes a long way to improve learning. Online attendance (e-attendance) is maintained effectively so, that it saves time as compared to manual attendance.

Learning Process for Teachers

Training for the teachers is constantly conducted for the enrichment of teachers.

Workshop on Hands on projects must be conducted.

Apart from regular classes teacher must be able to train the students for Campus Preparation

(Aptitude, Reasoning, Group Discussion and HR Interview)

Communication classes must be conducted by the expert teachers.

Evaluation Process

Efforts made in the teaching and learning process must be reflected in the Evaluation process.

Continuous evaluation Process, Online objective type tests, Tests only on problems, Chapter wise tests should be conducted. Open book test should be conducted. Projects must be made compulsory (min. two students per batch)

Complete computerization of examination process, Test results must be notified by SMS alert both by students as well as parents.

Before examination test syllabus and test pattern must be displayed on the notice board. As soon as examination complete, the key answers must be displayed on the notice board and one copy of Question paper and key answer must be sent to library to keep it for the reference to students.

Repeated Internal Exams will be conducted for the students to score more by charging extra fee by the exam section adopted to achieve good marks in internal examination, there by preparing the students for annual exam. Feed back from the different stakeholder will be made regularly by online process.

Proper SWOT analysis is made every year for the improvisation of HEI's based on the results

CONCLUSION

Every HEI's have a vision to compete our students globally, so the better implementation of these reforms effectively is necessary. Alumni of the college can contribute significantly in the implementation of Academic reforms by financing as well as human resources.

REFERENCES

1. NEP Guidelines, Govt. of India U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics
2. 2007, Washington, DC, <http://nces.ed.gov/pubs2008/2008022.pdf>
3. Best Practices in Curricular Aspects by Francis Soundararaj Madhukar B S
4. Best Practices in Teaching, learning and evaluation: Soch H S Shyamasunder M S
5. Gautam, P.: Development of Programmed Instruction in Linear and Branching Styles and Studying the Performance in Relation to Creative Thinking and Level of Aspiration. Ph.D. (Edu.), Himachal Pradesh University, 1986.

SUSTAINABLE DEVELOPMENT GOALS AND LIBRARIES

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ABSTRACT

Sustainable Development Goals developed By UN nation for the betterment of society. Its development and satisfying future needs. Libraries are also participating in the fulfilment of these goals through various initiatives, activities and in different forms. Only delivery of documents is not a role of libraries but now they are taking part in the upliftment of society, satisfying basic needs of the people and environment.

Keywords: sustainable development in libraries, Sustainable Development Goals

INTRODUCTION

In the age of paperless society also libraries has importance due to their services and use of ICT enabled tools. Libraries are not just a storehouse of books but it is giving services with online tools, webportals, consortias, e-books, e-journals etc. Libraries are making every effort to reach to its clients and satisfy their information need. Libraries are Digital Libraries, Virtual Libraries.

IFLA, the International Federation of Library Associations and library associations and institutions in 150 countries, to ensure their readiness to support implementation of the SDGs in their country and locally through library services and programmes, including public access to ICT. Libraries provide an essential means of reaching the next billion by supporting digital inclusion through access to ICT, and dedicated staff to help people develop new digital skills.

Sustainable Development Goals (SDGS)

Living within our environmental limits is one of the central principles of sustainable development. One implication of not doing so is climate change.”

But the focus of sustainable development is far broader than just the environment. It focuses on healthy society. Meeting different people needs in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity.

Living within our environmental limits is one of the central principles of sustainable development. One implication of not doing so is climate change.

But the focus of sustainable development is far broader than just the environment. It's also about ensuring a strong, healthy and just society. This means meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity.

Sustainable Development Goals (SDGS) are also known as the Global Goals. United Nations Conference developed Millennium Development Goals in the year 2000 with the objectives to reduce hunger, preventing deadly diseases, and, expanding primary education to all children, among other development priorities till 2015.

In September 2015, the UN General Assembly approved the 2030 Agenda for Sustainable Development which includes 17 Sustainable Development Goals (SDGs), 169 targets and 232 indicators.



• Goal 1: No Poverty

Libraries can play a major role in bridging the gap between rich and poor.

- Literacy activities, access to rights for the poor, employment assistance and educational assistance will all contribute to the goal of poverty alleviation
- Libraries can help peoples to come out of poverty by providing them information about governmental policies, schemes etc available for derived people.
- People can get about the civil rights and fight for their basic needs.
- Libraries can provide data about employment opportunities. It will help them to know about opportunities

• Goal 2: Zero Hunger

Libraries of the Agricultural Universities, Colleges creates awareness among the people about various schemes in the field of agriculture, agricultural subsidy, agricultural products, machinery, services, buyers and various projects in the agricultural sector.

• Goal 3: Good Health and Well-Being

Health Libraries, Medical Libraries provides access to the results of medical research and information related to health services. Libraries can make awareness about healthy life style. Libraries through its activities, can make awareness about dos and don'ts for healthy life. The library should take the responsibility of conducting information literacy programs, follow-up training programs and health discussions to create awareness about such habits.

• Goal 4: Quality Education

Providing Quality education is the basic aim of library and information centres. Quality in the form of documents, information, documents, reference service and online services.

Libraries have made great efforts in delivering electronic information to users through online technologies. Through websites, webpages libraries are delivering E-books, e-journals, e-theses, video classes, records and online databases to their users. Libraries support formal teaching and learning, providing additional resources, internet access.

• Goal 5: Gender Equality

“The services of the public library are provided on the basis of equality of access for all, regardless of age, race, sex, religion, nationality, language or social status.” (IFLA UNESCO Public Library Manifesto, 1994)

Libraries can help childrens to build their interest and views. “Every Reader his or her book” the law of library science itself doesn't have any gender discrimination. Libraries must provide space for Every person who visits libraries.

• Goal 6: Clean Water and Sanitation

Green Library is one of the initiative towards the attainment of SDG. It gives importance to environment friendly atmosphere in library. IFLA has given Checklist, which includes green building project planning, financing, site selection, structure, construction, materials, climate, energy management, recycling as well as green information and communication technology (Green IT), user services, library facility management, strategic goals, marketing and PR, green building certificates etc.

• Goal 7: Affordable and Clean Energy

Libraries can reduce energy consumption, use of sunlight, environment friendly use of energy.

Library and information centres have to provide ICT facilities like LAN, E-resources, LAN, research room, mobile app with different facilities. Green Library concept to be adopted through reducing energy consumption, implementing sensor based auto power off or on system; implementation of user-friendly solutions; etc

• Goal 8: Decent Work and Economic Growth

Libraries can develop various skill development programs for their communities. Like computer literacy program, training on different computer application like word, excel, powerpoint, creative writing etc. Libraries can provide guidance to students for different competitive exams, vocational training, interview skills etc.

• Goal 9: Industry Infrastructure

Libraries can have collaboration with industries. It will help to raise fund for certain projects. Innovative and creative ideas for progress should be brought forward. Students, youth and the general public must come forward Libraries can arrange debates, discussions and seminars on industrial potential.

Libraries support the governments in smart cities agenda. National, state and territory libraries are pushing boundaries of data collection use and visualisation

• **Goal 10: Reduced Inequalities**

Libraries can provide their services to people of socially backward areas. Mobile Libraries is a unique example which reaches to every reader. This type of efforts helps to exchange books, ideas, cultural products with every part of society.

Goal 11: Sustainable Cities and Communities

Libraries can provide facilities like books, internet facilities. Libraries and cultural centres play important role in preservation of cultural heritage. It helps in overall progress of society.

• **Goal 12: Responsible Consumption and Production**

Libraries can make awareness among people about waste management, waste disposal of non-recyclable material. Libraries and documentation centres may greatly influence human behaviour. Awareness should be raised on sustainable practices linked with the circular economy, and the misuse of cosmetics and pharmaceuticals. Awareness can be created by conducting debates, seminars, exhibitions etc. awareness can be made among the people, provide them with up-to-date information against deforestation, pollution, unsustainable construction and land exploitation

• **Goal 13: Climate Action**

Green Libraries - Libraries can use environment friendly materials, practice energy saving option, Reduce waste and proper arrangement of waste materials, use recycled products, Reduce cost of energy used in the library and maintaining green environment, Effective use of natural resources.

• **Goal 14: Life below Water**

Libraries can provide various documents and non-book material available on marine life. With various sources of information libraries can exhibit their richness and educate people about their importance. Libraries can educate people on marine pollution, ecosystem, ocean acidification, overfishing etc.

• **Goal 15: Life on Land**

Libraries can focus on events related to biodiversity. Libraries can preserve knowledge of biodiversity, bioinformatics which will further help in research and development activities.

• **Goal 16: Peace, Justice and Institutions**

Peaceful co-operation between nations and within nations is essential if sustainable development is to be possible. An atmosphere of peace can only be created if there are strong governments to implement it. Libraries can also do a lot during this period. Libraries should take on the responsibility of promoting discussions and seminars focusing on cultural heroes and their writings as well as political leaders and their activities and individuals, and educating citizens on reconstruction. Within this goal libraries can provide access to information, through their print and electronic resources, public access terminals and free Wi-fi, Libraries clearly support this target.

• **Goal 17: Partnership for the Goals**

Several library organisations operate at international level. Mutual cooperation and partnership are essential if any progressive goals are to be achieved. Progress can only be achieved if there is this cooperation between institutions, between states, between countries and between individuals. partnership to visit each other's countries and other regions, to exchange ideas, to do research, to go and work in different countries, and to organize cultural events. This will make big developments in the world. Libraries partner with governments, business, civil society, educators, charities and non-profit organisations to progress our shared interest in achieving a better future for all humankind

CONCLUSION

Libraries and information centers are knowledge institutes which support the needs of information society and assist users in meeting the needs for future research by attaining sustainable development goals. Information support and information literacy are integral pillar of sustainable development, which support access to information and knowledge. Libraries can be made more sustainable by exchanging information materials, sharing community resources, and ensuring that everyone has access to information. Libraries cooperate internationally on interlibrary lending, developing resource sharing activities.

REFERENCES

1. <https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/libraries-development/documents/sdg-storytelling-manual.pdf>
2. <https://sustainabledevelopment.un.org/partnership/?p=10909>
3. <https://www.sd-commission.org.uk/pages/what-is-sustainable-development.html>
4. Sachs, J. D. (2012). From millennium development goals to sustainable development goals. *The Lancet*, 379(9832), 2206–2211. Accessed at [https://doi.org/10.1016/S0140-6736\(12\)60685-0](https://doi.org/10.1016/S0140-6736(12)60685-0)
5. IFLA (2013). *The Role of Public Libraries in the Attainment of Botswana’s Vision 2016*. Accessed at <http://library.ifla.org/258/1/201-radijeng-en.pdf>
6. IFLA Libraries, Development and the United Nations 2030 Agenda. Accessed at [https://www.ifla.org/libraries-development#:~:text=Over%20the%20last%20few%20years,\(ICT\)%20in%20the%20framework.](https://www.ifla.org/libraries-development#:~:text=Over%20the%20last%20few%20years,(ICT)%20in%20the%20framework.)
7. Mbagwu, F C and others (2020). Achieving Sustainable Development Goals Two and Three: Role of Academic Libraries. *Library Philosophy and Practice (e-version)* 3995. Accessed at <https://digitalcommons.unl.edu/libphilprac/3995>
8. Business in India keen: delegation Archived 30 December 2020 at the Wayback Machine, Dec 2017. <https://www.looppng.com/business/businesses-india-keen-govt-delegation-71103>
9. Council of Europe /EBLIDA Guidelines on Library Legislation and Policy in Europe, 2000 19 <http://www.eblida.org/Documents/Council-of-Europe-EBLIDA-Guidelines-on->
10. Cyr, C and Connaway, L S (2020) Libraries and the UN Sustainable Development Goals: The past, present, and future. 83rd Annual Meeting of the Association for Information Science & Technology October 25-29, 2020. *Proc Assoc Inf Sci Technol*.

INDIA'S PERFORMANCE IN GOAL 3: SDGs 2030

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The United Nations (UN) has introduced the 17 goals and 169 targets in Sustainable Development Goals (SDGs) 2030 which is accepted and implemented by 193 member states of United Nations. The main aim behind this is reduce poverty and bring peace and prosperity in world. India adopted the concept of SDGs much before the announcement by United Nation Organization. "Sabka Sath Sabka Vikas" under this the Prime Minister of India introduced and implemented many schemes for poor and needy people of the country such as Pradhan Mantri Jan Dhan Yojana, Annapurna Yojana, Pradhan Mantri Awas Yojana, Pradhan Mantri Garib Kalyan Yojana, Pradhan Mantri Ujjwala Yojana and so on. By taking into consideration 17 goals of SDGs 2030 as interrelated to each other the major area of improvement taken into consideration was Health. A country can grow faster if it has healthy manpower. For this purpose, the Government of India along with the participation of 10 states has introduced many health care schemes for the citizens of India. This research paper talks about the SDGs 2030, the initiatives taken by the government for fulfillment of the goal 3 of health, problems arising in implementation of the schemes and some practical suggestions to overcome these problems.

Keywords: SDGs, MDG, NITI Aayog, Health Care Services, United Nations Organization

INTRODUCTION**WHAT ARE SDGS 2030**

The advancement of well-being of the citizens should be in sustainable way for the overall development of all countries. What is required to achieve the goal of the overall development is three welfare targets namely, 1) Social Inclusion, 2) Economic Growth, 3) Environmental protection.

To build prosperous, equal and secure world, 193 member states at United Nations Organization have set a historic plan of a asset of 17 SDG to be fulfilled till the year 2030. These goals along with 169 targets at the General Assembly summit at the United nation were adopted by international community in September, 2015. This came into effect on 1st January, 2016. This 15 years plan to achieve goals is made by taking into consideration three welfare targets and two independent and new area.

Social Inclusion	: Goals 1 to 6
Economic Goals	: Goals 7 to 11
Environmental Goals	: Goals 12 to 15
Peace	: Goal 16
Partnerships	: Goal 17

The SDGs aim at transforming the lives and livelihood of the people across the globe by taking developmental actions in the crucial areas such as ending poverty and hunger, providing healthy lives and quality education, protecting environment, achieving gender equality, providing modern energy, promoting sustainable economic growth, reducing inequality, etc. till the year 2030. Also known as the 2030 Agenda for Sustainable Development, the SDGs aim at transforming the lives and livelihood of the people across the globe.

Birth of Idea of Sdg 2030: -

The SDGs for 2030 came from the set of 8 developmental goals namely Millennium Development Goals (MDG) from 2015 which was set up in the year 2000 to be achieved in 15 years from 2000 to 2015. The MDGs was the first initiative under which measurable goals and targets were established from 2000 to 2015. There were significant political and economic changes in the world during these 15 years. Therefore, to safeguard and maintain the developmental goals and targets of MDGs, the formulation of SDGs was initiated in the year 2012.

COMPONENTS OF SDGS are 1) Inter – Connectedness of problems (No problem is national but they are affecting other countries as well), 2) multi-dimensional approach of 17 goals and 169 targets, 3) Means of Implementation which is specified in every goal, 4) Monitoring and reviews of progress of SDGs at national, regional as well as global levels with a Global Indicator Framework of 243 indicators, 5) The Voluntary National Reviews (VNRs) aim to facilitate the sharing of experiences.

SDGS AND INDIA

The Prime Minister of India attended the UN Summit held in New York in 2015 and highlighted that – “Much of India's development agenda is mirrored in the SDGs.” This shows that even before the formulation and adoption of 17 goals of SDGs, India had initiated many developmental programmes.

Only setting goals is not enough to achieve the goals. What is important is follow up. India is the first country who submitted Voluntary National Reviews in the year 2017. To oversee the implementation of SDGs India has well established Institutional Set Up Namely 1) NITI Aayog and 2) The Ministry of Statistics and Programme Implementation (MoSPI).

OBJECTIVES OF STUDY

- 1) To understand the concept of SDGs 2030.
- 2) To study the India's Growth in Goal 3.
- 3) To examine the challenges in fulfillment of Goal 3.
- 4) To make suggestions to improve the same.

RESEARCH METHODOLOGY

For the purpose of this research secondary data is collected from various websites mentioned in the references. This research paper is descriptive in nature.

India and Sdg 3: - Good Health and Well Being

Any nation can be developed overall if the young generation of the nation is healthy. Healthy citizens are the backbone of healthy nation. Therefore, in SDGs 2030 out of 17 goals 3rd goal focuses on ensuring healthy lives and promoting well-being for all at all ages.

Following are the key Points of Goal 3 to be Achieved by 2030 as Mentioned in SDGs: -

- 1) Reduce the global maternal mortality ratio.
- 2) End preventable deaths of newborns and children under 5 years of age.
- 3) End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
- 4) Reduce premature mortality from non-communicable.
- 5) Strengthen the prevention and treatment of substance abuse.
- 6) Reduce the number of global deaths and injuries from road traffic accidents.
- 7) Ensure integration of reproductive health into national strategies and programmes such as family planning.
- 8) Achieve universal health coverage, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines.
- 9) Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
- 10) Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control.
- 11) Support the research and development of vaccines and medicines for the communicable and non-communicable diseases and provide access to affordable essential medicines and vaccines.
- 12) Substantially increase health financing and the recruitment, development, training and retention of the health workforce.
- 13) Strengthen the capacity of all countries for early warning, risk reduction and management of national and global health risks.

Performance of India on Goal 3

By considering health as the important aspect of the growth India has been actively working to achieve every aspect of Goal 3 to strengthen the health sector in the country. The Central Government of India with the help of all state governments have undertaken various initiatives such as: -

- a) The National Health Mission (NHM) divided in to National Rural Health Mission (NRHM) and National Urban Health Mission - 11 - (NUHM),

- b) AYUSHMAN BHARAT - Pradhan Mantri Jan Aarogya Yojana (PMJAY),
- c) Mission Indradhanush,
- d) The Revised National Tuberculosis Control Programme (RNTCP),
- e) The National Leprosy Eradication Programme,
- f) The Integrated Disease Surveillance Programme (IDSP),
- g) The National Mental Health Programme (NMHP),
- h) The National Programme for control of blindness,
- i) The National Programme for Prevention and control of cancer, diabetes, cardiovascular diseases and stroke (NPCDCS),
- j) Pradhan Mantri Jan Aushadhi Yojana etc.

Only introducing various programmes is not sufficient to achieve the desired goals. For successful implementation and for positive results continuous measurement of performance is required. To measure the performance towards Goal 3 India has identified five national level indicators which covers four out of 13 SDG targets. The following are the five indicators: -

- a) Maternity Mortality Rate,
- b) Under-five Mortality Rate,
- c) Immunization Coverage in Children,
- d) Tuberculosis Incidence,
- e) Health Workforce.

This Measurement is done by

- 1) NITI Aayog (National Institution for Transforming India) and
- 2) The Ministry of Statistics and Programme Implementation (MoSPI)

According to the report submitted by NITI Aayog on 3rd June, 2021 the progress of SDGs 2030 on 3rd June, 2021 the progress of SDGs 2030 is monitored through Index and Dashboard 2020-21. These scores range between 0 to 100 and if the score is 100 it signifies it has achieved the 2030 targets. Performance of states and Union Territory are classified as below: -

- 1) Aspirant : 0-49
- 2) Performer : 50-64
- 3) Front Runner : 65-99
- 4) Achiever : 100

India’s overall performance in Goal 3 is increase from 61 to 74 according to this report.

Top-5 States	75	Kerala
	74	Himachal Pradesh, Tamil Nadu
	72	Andhra Pradesh, Goa, Karnataka, Uttarakhand
	71	Sikkim
	70	Maharashtra
Bottom-5 States	61	Chhattisgarh, Nagaland, Odisha
	60	Arunachal Pradesh, Meghalaya, Rajasthan, Uttar Pradesh
	57	Assam
	56	Jharkhand
	52	Bihar

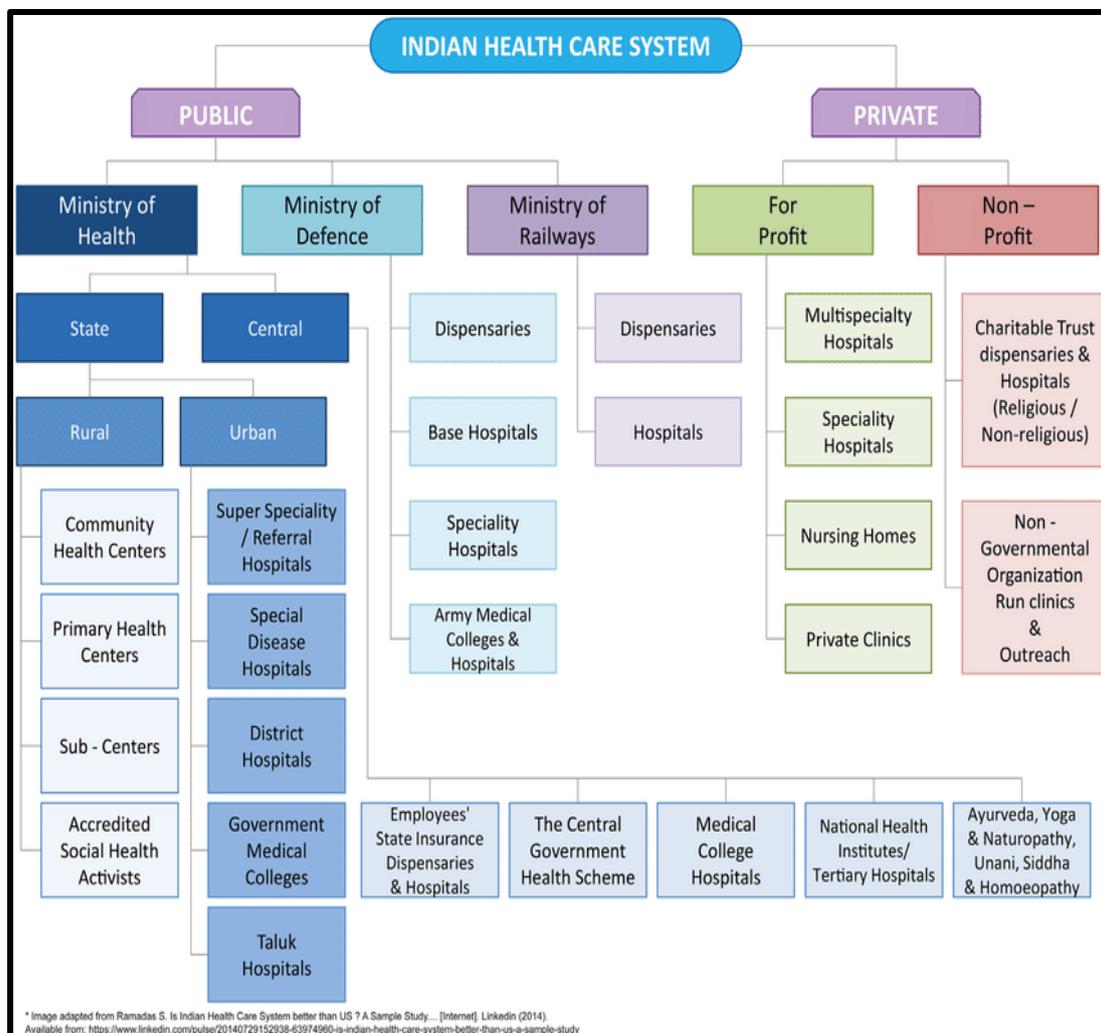
The top-five and bottom-five States in SDG India Index 2020–21:

The Government State as well as Central has introduced 17 Health care schemes for the citizens of India to fulfill the goals of SDG 2030. They are as under: -

SR.NO.	NAME OF SCHEME	GOVERNMENT
1	Ayushman Bharat	Central Government
2	Awaz Health Insurance	Kerala State Government
3	Aam Aadmi Bima Yojana	Central Government
4	Bhamashah Swasthya Bima Yojana	Rajasthan State Government
5	Central Government Health Scheme (CGHS)	Central Government for its employees
6	Chief Minister’s Comprehensive Insurance Scheme	Tamilnadu State Government
7	Employees’ State Insurance Scheme	Central Government
8	Karunya Health Scheme	Kerala State Government
9	Mahatma Jyotiba Phule Jan Arogya Yojana	Maharashtra State Government
10	Mukhyamantri Amrutum Yojana	Gujarat State Government
11	Pradhan Mantri Suraksha Bima Yojana	Central Government
12	Dr YSR Aarogyasri Health Care Trust	Andhra Pradesh State Government
13	Employees and Journalists Health Scheme	Telangana State Government
14	Rashtriya Swasthya Bima Yojana	Central Government
15	Universal Health Insurance Scheme	Central Government
16	Yeshasvini Health Insurance Scheme	Karnataka State Government
17	West Bengal Health Scheme	West Bengal State Government

Health Care System in India

Apart from these Health Insurance Schemes in India has a combination of Public and Private health care funds. The public and private hospitals play an important role in achieving the goal 3 of SDGs 2030.



* Image adapted from Ramadas S. Is Indian Health Care System better than US ? A Sample Study... [Internet]. LinkedIn (2014). Available from: <https://www.linkedin.com/pulse/20140729152938-63974960-is-indian-health-care-system-better-than-us-a-sample-study>

PUBLIC HEALTH CARE SYSTEM**Public Health Care System is Managed by****1) Ministry of Health, 2) Ministry of Defence and 3) Ministry of Railway**

The public hospital system is essentially free for all Indian residents except for some services. The Indian public health sector encompasses 18% of total Ambulatory Care and 44% of total In-patient care. In India Lower income group people prefer to utilize the services from public health care system than Middle- and Upper-income groups. The public health care system was basically developed to provide a means to healthcare access regardless of socioeconomic status or caste. However, reliance on public and private healthcare sectors varies loudly. Several reasons are observed for relying on private sector rather than public sector such as: - 1) Poor quality of care,

2) Much of the public healthcare sector caters to the rural areas.

3) Rural as well as remote areas rely on inexperienced and unmotivated medical staff.

4) Public hospitals in rural areas are far from residence.

5) Waiting time is more.

PRIVATE HEALTH CARE SYSTEM

This is mainly divided into profit making organizations and non-profit making organizations which are run by NGOs and charitable trusts. In India Private hospitals and medical care centers are performing a major role in health care system.

India has a total of 43,486 private hospitals, 1.18 million beds, 59,264 ICUs, and 29,631 ventilators. On the other hand, there are 25,778 public hospitals, 713,986 beds, 35,700 ICUs, and 17,850 ventilators. **Total**

Private Infrastructure Accounts for Nearly 62% of India's entire Health Infrastructure

The Union Territories- Daman & Diu, Dadra & N Haveli and 15 states (Andhra Pradesh, Bihar, Dadra & N Haveli, Daman & Diu, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, Telangana, Uttar Pradesh and Uttarakhand) have more private hospitals, beds, ICUs, and ventilators. These 15 states account for approximately 74.25% of India's projected population for 2020. Private Infrastructure forms 69-70% of all health infrastructures in these 15 states. Private infrastructure in other states forms nearly 35-36% of all health infrastructures.

To overcome this problem the government introduced Ayushman Bharat Yojana under which the medical services are not only provided in public hospitals but also in private hospitals too.

CONCLUSION

- 1) In 2015 United Nations adopted the Sustainable Development Goals (SDGs) which is also known as Global Goals. These goals are taken as a universal call to action to end the poverty, protect the planet and ensure that all people will enjoy peace and prosperity by the year 2030. For this purpose, 17 goals are set by the United Nations which should be achieved by the various countries with the new concept of Partnership. India has played a vital role in this process. The Prime Minister of India was present while framing the SDGs 2030 goals and targets.
- 2) "Sabka Sath Sabka Vikas" – The statement of Prime Minister of India is the main motto of SDGs 2030. According to this a country with healthy citizens can grow faster than any other country. The Government of India has taken several measures to provide good health related facilities to the citizens.
- 3) The Goal 3 of SDGs talks about the healthy country and health related services to be adopted by all countries.
- 4) The Government of India has introduced many health care schemes for the benefits of poor and needy people as well as all citizens.
- 5) Apart from central government, 10 state governments have also introduced Health Insurance Schemes for the needy people. These schemes are available not only in public health care centers but also in private health care centers too.
- 6) Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) is introduced by the Central Government which aims to reduce the average healthcare expense of people by providing quality generic medicines at affordable prices to anyone.

- 7) It has been observed that in rural areas untrained medical assistants' number is more. Therefore, now a days the government is not only arranging training programmes for them at rural area but also making arrangement of all required medical facilities at their health centers.
- 8) During COVID-19 pandemic the Government of India has been providing free testing and treatment at government testing centers and hospitals. Under the nationwide vaccination drive against COVID-19, all citizens are entitled to free immunization. To simplify the process of free vaccination, the government introduce the mobile app through which one can register or on the Co-WIN (Covid Vaccine Intelligence Work) portal and pre-book a vaccination appointment.
- 9) Only introduction of schemes cannot bring success. Therefore, the government has undertaken various awareness campaign through hoardings, pamphlet, enquiry counters at Public Health Care Centers etc.
- 10) The regular measurement of the performance of these schemes is done by the two departments of the government namely 1) NITI Aayog and 2) The Ministry of Statistics and Programme Implementation (MoSPI).
- 11) As per the NITI Aayog report, India is in Performer group with 52 index number (Overall performance) in achievement of Goal 3 of SDGs 2030.
- 12) In spite of all these efforts India is still on the ranking of 52 index number. This is because the poor faith on public health care schemes and systems, poor health care services at public health care centers, untrained medical staff, lack of trained doctors, lack of awareness amongst the public, a smaller number of hospitals in rural areas (distance from residence of the patient is far).

SUGGESTIONS

- 1) The government needs to take more awareness programmes at educational institutions, private offices, public places and through media.
- 2) The Public Health Care Centers should have good infrastructure facility at reasonable rate.
- 3) Services at Public Health Care Schemes should be improved. The staff of the government hospital should be more polite and sincere in their work.
- 4) The trained staff should be placed in government hospitals and in rural area. If the number of trained medical staff is not sufficient then the regular training programmes should be conducted for untrained and unskilled medical staff.
- 5) Only 10 State governments have their health care schemes implemented along with the central government schemes. Other states should take initiative to provide health care services to the public.
- 6) Many people are either not aware about the state government schemes or central government schemes or both. In such case wherever state government has introduced health care services there should be some link through user friendly app between state and central government schemes. If the beneficiary is not eligible for state government scheme, then he can check his eligibility immediately and automatically with central government schemes.
- 7) There should be a seamless app which enable the beneficiary to avail the scheme of central and state government wherever he is eligible.
- 8) All governments schemes should be made available at all private health care centers also through partnership projects by the Public and Private Health Care Centers.
- 9) The Process of adopting government schemes can be made faster so that the beneficiary can take the benefit of all facilities without much waiting time.
- 10) The trained and experienced doctors should be made available daily at Public Health Care Centers.
- 11) For the awareness progroammes government can select and avail the services of Brand Ambassador for all health-related schemes of the government. Such as Shri Amitabh Bacchan is the Brand Ambassador for TB, Polio awareness programmes.

REFERENCES

- 1) <http://www.measuredhs.com/pubs/pdf/FRIND3/FRIND3-Vol1AndVol2.pdf>
- 2) <http://www.ipsnews.net/2020/07/pathway-universal-healthcare-india/>

- 3) <http://qz.com/324487/modis-ambitious-health-policy-may-dwarf-obamacare/>
- 4) <https://doi.org/10.4103%2F2230-8598.109305>
- 5) [State-wise-estimates-of-current-beds-and-ventilators_24Apr2020.pdf \(cddep.org\)](#)
- 6) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5144115>
- 7) <http://www.measuredhs.com/pubs/pdf/FRIND3/FRIND3-Vol1AndVol2.pdf>
- 8) <https://www.acko.com/government-health-insurance-schemes-in-india/#what-is-a-government-health-insurance-scheme>
- 9) https://en.wikipedia.org/wiki/Healthcare_in_India
- 10) <https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=1723952>
- 11) <http://www.niti.gov.in/documents/reports>
- 12) <https://www.in.undp.org/content/india/en/home/post-2015/sdg-overview/goal-3.html>
- 13) <https://www.orfonline.org/research/onward-to-the-sustainable-development-agenda-2030/>
- 14) http://164.100.47.193/Refinput/Research_notes/English/04122019_172212_102120495.pdf
- 15) <https://pib.gov.in/PressReleasePage.aspx?PRID=1766289>
- 16) <http://www.sdgindia2030.mospi.gov.in/dashboard/sdg-metadata>
- 17) https://in.one.un.org/wp-content/uploads/2018/10/Niti_aayog_English_UNDP_SDG_Booklet_16thMarch185b25d5b25d5b15d.pdf
- 18) <https://in.one.un.org/page/sustainable-development-goals/>

OVERVIEW OF GLOBAL GREEN RETAIL PRACTICES – A REVIEW**Dr. Sulbha Alope Dey**

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ABSTRACT

The urban population in India's GDP shot up from 29% in 1951 to 60% in 2001 and it is growing continuously, migration to cities and towns grows rapidly in anticipation of higher income opportunities provided by these epicenters. The rapid growth in urbanization is one of the main reasons for the growth of the retail industry in India. The retail industry is highly resource-intensive and it involves a variety of activities like manufacturing, storage, distribution, packaging, etc. which have an unfavorable effect on the environment in some or the other way. Green retailing can be the best solution to environmental issues. Sustainable retailing is one of the important subsets of sustainable marketing. Sustainable retailing means reducing waste, conserving resources and energy and following less polluting practices for sustainable development. While sustainability awareness is growing in India, it is still fairly limited. This study is an attempt to identify the environmental best practices of the leading global retailers in the world and to examine in detail their strategies and tactics so that the Indian retailers can take insight from them.

Keywords: Retail, Green Practices, Global Retailers, India.

INTRODUCTION

The urban population in India's GDP shot up from 29% in 1951 to 60% in 2001 and it is growing continuously, as migration to cities and towns grows rapidly in anticipation of higher income opportunities provided by these epicenters. The rapid growth in urbanization is one of the main reasons for the growth of the retail industry in India (1). However, the Retail industry is also mainly responsible for environmental degradation and depletion of natural resources. Green retailing can be the best solution to environmental issues. Sustainable retailing is one of the important subsets of sustainable marketing. Sustainable retailing means reducing waste, conserving resources and energy and following less polluting practices for sustainable development.

OBJECTIVES OF THE STUDY

- 1) To identify the environmental best green practices of the leading global retailers in the world.
- 2) To examine in detail their green strategies and tactics.

RESEARCH METHODOLOGY

In order to overview global green retail practices, this study adopted a descriptive research methodology. This study is purely based on secondary sources of literature.

REVIEW OF LITERATURE

Jayashree Ramanan and K.P.V. Ramankumar (2014) analyzed eco-friendly practices in retail with relevance to supply chains and store management in the context of the Indian economy. He has also identified the areas where green practices can be adopted in Indian retail.

World Wide Fund for Nature (2014) threw light on the green retailing practices adopted by global retailers. This report also attempts to make recommendations to Indian retailers to adopt these practices to save environment as well as to meet the challenges of an increasingly globalized and competitive market place.

Ritu Sinha (2012) stated that a range of activities like manufacturing, storage, distribution, packaging, etc which have an adverse effect on environment some or the other way. Green retailing means reducing waste, conserving resources and energy and following less polluting practices for sustainable development.

SIGNIFICANCE OF THE STUDY

Rapid urbanization has increased the growth of retailing. The retail industry is highly resource-intensive and it involves a variety of activities like manufacturing, storage, distribution, packaging, etc. which have an unfavorable effect on the environment in some or the other way. There is an urgent need of adopting green practices in retailing. Green Retailing can contribute to conserving natural resources and protecting the environment. While sustainability awareness is growing in India, it is still fairly limited. Assessing the readiness of Indian retailers to meet the challenges of sustainability challenge is difficult, given the lack of disclosure and reporting of sustainability initiatives (WWF,2014). The green initiatives undertaken by some of the largest global retailers like Wal-Mart, Amazon, Tesco, etc. can be a readily available roadmap for the Indian retailers.

Overview of Global Green Retail Practices

Walmart: Walmart has aimed to reduce Greenhouse gas emissions. Since 2017 a total of more than 416 million metric tons of Greenhouse gas have been reduced by them. It is working on harvesting enough wind, solar and energy sources with 100% renewable energy by 2035. It is planning to reduce the emission from all its vehicles by 2040. According to the U.S. Environmental Protection Agency (EPA), the refrigeration system in a typical supermarket has a leak rate of 25 percent. Wal-Mart realized this opportunity to come up with an innovative refrigeration system known as a secondary loop (WWF, 2014). It has adopted low-impact refrigerants for cooling and electrified equipment for heating in its stores. It has diverted 81% of waste from landfills and incineration by 2020. In 2020 its 59% private brand packaging was recyclable, reusable or industrially compostable it is aiming to make it 100% by 2025 (3).

ALDI: ALDI is using 62% reusable, recyclable or compostable packaging. It uses 100% green energy. It's 53% of daily Coffee products are taken up from environmentally friendly sources. It also takes initiative in the donation of food as its waste management practices (4).

Amazon: Amazon is planning to reach a zero carbon emission goal by 2040 and to perform its operations with 100% renewable energy by 2025. It uses a rooftop solar system which helps to generate as much as 80% of the annual needs of a single facility's energy needs. Amazon announced in 2020 to become the first NET-ZERO carbon arena with 100% use of renewable energy. It ordered 100,000 electric delivery vehicles to reduce carbon emissions. To reduce the use of packaging it looks carefully at the material and processes behind all the boxes, mailers and other packing material. It is developing fully autonomous delivery innovations 'Amazon Scout' and 'Prime Air' drones to deliver the packages to its customers without the use of any delivery vehicle (7).

Kroger: Kroger to respond to environmental issues has committed to reducing unnecessary packaging, using recyclable packaging and developing better recycling infrastructure, giving recycling options to customers, reducing waste, and using natural resources. 81% of the waste has been diverted from landfills by Kroger. The amount of food waste has been reduced by 7% by it. It is investing in low-carbon technologies and using more renewable energy sources. It is using solar energy extensively. It uses its food waste and food production by-products to produce renewable biogas (6).

Home Depot: The noticeable environmental friendly practice of Home Depot is to sell green products and encourage customers to adopt green ways of life. In 2020 it sold more than 159 million units of Energy Star products, which saved the energy cost over \$ 1 billion and reduced 5 million metric tons of carbon emission. It also sold water saving products which helped to reduce the annual water consumption by 60 billion gallons which in turn have saved more than \$ 726 on water bills. The solar power installation for customers by them helped to generate 34000 kilowatts of energy. From 2017 to 2020 it has modified the packaging of 366 packages in order to reduce their size and materials. It is compulsory even for the suppliers of Home depot to supply green materials. It has the program "Eco-Action" which encourages customers to adopt environmental friendly practices at the individual levels such as saving water, use of solar energy etc. (5).

Inditex: Inditex has replaced regular light bulbs with LED bulbs for all its stores built before 2005 (WWF, 2014). Inditex has also moved towards renewable sources of energy by installing 850 kW wind turbines (Inditex, 2011).

IKEA: IKEA had bought 2 wind farms in Poland with a total capacity of 28 MW. It uses taps fitted with a pressure compensating aerator which adds air to the flow, thus reducing water use by 40 percent (IKEA, 2012). IKEA has committed that every new store/distribution centre/building will be the most sustainable at that point of time. It uses a store design tool – the IKEA Energy Model - which enables it to simulate the different heating, lighting, cooling and energy systems for building more efficient stores. It focuses on selling energy-efficient products through its retail shops. IKEA has also developed a 'Sustainability Product Score Card' for assessing the sustainability of its products. (WWF,2014).

Tesco: Tesco reduced its greenhouse gas emissions per case of goods delivered, compared to its earlier year emissions. It has achieved this reduction by travelling fewer miles, reducing trips, using fuels with lower carbon emissions and alternative modes of transport (Tesco, 2012).

Woolworth: Instead of wasting, Woolworths donated an excess of 8,390 tons of food to food relief organizations. Similarly, food not suitable for retail is supplied to farmers to be used as feed. It is also a pioneer in the recycling of electronic goods. It recycled 1,528 kg of mobile phones, 92,803 printers (including cartridges) and 810 kg of batteries in 2012. Woolworths is the only which has followed all three principles for managing its waste. Woolworths saved 208 ml of water by using various efficiency measures. It harvested 23.2 ml of rainwater at its distribution centers (Woolworths Limited, 2012).

RECOMMENDATION AND CONCLUSION

Retailers play an essential role in saving the environment. Global retailers like IKEA, Amazon, Walmart, etc. have incorporated sustainability throughout their operations and supply chain. The Indian retail sector is divided into two parts organized and unorganized. Some retailers specifically organized retailers in India have taken certain steps to adopt environmental friendly practices in their business operations but the unorganized retail sector of India is comparatively much behind to meet the standard and best practices adopted by the global retailers. Green global practices provide a guiding path for the Indian retail industry to improve on their conventional thoughts of sustainability. Global green retail practices give new insight into the areas of energy conservation and emission reduction, packaging, supply chain, waste reduction and recycling, water conservation, green building etc. to Indian retailers. There is an urgent need to create awareness among the retail sector most prominently the unorganized sector to adopt green retail practices. Government, NGOs, Educational Institutions, Retail organizations, Trade associations and media can play an important role in creating the required awareness among Indian retailers and to save our mother earth.

REFERENCES

Jayashree Ramanan and K.P.V Ramankumar (Jan 2014), Journal of Business and Management, Vol-16, Issue-1, pp 118-121.

WWF report (2014), Global Practices in Promoting environmental sustainability A Roadmap for Indian Retail.

Ritu sinha (2012), Green retailing a step towards environmental commitment, Insight to Retailing in the 21st Century edited by H.S.Chimma & Kashinath Jadhav, published by Himalaya publication.

IKEA. (2012). IKEA Group Sustainability Report.

Inditex. (2011). Annual Report.

Lewis, J. G. (2003). Sustainability and the Waste Management Hierarchy .

TESCO. (2012). Corporate Responsibility Review.

Woolworths Limited. (2012). Corporate Responsibility Report.

WEBSITES

- 1) http://be.rsagroup.com/content/filestore/Public%20Files/RSA_The_Retail_Series_-_Paper_3_Sustainable_Retail_.pdf
- 2) <https://www.dnb.co.in/IndianRetailIndustry/overview.asp>
- 3) <https://corporate.walmart.com/purpose/sustainability>
- 4) https://corporate.aldi.us/fileadmin/fm-dam/CR_Progress_Report_2022/CR_Progress_report_2022.pdf
- 5) <https://corporate.homedepot.com/responsibility/reducing-environmental-impact>
- 6) <https://www.thekrogerco.com/sustainability>
- 7) <https://sustainability.aboutamazon.com/environment/sustainable-operations>

GENERAL PROBLEM OF ACQUIREMENT IN INDIA: ESTIMATION OF CONVENTIONAL PROCESS, PROVOCATION, AND REFINEMENT

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ABSTRACT

The current review evaluates the public obtainment framework and late change drives in India and layouts the requirement for changes in the institutional systems. There are a few issues in the public obtainment exercises in India, which originate from divided methods and rules, absence of straightforwardness, inescapable anomalies, and inaccessibility of adequate acquisition experts. The new drives to lay out a steady and straightforward public obtainment framework have not yielded the ideal outcomes. The rise of the act of e-acquirement as a crucial instrument in coordinating the public assistance conveyance and great administration, nonetheless, shows some positive progress towards a straightforward, responsible, and serious acquisition system. Albeit General Financial Rules (GFRs) and other acquisition manuals are comprehensive in nature, these should be supported by administrative power.

INTRODUCTION

As of late, the issues concerning public obtainment has gotten expanded consideration from the scholarly world and strategy creators because of its imperative job in open monetary administration (PFM) frameworks. A well-working and productive public obtainment framework resolves issues like shortcoming, debasement, and waste (Tabish and Jha, 2011), and in this way, it assists the improvement with handling by working on the policy implementation. The vital and productive allotment of government use (public acquisition) is likewise urgent for meeting the country's financial responsibilities. Without a doubt, a sound public acquirement framework isn't just a moral necessity yet in addition a financial and social one. In spite of its development as an essential component of good administration, the public obtainment framework in India keeps on experiencing a few shortcomings. In the course of the last many years, the nation has started a progression of change measures in the framework to accomplish the best incentive for public spending. Nonetheless, the change drives in the acquirement interaction have not yielded the ideal outcomes.

Public acquirement represents a huge degree of public from one side of the planet to the other. It comprises around 18% or a greater amount of the total national output (GDP) across the nations. In 2014, the assessed public obtainment was 31% in the OECD nations (OECD, 2017) while it was around 18-28 percent of the GDP in India (UNODC, 2014). Taking a gander at the use design, the public authority consumption in India has developed from INR 12,742 billion to INR 17,429 billion over the most recent six years (Ministry of Finance, 2018). A couple of Union services, specifically, Defense, Railways, and Telecom dispense roughly 49% of their separate spending plan for public acquirement. Thinking about such a huge scope public consumption on acquisition, smoothing out the acquirement cycle in the nation has become basis. Dissimilar to numerous nations, India doesn't have an exhaustive obtainment regulation, and the acquisition system in the nation seems, by all accounts, to be divided and conflicting regarding rules, guidelines, and methodology (Jones, 2007).

Considering this foundation, the current review endeavors to survey the institutional component, difficulties, and change drives in open obtainment in India. The appraisal of the present acquisition system in India checks out at the similarity of the current guidelines and guidelines to the essential standards of public acquirement. The concentrate likewise illuminates the requirement for additional changes to address the weaknesses and difficulties of this acquisition framework.

The Nature of Public Procurement

Public acquisition includes buying of labor and products by various substances like services and branches of the public authority for public assistance conveyance, and it envelops exercises going from appraisal of obtainment needs to grants of agreement and last installment (Hunja, 2003; McCrudden, 2004). A proficient acquirement framework shows up as a solid component of the public consumption the executives frameworks by aiding a substance in taking suitable monetary choices and recognizing the expected speculation amazing open doors (Lewis-Faupel et al., 2014). Notwithstanding, the supportive of curement frameworks in numerous nations are obliged by a few bottlenecks, and the requirement for changes has been definitely standing out from the partners, for example, obtaining substances, strategy creators, and acquirement experts (World Bank, 2016). While accomplishing seriousness, improving straightforwardness, and decreasing defilement stay the targets of change drives, especially in creating and developing business sectors, the consequences of the changes have not been acceptable (Ambe and Badenhorst-Weiss, 2012). Dissecting the public acquisition process in a couple of

chosen South African economies, Jones (2008) uncovers that obtainment rehearses in the nations like Taiwan, Malaysia, Srilanka, and the Bangladesh experience the ill effects of genuine shortcomings in spite of having noteworthy development exhibitions in the new year's. The endeavors towards it are as yet insufficient to change the public acquisition framework. The experience from South Asia shows that it has stayed testing because of inaccessibility of adequate obtainment abilities, resistance to the strategies, absence of responsibility, and debasement (Odhiambo and Kamau, 2003).

Public acquisition from the homegrown providers particularly the miniature and little endeavors (MSEs) have acquired significance in numerous nations lately. Advancement of MSEs is significant because of their development potential through advancements, contest, and inborn business amazing open doors. Notwithstanding such strategy intercessions, the Mses Participation in the public obtainment is a lot of lower contrasted with their huge commitment to the GDP across nations. Absence of HR, low admittance to data and innovation, absence of monetary capital, and so forth, seem, by all accounts, to be the significant difficulties in such manner (World Bank, 2015). Practically speaking, there likewise exist issues of resistance with MSEs-accommodating approaches by the obtaining elements in the greater part of the nations (Gelderman, Ghijsen, and Brugman, 2006). Essentially, absence of cutthroat practices in open acquirement and unbending regulatory demeanor additionally limit interest of the MSEs (Loader, 2013).

Zeroing in on the WTO's Agreement on Government Procurement (GPA), scarcely any examinations have pushed on getting to unfamiliar business sectors for public obtainment. Permitting the worldwide players in the public acquirement exercises and orchestrating the acquisition strategies across nations are the significant highlights in such manner. India also is changing the acquirement exercises by getting to the unfamiliar business sectors, and it has been an eyewitness in the increases in the WTO GPA starting around 2011. How-ever, it necessities to work on the intensity of the homegrown providers prior to turning into an undeniable individual from the GPA.

Public Procurement in India: A Complex Process

The public acquirement process in India is very intricate given the government system for public assistance conveyance. The established courses of action across the Union and State legislatures, independent and legal bodies, public area endeavors (PSUs), and the nearby state run administrations (Panchayat and districts) request an expansive scope of prerequisites for offering public types of assistance. The framework in India has become more mind boggling as the nation doesn't have an extensive public obtainment regulation directing the acquisition exercises. Without even a trace of an extensive regulation, General Financial Rules (GFRs) permit the public authority substances to lead obtainment exercises autonomously. While the fundamental standards of public obtainment are regarded, the framework has brought about variety in the acquisition framework in the country. Numerous elements like Defense, Railway, Telecom, Public Works Department (PWD), and Directorate General of Supplies and Disposal (DGS&D) independently issue obtainment manuals to oversee public acquisition exercises. What's more, the framework in India is pointed toward accomplishing financial formative targets including advancement of MSEs through cost and buy inclinations and reservation of area explicit items. These lead to intricacies because of numerous understandings of rules and guidelines at the tact of the getting substances.

In India the public acquirement structure has highlights specifically in four wide ways established arrangements, authoritative arrangements, managerial rules, and supervisors.

Without even a trace of a devoted acquisition regulation at the Union level, the authoritative status of different acquirement rules and guidelines are directed by Contract Act 1872, Sale of Goods Act 1930, CAG's Duties, Powers and Conditions of Service Act 1971, Prevention of Corruption Act 1988, Arbitration and Conciliation Act 1996, Information Technology Act 2000, Competitions Act 2002, Central Vigilance Commission Act 2003, Right to Information Act 2005, and so forth. Aside from these, a couple of States like Uttar Pradesh, Kerala, Punjab, Telangana, and Arunachal Pradesh follow their own obtainment Acts to do public acquirement at the State level. From time to time, the Ministry of Finance has been bringing out changes in the public acquisition decides and guidelines so the regulatory proficiency can be accomplished.

The guard acquirement in India seems, by all accounts, to be complicated and exceptional. The goal is to keep a harmony between the cutthroat obtaining and the best worth of cash given the area explicit qualities like provider imperatives, innovative intricacy, significant expense, unfamiliar trade suggestions, unfamiliar providers, and international repercussions. Two heads is used in Guard acquirement: income securing and capital procurement. Guard Procurement Procedure was acquainted in 2003 with smooth out acquirement of capital hardware which has gone a few rounds of modification, the most recent being in 2015.

Recently, Andhra Pradesh, Karnataka, and Bihar have delivered their separate draft obtainment pol-frosty for public conference. Safeguard acquisitions under income head as well as all clinical obtainments of the minis-attempt.

The CCI means to screen and advance seriousness in open acquisition by recognizing and amending against cutthroat components. It can force a punishment on people on finding proof for inclusion in enemy of cutthroat exercises like bid fixing, tricky offering, cartelization, and maltreatment of strength. The commission alarms the securing elements and concerned authorities about the likely enemy of serious plans in open acquisition. Then again, the CBI is locked in for examination and indictment of the crook

In India Implementation of the Arbitration & Conciliation Act 1996

The Procurement Policy Division (PPD) under the Department of Expenditure has the order to attempt changes in the acquisition cycle in the country. The PPD endeavors to spread the accepted procedures, gives direction and limit building, and issues the acquisition manuals. The PPD has overhauled GFRs, manuals for acquisition of labor and products in 2017, and presently it is working for a changed manual for obtainment of works. Every manual gives the itemized acquirement rules to separate classification of acquisition. In any case, the PPD neither backers centralization of obtainment exercises nor includes itself in such exercises.

GFR recommends the utilization of a standard obtainment technique (restricted delicate enquiry, promoted/open delicate enquiry, single delicate enquiry, two-stage offering, or electronic converse sell-offs) contingent upon type (works/merchandise/administrations) and volume of acquirement (in financial terms). The open delicate enquiry is recommended as the favored technique as it will in general advance seriousness and equivalent open door to the forthcoming bidders. In a couple of unique cases, for example, direness or single cause of supply, single delicate is called with appropriate defense and endorsement of the skilled power. Additionally, restricted delicate can be called rather than open delicate on desperation given that there will be somewhere around three offers. Then again, low-esteemed acquisitions are managed without calling a delicate by the power or a buy board of the getting substance.

Rule 164 in GFR 2017 suggests two-stage offering where an obtaining element has conversations with the bidder local area to settle the specialized particulars in the principal stage. The monetary bid is called from those whose thoughts were acknowledged, and the bid is granted to the bidder with the best quality-cost proportion. It is normal to upgrade the specialized limit of the acquiring element by drawing on the expertise from the market.

Rule 192 state that it coordinates to dole out higher weightage to quality when contrasted with the cost particularly in the acquisition of administrations through the quality and cost-based determination.

It gives accentuation on the utilization of data innovation in open acquisition to guarantee more prominent straightforwardness and rivalry by commanding the utilization of Central Public Procurement Portal (Rule 159) (CPPPP) for distribution of every single delicate detail, (Rule 160) obligatory e-offering for all acquirements, and (Rule 167) advancement of electronic opposite sell off.

The Union government commands acquisition of labor and products through re-served/special obtainment of privately delivered labor and products to elevate the homegrown area. A couple of such arrangements are illustrated beneath in a word.

Held Procurement from Pharmaceutical Cpses

The Pharmaceutical Purchase Policy 2012 stores the obtainment of specific prescriptions by the Union and State acquiring elements from the Pharmaceutical CPSEs. The National Pharmaceutical Pricing Authority fixes the costs utilizing an expense based recipe. Assuming the CPSEs neglect to supply the medication, an obtaining substance can buy from different makers, and the Pharmaceutical CPSEs might be charged for liquidity harms according to the terms of agreement. The rundown of prescriptions is intermittently audited and reconsidered by the Department of Pharmaceuticals according to necessity.

The Public Procurement Policy for MSE Order 2013

Given the functional size and minimal expense design of the MSEs, low cost of the bid might be conceivable making a monetary save for the securing element (World Bank, 2015). In spite of such inclination arrangements, the World Bank (2016) saw that the investment pace of MSEs in open acquirement is a lot of low in numerous nations because of the limitations like absence of innovation, human asset, and capital. MSEs should be fortified as far as the asset base and human resources for effective preparation, drafting, and finishing the delicate cycle. Given the present market climate, India needs to embrace approaches pointed toward giving more admittance to data, innovation, and money to cultivate MSEs Participation in open obtainment.

Presently, the Public Procurement Policy for MSE Order 2011 orders each Union government substance to set a base yearly acquirement focus of 21% from the MSEs. In the standard of 21% of yearly acquirement, 6% is reserved for the ST/SC possessed MSEs, and an obtaining element needs to report acquisition compliances in its yearly report. A MSE providing cost estimate inside the value band of L1+16 percent will be permitted to supply by cutting down its cost to L1 cost. If there should be an occurrence of more than one such MSEs, the stock will be shared proportionately.

Electronic Portals for Public Procurement in India

The public authority of India has stressed data innovation (e-acquisition) as a device for upgrading straightforwardness, proficiency, and responsibility in the public acquirement. GFR 2016 has ordered the utilization of CPPP and GeM by the obtaining substances. Aside from that, the State legislatures have been utilizing their particular State e-obtainment entrance with sup-port from the National Informatics Center (NIC). Also, the Indian Railways involves IREPS for conveying e-acquisition.

Table 1: Number of Tenders Floated in the CPPP during the Last Four Years

Year	Number of Tender	Value of Tenders (in crores)
2014-15	298,371	211,269.78
2015-16	291,152	319,648.54
2016-17	489,756	389,189.59
2017-18	681,890	618,790.71
Last 4 years	1,761,169	1,538,898.62

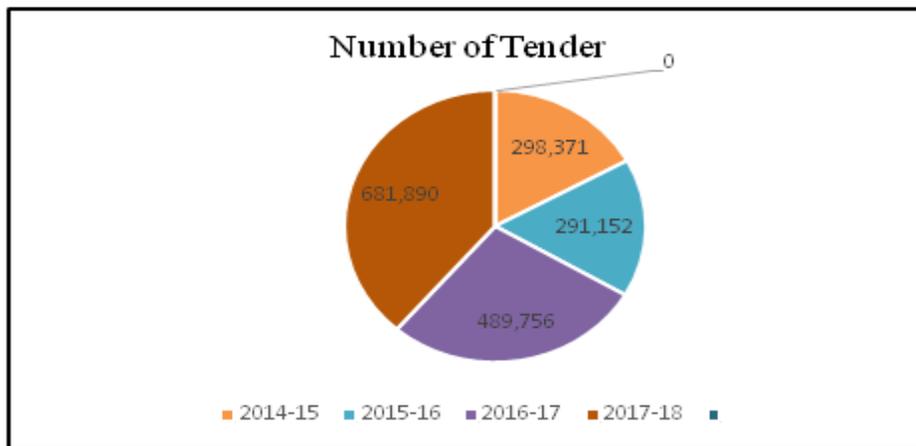


Figure 1: Number of Tenders Floated in the CPPP during the Last Four Years

As obvious from Table 1, the obtaining elements have been utilizing the CPPP seriously over the most recent couple of years demonstrating that the public acquisition in India has been moving towards E-obtainment. All the obtaining substances have been ordered to distribute the delicate enquiries with assessed esteem INR 3 lakhs w.e.f. first April 2019. In request to make the CPPP as the single wellspring of all open acquisition enquiries, the CVC has passed 'no complaint' in 2019 permitting the elements on to relocate from 'Tenders India' into the CPPP portal.

Government E-Showcasing

The DGS&D created Government e-Marketing (GeM) in September 2017 as a start to finish e-entryway for normal use labor and products. An undeniable GeM has been supported in May 2018 as a substitution to the DGS&D. The DGS&D distributes the thing wise rundown of labor and products occasionally to be acquired through GeM. Appropriately, the planned providers register themselves on the entrance. DGS&D requests that the obtaining substances project their yearly acquisition designs and submit them for showing on GeM. An element chooses a provider straightforwardly with the most minimal cost accessible on the entryway for acquisition worth of up to INR 28 lakhs, though, it utilizes bid/turn around closeout for acquirement worth of more than INR 28 lakhs (DGS&D, 2018). Endless supply of labor and products by the element, installment is made electronically.

Green Public Procurement in India

Green Public Procurement (GPP) is a reaction to manage the environmental change issues and advance supportable improvement programs through climate agreeable obtainment. The excursion of GPP in India started with the presentation of Eco Mark in 1992 that in-would in general expand the mindfulness among the buyers including the public authority apparatus about the climate cordial labor and products.

Every now and then, endeavors have been made towards GPP by various getting substances which can be considered as work underway (Table 2). The new offered reports particularly the development tenders have begun joining conditions connected with ecological worries in such manner. A couple of substances like Indian Railways, National Thermal Power Corporation (NTPC), Bharat Heavy Electricals Limited (BHEL), and Indian Oil Corporation have begun incorporating natural and energy productivity models in their acquisition choices

for example, the getting rid of glowing lights (1999), the emphasis on acquisition of Bureau of Energy Efficiency three-star or higher star items (2006), relocation from CFC refrigeration to HFC (2007), and advancement and reception of green latrine innovation (2009). Nonetheless, these endeavors are fundamentally started in disconnection, impromptu in nature, but then to recreate at a bigger scope across the general population obtaining substances.

Table 2: Steps towards Green Procurement in India.

Year	Steps
1992	To increase the awareness among the stakeholders Eco Mark was launched for reducing environmental impact.
2006	The adoption of Environmental Management Systems through purchase preference is implemented under The National Environment Policy 2006 (ISO 14000 goods & services).
2007	Green Procurement & Purchasing (GPP) Guidelines was council by Prime Minister’s on Climate Change suggestion.
2008	Use of GPP Guidelines for Consultation.
2009	To develop GPP guidelines, Ministry of Environment and Forest mandates CII-ITC Centre of Excellence for Sustainable Development.
2010	Indian Railways Installed bio-toilets in passenger coaches.
2013	To initiate and implement measures towards a GPP supply chain Guidelines on Corporate Social Responsibility and Sustainability urge the CPSEs by CPSEs
2015	To promote energy efficiency implementation by National program for LED-based home and street light.
2017	To ensure electrical appliances procurements only with the notified BEE star rating GFR 2017 Rule 173 (xvii) on the procurement of energy efficient electrical appliances urges by the procuring entity.

Source: Authors’ compilation from various documents

GPP in India is tested by a few issues like expense (these items are regularly ex- meditative), absence of natural information, absence of devices and data, and nonappearance of a uniform methodology for characterizing energy effectiveness standards. To beat these difficulties, it becomes basic to fuse ecological worries at all phases of the acquirement framework. It is additionally essential to make a between ecclesiastical team to outline the component. The public authority drives, for example, shrewd city ventures can be the vehicle towards advancement and reception of GPP and development.

Topical Representation of Public Procurement System in India

The public acquirement framework in India can be made sense of following the topical portrayal of World Bank (2017). By and large, Indian public acquirement framework includes five unique stages specifically arranging of obtainment, readiness and distribution of offers, accommodation and assessment of offers, grant and execution of offers, and redressal system. Each stage is framed underneath in a word.

Arrangement and Publication of Offers

The bid archives additionally incorporate basic data, for example, bid charge, sincere cash de-place (EMD) or bid security, execution security, and so on. While the securing substance charges an expense for the greater part of the offers, a couple of offers are absolved. The EMD in India has a normal legitimacy of 50 days past the last offered legitimacy time frame, and being 3-6 percent of the assessed procurement is specified. The MSEs enrolled with the concerned service/division/securing elements are excluded from saving the EMD. The EMD of the ineffective bidders ought to be returned at the earliest after the expiry of the last offered legitimacy and most recent in somewhere around one month after the agreement grant, however there has generally been a few deferrals. Reception of e-installment for saving the different bid related charges is a new drive, and it is assuming a significant part in lessening bidders' exchange costs.

Accommodation of Bids and Evaluation

When a bidder chooses to present a bid in light of a notification welcoming delicate/bid, it requirements to appropriately plan and present the bid (disconnected/internet) consenting every one of the determinations and acquirement course of events as referenced in the bid reports. Both the concerned government authorities and bidders utilize legitimate advanced signature authentication (DSC) to get to the e-entryways. In the interim, the getting elements find a ways to facilitate the arrangement of offers by resolving inquiries of the bidders through e-entries and holding pre-capability/pre-offered gatherings. Once submitted through CPPP, the bidders are offered the chance to adjust/pull out their offers inside a specified time which normally is the last date of the bid accommodation.

Issues in the Public Procurement in India

To understand the ideal results from the monetary expenses in India, a proficient and viable public acquirement framework is fundamental where solid and steady execution of the recommended rules and guidelines is similarly basic. As a general rule, obtainment rehearses in the nation regularly contrast based on what is endorsed as a result of the obstacles, for example, wasteful observing cycle, restricted responsibility and administration, restricted mindfulness, and hierarchical culture. Following are the significant difficulties advanced in the Indian public obtainment framework.

Absence of Standard Bid Records

Notwithstanding the drives for normalizing the bid archives and code of agreement following the worldwide offices, for example, IMF and the World Bank, there keeps on being an assortment of offered records across the elements regarding expansion/reword/redundancy of provisos/arrangements. Such ambiguities and logical inconsistencies in the bid reports stand contrary to the standards of normalization, straightforwardness, and responsibility. GFR 2018 requests to give clearness on the assessment rules based on which the assessment of offers should be done. And still, at the end of the day, many bid archives don't have clearness on the assessment models which gives an ascent in the intricacy in the assessment cycle.

E-Procurement Issues

The electronic admittance to and accommodation of offers through CPPP/GeM is supposed to be the specialists in battling against defilement by decreasing between private collaboration. To accomplish the ideal outcomes, the Draft Bill 2013 ought to order electronic opening of the offers. Essentially, the Draft Bill 2013 ought to likewise command the e-installments for various bid related installments which will unavoidably increment straightforwardness, lessen exchange expenses, and cut de-lays in installments.

Institution of an acquisition Act is basic to give an organized cutthroat cycle towards guaranteeing the best incentive for public cash and laying out open certainty. This acquirement framework is helpless against a few dangers, for example, out of line rehearses, political interest, divided offering process, variety in deciphering the delicate statements, and so forth, without an extensive Act. To wipe out such dangers, GFRs and acquisition manuals need regulative sponsorship. Also, endeavors ought to be made in getting ready norm and uniform bid archives for indistinguishable acquisition of works, merchandise, and administrations having comparative legally binding agreements. While GFRs and other obtainment manuals request incorporation of the standards for pre-assessment, avoidances, and assessment of offers in the bid records, many offers actually don't obviously indicate something very similar. It is vital to obviously determine the standards alongside the relative weightages of the various boundaries to keep away from/limit potential complaints in the offering system.

To improve the investment of MSEs in the public acquisition, endeavors ought to be made to give admittance to data, innovation, credit offices, preparing particularly for offering interaction, and utilization of IT in open acquirement. The public authority ought to interface the cost and buy inclinations to the approaches like Make in India and Start-Up India drives and ought to loosen up certain standards particularly concerning related knowledge and monetary limit.

The National Institute of Financial Management (NIFM) has been leading preparation programs on Public Procurement beginning around 1995 with the end goal of teaching and acquainting the concerned chiefs/officials with every one of the applicable guidelines and systems of public acquirement. As the nodal office, NIFM gets dynamic help from Public Procurement Division of Ministry of Finance, Government of India. Essentially, the preparation foundations across the States ought to likewise direct such preparation projects to the concerned authorities and different partners.

CONCLUSIONS

The current review evaluates the public acquisition framework and late change drives in India and diagrams the requirement for changes in the institutional structure. As of now, GFRs chiefly oversee the public acquisition

exercises in the country. This framework appears to be perplexing because of heterogeneity in the prerequisites in the bureaucratic design of the public authority working and nonattendance of a far reaching acquisition Act. The framework experiences a few genuine downsides like divided strategies and rules, absence of standard bid reports, inaccessibility of adequate acquisition experts, and absence of straightforwardness, far and wide defilement, and absence of free complaint redressal instrument. Various changes have been started over the most recent few years towards laying out a straightforward, responsible, and serious acquisition framework, however these are as yet viewed as work underway. Certain accomplishments, for example, the presentation of e-acquirement, open delicate as the favored mode, inclination approaches, against serious measures, and so on, have been made to-towards accomplishing a sound obtainment process yet the framework is on the way with the most ideal norm. Despite the fact that GFRs and acquirement manuals give various arrangements towards normalizing the acquisition framework in the country, public obtainment is defenseless against the uncalled for rehearses without a trace of a far reaching Act. Subsequently, these should be upheld by regulative power, and Draft Bill 2013 ought to be established with corrections in specific regions.

REFERENCES

1. Ambe, I.M. and J.A. Badenhorst-Weiss, 2012. Procurement Challenges in the South African Public Sector. *Journal of Transport and Supply Chain Management*, 6(1): 242–261.
2. CUTS International, 2012. *Government Procurement in India: Domestic Regulations & Trade Prospects*. Jaipur, India: CUTS International.
3. CUTS International, 2014. *Public Procurement: Need for a National Policy in India*. Jaipur, India: CUTS International.
4. CVC, 2017. *Annual Report 2016*. New Delhi: Central Vigilance Commission, Government of India.
5. DGS&D, 2017. *Annual Report 2015-2016*. New Delhi: Directorate General of Supplies & Dis- posals, Government of India.
6. Jones, D.S., 2007. Public Procurement in Southeast Asia: Challenge and Reform. *Journal of Public Procurement*, 7(1): 3–33.
7. McCrudden, C., 2004. Using Public Procurement to Achieve Social Outcomes. *Natural Re- sources Forum*, 28(4): 257–267.
8. Tabish, S.Z.S. and K.N. Jha, 2011. Analyses and Evaluation of Irregularities in Public Procurement in India. *Construction Management and Economics*, 29(3): 261–274.

TO STUDY THE SUPPLY CHAIN INSIDE THE GENERAL PROCURING TERRITORY ALONG WITH SEVERAL THINKING ORIGINATING FROM INDIAN RAILWAYS**¹Suresh V. Kapare and ²Gagandeep Nagra**¹Research Scholar, ²Associate Professor, D.Y. Patil Deemed University, School of Management, Navi Mumbai, Maharashtra**ABSTRACT**

This paper gives investigation of store network the board structure in the public acquisition climate through a contextual analysis of the Indian rail line. The paper gives a few bits of knowledge about the advancement of provider relationship the executives and its effect on key execution pointers. It's additionally gives an integrative structure to the board of public acquirement. The paper expands on broad audit of writing and follows a contextual investigation strategy. The unit of investigation is the Indian Railway's material administration work. Examination utilizes information of over a time of six years. The observing features that provider associations with the Indian rail line have been outfitted around a careful distance reasoning. The current side effects of failures are reflected in high process duration, significant expenses related with provider choice cycle, unfortunate responsibility, obscuring of liability and unfortunate worth creation for every one of the partners. The current acquirement components are not made around improvement of long haul key organizations. This study is filling the holes in writing by introducing the difficulties of inventory network the board in the public acquisition climate. Experiences from agricultural nation like India can be applied to other public acquisition frameworks. The paper manages delicate issue of public acquisition framework. The discoveries would be valuable for strategy producers in creating instruments for ingraining experiences of business the board into the domains of public administration. The review is first of a sort to give a calculated structure to understanding structure squares of the inventory network the board in the public obtainment climate.

INTRODUCTION

This paper gives investigation of production network the board system in the public acquisition climate through a contextual analysis of the Indian railroad. The paper gives a few bits of knowledge about the advancement of provider relationship the board and its effect on key execution pointers. It's additionally gives an integrative structure to the executives of public obtainment. The paper expands on broad audit of writing and follows a contextual analysis philosophy. The unit of investigation is the Indian Railway's material administration work. Examination utilizes information of over a time of six years. The observing features that provider associations with the Indian rail line have been equipped around a careful distance theory. The current side effects of failures are reflected in high process duration, significant expenses related with provider determination process, unfortunate responsibility, obscuring of liability and unfortunate worth creation for every one of the partners. The current acquisition components are not created around advancement of long haul vital associations. This study is filling the holes in writing by introducing the difficulties of production network the executives in the public obtainment climate. Experiences from emerging nation like India can be applied to other public acquirement frameworks. The paper manages delicate issue of public acquirement framework. The discoveries would be helpful for strategy creators in creating components for ingraining experiences of business the board into the domains of public administration. The review is first of a sort to give a theoretical structure to understanding structure squares of the inventory network the board in the public obtainment environment. Indian rail line (IR) gives transportation and cargo development administrations. IR is a public area undertaking of legislature of India whose issues are overseen through a service of railroads. Rail line board is the peak body which is led by a bureau rank clergyman under legislature of India. Railroad board capacities at the zenith level and is answerable for strategy making, target setting, execution checking, unit arranging and concentrated acquisition of high worth things containing total moving stock and so on. Rail route board part answerable for mechanical designing is accountable for exercises related with mechanical designing and material administration and is liable for creation and upkeep of moving stocks like carts, mentors and diesel locos. Buys made by rail route board contain 45% of the absolute buy.

As of now the Indian rail route activities include development of 21000 trains every day and transportation of 3.2 million tons of cargo traffic and 25 million travelers each day. It is world's biggest traveler transporter and fourth biggest cargo transporter. During year 2013-14 the cargo stacking was more than 1.5 billion tone and traveler shipped remained at 7.8 billion. The Indian rail route gives direct work to 2.6 million individuals and a lot bigger backhanded business. More or less the size and activities of the IR is portrayed in table 1.

Table 1: The Indian Railway at a glimpse.

SN	Item (s)	Unit	2012-13	2013-14
1	Resources			
	Course length	Kilometers	75,600	76,436
	Train	Numbers	20,549	20,956
	Traveler Service Vehicles	Numbers	67,347	68,256
	Carts	Numbers	2,50,316	2,55,731
	Rail line Stations	Numbers	18,146	18,172
2	Activities			
	Traveler beginning	Millions	19,224	19,421
	Traveler kilometers Freight Traffic (Revenue)	Millions	10,57,522	11,09,103
	Tones beginning	Millions	1074	1113
3	Volume of Traffic			
	Traveler kms	Millions	10,57,522	11,09,103
	Complete traffic (incl .non-income)	Millions	1082	1,124,15
	Cargo traffic (Revenue) Tones beginning	Millions	1,076	1,115
4	Business and Wages			
	Normal workers	Thousands	1,418	1,415
5	Monetary Results			
	Incomes	In crores of Rs.	1,15,109.12	1,34,741.21
	Costs	In crores of Rs.	1,09,651.28	1,22,561.58
	Incidental exchanges	In crores of Rs.	1,445.32	1,571.34
	Net income (before profit)	In crores of Rs.	6,887.16	13,734.52

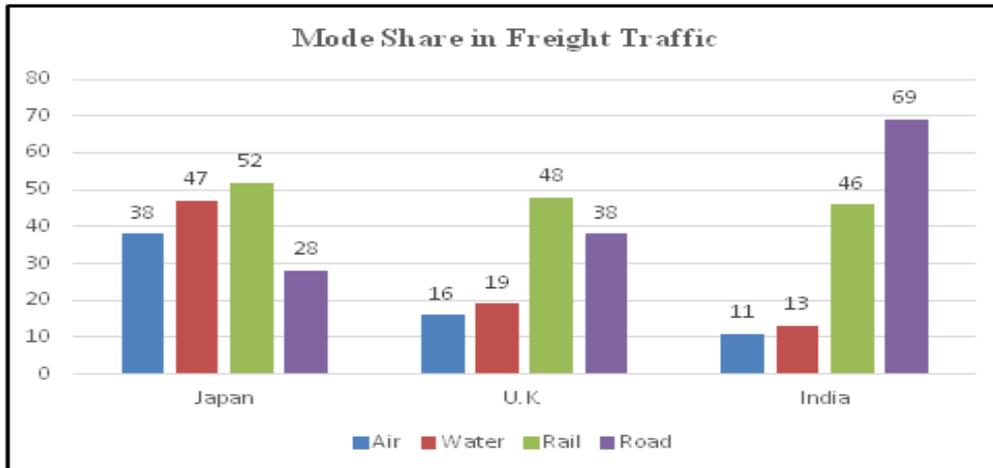


Figure 1: Share of Indian Railway Vis-à-vis different modes.
(Source: Material Transport Development policy committee, August 2014)

Rail route is a favored method of transport since it is enjoying upper hand over street concerning energy utilization, monetary, ecological and social expense. Railroad consumes 69% less energy as contrast with street. It is more secure and less dirtying method of transport. Land necessity per unit of transport is less if there should be an occurrence of Railways. Any shift from street to rail traffic would result into immense benefit. Considering these regular benefits, the ideal portion of rail line ought to be 79% however throughout the year portion of railroad traffic is falling and at present it remained at 31%, streets at 68% and others, for example, pipeline, streams and aviation routes and so on at 11%. This is portrayed in figure in 1.

Transparency

Straightforwardness is a significant precept of the public administration (Rothery, 2003). Under new open administration public bodies endeavors to follow top tier rehearses and are prepared for review. Complete and excellent data empowers level playing ground, this is all the more so for global sellers (Rege, 2001), diminishes open doors for theoretical practices (Arrowsmith, 2003), brings about successful choices and increments public bodies' ability to seek after steady guidelines Smith-Deighton, (2004).

ACCOUNTABILITY

On one hand responsibility is characterized at the miniature level and then again it is characterized at the large scale level. Subsequently, it is operationalized both at the public as well as at the global level. Nonetheless, characterizing the extent of logical business climate is profoundly complicated and may bring about responsibility issues (Gunasekaran, 2005). Partners esteem issues related with substance as well as with theoreticalness like assistance (Barrett, 2000).

METHODOLOGY

This paper follows a contextual analysis technique which is a request of a genuine peculiarity having obscured limits (Yin, 2003) and includes patterns of depiction, clarification and testing. Contextual analyses are utilized to effectively explore, depicting and making sense of the exact setting. The paper follows engaging element for the examination of viability of store network under open acquisition climate in Indian railroad. The unit of investigation is public obtainment process in upstream production network of the Indian rail routes. Writing on open obtainment, production network would be investigated to get the specific situation and basic issues of the issue. Reports, insights and different archives distributed by Indian rail route would be utilized to inspire current status of the acquisition cycle and its related difficulties. This learning would be enhanced with conversations with different partners, for example, strategy producers and individuals engaged with acquirement process. The information assortment would include report investigation, for example, government journals, and interview with strategy producers in the public authority and authorities of Indian rail route. Table 2 portrays different wellsprings of information.

Table 2: Wellspring of Data

Sr. No.	Wellspring of Data	Techniques
1	Legislature of India	Six Semi-organized interviews
2	Authorities in service of railroad	Reports as strategy explanations.

FINDINGS AND DISCUSSION**Role of Procurement in Organization**

Any association public or private requires outer assets in quest for its goals. Such assets could be products, administrations, works or consultancy. It very well may be substantial or theoretical. Obtainment is significant key business the board capacity to oversee whole cycle from evaluation of need, distinguishing proof of item, gauging, obtaining, coordinated operations, takes a chance with administrations, esteem designing, provider connection the executives and administrative consistence productively and actually. The capacity is liable to objective of association and assumption for stakes holders which incorporate investors, representative, client, society at large, government and climate. Obtainment is the science and specialty of supply the board oversaw by capable, proficient, expert and expert.

The acquirement work is having the essential significance as 70-80 % of consumption of an association is brought about in the acquisition. It assists association with further developing benefit, piece of the pie, diminishing time from idea to advertise, further developing consumer loyalty, help in innovative work (R&D) for better quality, better qualities, mechanical improvement, advancement, help in conveying better item and administration and mass customization and so on.

Public acquirement according to the Indian public obtainment bill includes acquisitions by buy, rent, permit or in any case of merchandise or administration or any mix there off including grant of public private organization project by obtainment office straightforwardly or through an office for which contract for obtainment is placed into. Public acquirement alludes to acquisition by government offices which might be focal government, state government, public area units (PSUs), obtainment through multilateral financing or any element where over half value is held by Government including obtainment under open private association (PPP) projects.

The target of public obtainment as characterized in open acquirement bill set before the Indian parliament is to guarantee straightforwardness, responsibility, and fidelity in the acquisition cycle, fair and evenhanded treatment to bidders, advancement of contest, upgrade of proficiency and economy, support of respectability and public trust in the acquirement Process. Public acquisition for the most part represent huge portion of government use in the homegrown economy. It is having vital significance as it includes enormous use and the reason for uses, for example, social and other framework is to give lift to the economy. The public acquisition use in India per annum is assessed to be in excess of 21 lakh crore (US \$ 305 billion) which adds up to 30 to 35 % of the country's GDP. A simple saving of not many percent's would bring about significant sum which can be channelized towards building social and foundation area of the economy. Besides, proficiently spent public cash empowers accomplishment of the set down strategy targets.

The Common in Public and Private Procurement

The essential point of public or private acquisition can be depicted as far as right amount, right quality, right cost for example an incentive for cash (VfM), and life cycle cost (LCC), absolute expense of possession (TCO) idea, right source, perfect environment, right and moral strategy.

Public Procurement on Indian Railways

Material Management dept. on Indian Railway guarantees continuous stockpile of material and stores. It has 271 distribution centers and more than 1.5 lakh material part are loaded. During 2013-14 all out use on Material was Rs. 41528 crores. Material Management dept. utilizes 31,232 no. of worker to deal with its capacity. Table 2 portrays a preview of IR's buy.

Table 3: A broad analysis of purchase made by IR.

Sr. No.	Items	2012-13 (in crore)	2013-14 (in crore)
1	Stores for activity, fixes and support	9,408	9,261
2	Stores for development	1,022	1,431
3	Fuel	11,568	13,664
4	Stores for assembling of Rolling Stock and acquisition of complete units	12,872	15,228
	Total	34,870	39,584

Theoretical Frame work of Procurement on the Indian Railway

The things are given thing code on the essential of Main Equipment/Assembly and Subassembly shrewd for example Diesel crazy extra will have thing code beginning from 11 to 18, Electric insane extra will have thing code beginning from 21 to 28. Buy sub bunches are coordinated on the essential of client bunch for example separate buy bunch for acquisition of Diesel Loco Spares, Electrical Loco Spares and so on.

There is an arrangement of yearly acquisition of various things by welcoming tenders for singular amount expected for quite a long time. Choice in high worth tenders are taken by delicate assessment council which comprise of officials from clients, Material Management and money dept. It is seen from most recent long term buy date that a large portion of the things (81-89%) in esteem terms are secured through supported sources. Endorsement of sources is finished by brought together office like Research Design and Standard Organization (RDSO); Diesel Locomotive Works (DLW) or Chittaranjan Loco Works (CLW) and so forth. While supporting the sources the designing expense assessment of things isn't the thought.

Providers are expected to orchestrate review of all transfers from outsider assessing office like RITES and RDSO before dispatch of Material. Sources supporting office, getting organization and examining office are autonomous to one another. Material is at last gotten and acknowledged by representative who is distribution center in control and afterward supplied and gave according to prerequisite. Providers are expected to submit bill, in endorsed design alongside essential report, for example, Inspection authentication, dispatch subtleties and so forth for guaranteeing installment.

Evaluation of Supply Chain Function

Execution Measures (PM) can be characterized as the most common way of evaluating proficiency and adequacy of an activity (Gunasekharan, 2004). Execution estimation frameworks (PMS) give the essential data to direction and activity. It assumes significant part in setting key goal, assessing execution and deciding future strategy (Cobee 2007). The primary justification for horrible showing of the store network is absence of estimation framework. The genuine test is, hence, to foster appropriate PMS, to further develop association execution and intensity. To comprehend and assess the presentation of inbound driven production network of IR, the key exhibition pointers (KPIs) of IR are contrasted and KPI of a common vehicle organization.

For examination the store network of LAC was contemplated. The process duration of going into the agreement is roughly a six month yet this agreement is on long haul premise. Fortnightly conveyance prerequisite with 3 hourly conveyance booked is given. Normal stock is 3 hours, stocks out circumstance are extremely interesting and the acquisition supervisors of LAC are given an objective of decrease in bill of material (BOM) by 8% on year-to-year premise. This decrease in BOM is conceivable by amortizing the proper expense on the existence cycle premise and joint worth designing endeavors by the purchaser and the provider. Complete numbers of dynamic merchants are in scope of 289 as it were.

The Business Process of Inbound Centric Supply Chain of IR

Arrangement of codification of things expects that everything ought to have special thing code. On IR the process for appointing thing code is connected with the end use. In the event of shared characteristic of extras in

various sort of hardware, there is each likelihood that the state of remarkable thing code of everything gets abused. Ceaseless endeavors are finished unification of thing code with restricted achievement. Further the obtainment perspective order of thing code according to industry class might be better. Buy sub bunches are separated in light of the end utilization of things. This outcome into acquisition of same classification of thing by various sub gatherings (for instance nylon hedges expected for Diesel insane will be secured by various sub gatherings and nylon shrubberies expected for electric crazy will be obtained by other sub bunch). Consequently, characterization based on industry class is better according to obtainment perspective.

Acquirement is finished everything separately and freely on single amount reason for every year. This outcome into long process duration and duplication of endeavors in finishing the yearly agreement. Arrangement of singular amount obtainment of all things on year to year premise has specific bad mark like, high process duration, unfortunate responsiveness, high stock and high stock out circumstance, redundancy of exertion of contracting, significant expense of acquisition because of vulnerability of future business and repaired set, cost, tooling cost, a safe distance provider connection the executives, unfortunate motivator for advancement and worth designing and so on.

Seller endorsement by unified organization is a constant interaction. Specialized and monetary skill of provider is considered while giving endorsement however designing expense assessment of the item is neither talked about nor arranged. Ordinarily this prompts circumstance of cartel development. There are issues of absence of straightforwardness in the item advancement and source endorsement. Quality affirmation of approaching natural substance essentially relies upon pre-dispatch review, all things considered. This outcome in higher stock in the framework, higher process duration, unfortunate responsiveness and extra expense. Idea of creating process ability and seven - sigma are not yet utilized.

In the current framework the buy contracts are given to seller by different zonal rail lines with characterized conveyance booked. Time is the pith of these agreements. The seller is expected to supply the material as indicated by endorsed conveyance plans. On occasion this might result in to abundance stock at some spot and unavailable at others. Data of stock things is accessible on framework called materials the executives data frameworks (MMIS). This data can be imparted to sellers and they can be approached to keep up with least endorsed degree of stock at all arranged recipient inside the amount on hand and agreement period. The agreement condition can be appropriately changed.

Supplier Relation Management in Public Procurement

In open acquirement climate including the IR the provider connection is completely administered by detail of supply, terms and state of the agreement. There is unfortunate motivator with respect to provider to further develop the item plan and worth designing. In this manner, provider commitment in nonstop R&D and esteem it is extremely restricted to design exertion. Besides, because of vulnerability of future orders there is an obstruction with respect to provider to bring about interest in creating process ability, further developing efficiency, improving tooling and so on. The fundamental way of thinking of singular amount acquisition through serious offering is that bidders will offer the base conceivable quality which is meeting the determination. Provider cooperation is the key for saving in bill of material (BOM). There are other benefit in long haul agreement, for example, lower cost, responsiveness of provider, and lower stock and so forth. By and large a fantasy long haul contract doesn't fall inside the casing work of public obtainment climate.

Indian rail routes information of obtainment of stock things for most recent long term was contemplated. It is seen that 89% of acquisition in esteem terms is produced using endorsed sources. The huge portion of business of these merchants is contributed by the Indian railroad. Despite the fact that separately the agreement are singular amount contracts however by and large on IR premise the acquisition is produced using same arrangement of sellers which implies however provider doesn't have a drawn out agreement with IR yet they have long haul business relationship with it.

CONCLUSIONS

Area of public acquirement is vital according to the perspective of its size and objective of expenditure. Public obtainment is assessed as 30-35% of India's GDP and on worldwide scale it is assessed to be 20-25% of the world GDP. Despite the fact that the extent and significance is so high, this region has not drawn in much consideration of specialists. There are a few roads for further developing hypothesis and practice of store network work with regards to public acquisition climate.

REFERENCES

Afonso, A., Schuknecht, L. and Tanzi, V. (2005). "Public sector efficiency: an international comparison", Public Choice, Vol. 123 No's 3/4, pp. 321-347.

Atkinson, W. (2003), "New buying tools present different ethical challenges", *Purchasing*, Vol. 132 No. 4, pp. 27-30.

Bovaird, T. (2006), "Developing new forms of partnership with the 'market' in the procurement of public services", *Public Administration*, Vol. 84 No. 1, pp. 81-102.

Brulhart, M. and Trionfetti, F. (2004), "Public expenditure, international specialization and agglomeration", *European Economic Review*, Vol. 48 No. 4, pp. 851-881.

Chamberland, D. (2005), "Boosting your best practices", *Purchasing B2B*, Vol. 47 No. 6, pp. 16-17.

Croom, S. and Johnson, R. (2003), "E-service: enhancing internal customer service through e-procurement", *International Journal of Service Industry Management*, Vol. 14 No. 5, pp. 539-555.

Cummings, G. and Qiao, Y. (2003), "The use of qualification-based selection in public procurement: a survey research", *Journal of Public Procurement*, Vol. 3 No. 2, pp. 215-226.

ACHIEVING ENVIRONMENTAL SUSTAINABILITY WITH DRONES BASED ON INTERNET OF THING**Trupti Deovrat Kulkarni and Snehal Saurabh Rane**

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ABSTRACT

In order to build a sustainable smart city, it is important to leverage airborne technologies for city inspections, disaster management and business development. now a days, how technologies including drones are far away from a nuisance in the sky. Drones are poised to become an essential part of any smart city's network. A drone is made up of different light composite materials in order to increase maneuverability while flying. It can include variety of equipment, including cameras, Global Positioning Systems (GPS), navigation systems, sensors. A drone does recording and monitoring from the sky, and therefore, they are suitable for monitoring events, protests, or any suspicious happening without being heard and seen.

Keywords: Drones, Traffic management, Pollution Control Drone, Firefighting and Rescue Operation

INTRODUCTION

The concept of smart cities is increasing day by day, after the global financial recession. Internet of Thing which is also refer as Internet of Objects use of IoT can change everything including our lifestyle. In terms of development, transforming any city to smart city is the current trend of the world and technology like drones is expected to play a major role in smart cities of the future. Previously, the term drone was associated with military use only. But now this amazing piece of equipment can fly beyond their conflict zone from the last few years and can be used for various commercial applications such as search operations search operations, agricultural and traffic monitoring.

REVIEW OF LITERATURE

Drone technology has taken lots of attentions and large numbers of applications were developed already. The Drone service will make the physical world as economically liquid and efficient, changing consumer life.

According to Farhan Mohammed¹, Ahmed Idries¹, Nader Mohamed¹, Jameela Al-Jaroodi², and Imad Jawhar¹ (2014 International Conference on Unmanned Aircraft Systems (ICUAS) May 27-30, 2014. Orlando, FL, USA) (978-1-4799-2376-2/14/ ©2014 IEEE). Intended for the forthcoming decade many technologies will bring transformation in the world and transmute the economy. Amongst existing technologies, embrace the Internet of Things IOT being one of the booming technology, cloud computing and self-governing systems like UAVs. For any Country, Using Smart cities and UAV systems effectually and proficiently can bring expressive impression and welfare. To bring a sustainable commercial environment, assimilating UAVs with smart cities is a good option approaching forward which also provides a pacific dwelling for living.

According to Muhammad Asghar Khan, Alamgir Safi, Dr. Bilal Ahmed Alvi, Inam Ullah Khan (978-1-5386-4304-4 ©2018 IEEE) explains, A rapid progress is seen of incorporating of Drones in smarter Cities. Commercialized and special private Drones together can provide strong assistance for cities and somewhat prohibit them completely. The imminent achievement of infomercials drones will hinge on the expertise of wide-ranging stakeholders to reevaluate by what means this emergent technology platform can be finely harnessed to aid the extensive comforts of folks active in cities.

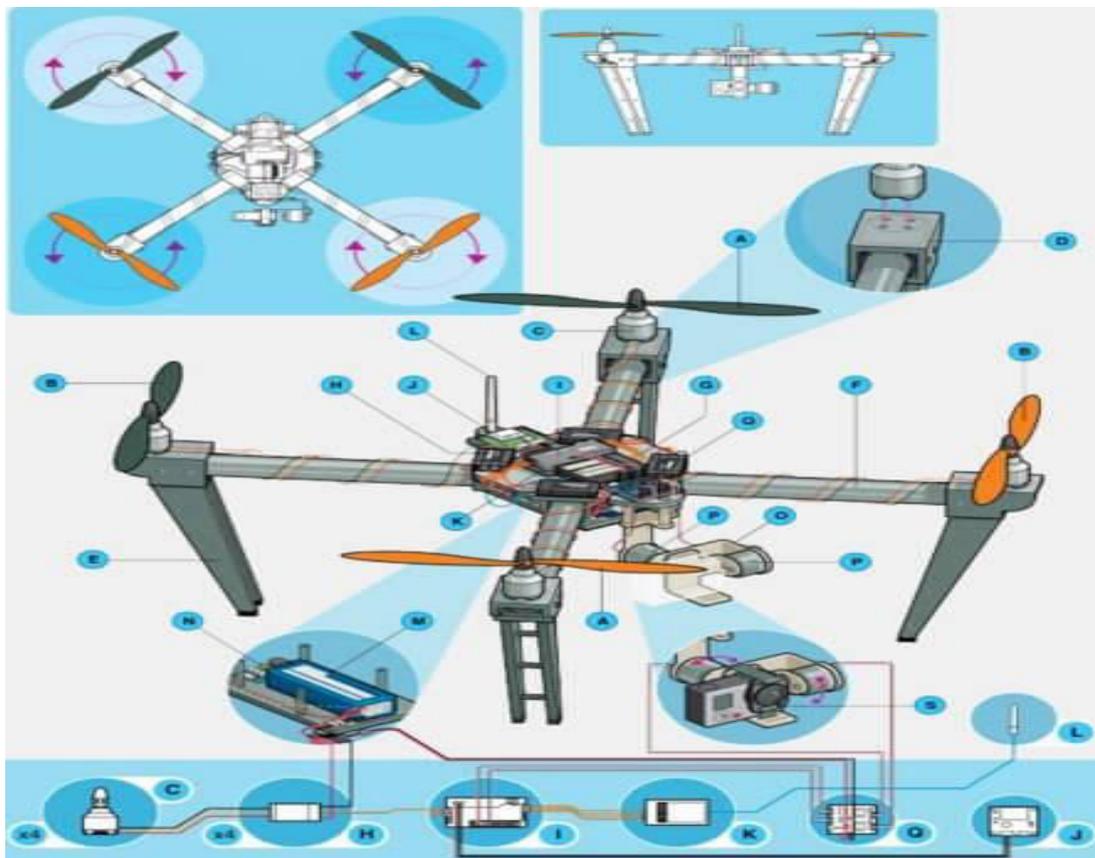
DEFINITION

A drone is an unmanned aircraft. Drones are more formally known as unmanned aerial vehicles (UAVs) or unmanned aircraft systems (UASes)". Or "A drone is a flying robot that can be remotely controlled or fly autonomously through software-controlled flight plans in their embedded systems, working in conjunction with onboard sensors and GPS".

DRONE COMPONENTS

1. **Prop:** The "tractor" propellers are the props at the front of the quadcopter. These props pull the quadcopter through the air like a tractor. Most drone propellers are made of plastic and the better quality made of carbon fiber. For safety, you can also add drone prop guards which you need especially if you are flying indoors or near territory.
2. **Brushless Motors:** These are more efficient, more reliable, and quieter than a brushed motor, which save battery life and give the owner more flying time, which is what every pilot wants.

3. **Landing Gear:** Drones may adopt helicopter style skids mounted directly to the body, while other drones which have no hanging payload may omit landing gear. Most drone has a fixed landing gear. However, the best drones are giving a full 360 degree view when in the air.
4. **Main Drone Body Part:** This is the central hub from which booms radiate like spokes on a wheel. It consists of battery, main boards, processors avionics, cameras, and sensors.
5. **Electronic Speed Controllers (Esc):** An electronic speed controller or ESC is an electronic circuit use to vary an electric motor's speed, its direction and possibly also to act as a dynamic brake. It rectify DC battery power into 3-phase AC for driving brushless motors.
6. **Flight Controller:** The flight controller convert the input from receiver, GPS, battery monitor, IMU and other onboard sensors. It controls motor speeds, via ESCs, to provide steering, as well as triggering cameras or other payloads. It controls autopilot, waypoints, failsafe and many other functions. The flight controller is central to the whole functioning of UAV.
7. **GPS Module:** The GPS module consists of GPS receiver and magnetometer to provide latitude, longitude, elevation, and compass heading from a single device. GPS is useful for waypoint navigation and many autonomous flight modes. Without GPS, drones would have less use.



Drone Applications for Smart City Model:

Drone can gives many applications to human being for making life easier, safe and smart. Some of the major smart city model component discuss below:

1. **Traffic Management:** Now a day's technology leaving his footprint in every sector, so Highways and traffic to be at forefront for next transformation. Traffic is a huge issue for any city, Wasting time and resources of a city. Smart traffic management is key for a smart city. Drones can keep an eye on traffic from the sky. And guide traffic police at the ground about traffic. Smart highways mean communication between roads and vehicles. Yes, cameras, sensors can detect the traffic update, diversions, sharp turns, which can help to create safe highways and enhance the driving experiences. Efficient safety and security system in a city is a concern for a smart city. UAVs are helping in smart policing. And with the integration of mobile applications, wireless networks, and forensic mapping software, UAVs are helping smart cities be a safe city too.

2. Pollution Control Drone

It is recognized that air pollution varies abruptly even at fairly short distances. Air pollutants are particularly hard to oversee with predictable and low-priced means of reflection, which may change with the usage of drones of Unmanned Aerial Vehicles (UAVs). Sustaining Life quality of a living being is a biggest challenge against traffic, air pollution produced by manufacturing industries, traffic & house heating. The specific drone is made up with a paragliding wing which carries chemicals and release chemicals in direction of reducing the amount of fine particles matter (FM 2.5) that diminish visibility and causes the air to seem foggy and injurious to public fitness.

3. Agriculture and Environmental Management

IOT has a superior involvement in agriculture. To take Intensive care of the environment, by using environmental substances like CO₂ secretion with UAVs which permits to continuously monitor Oil and gas services. These are used to monitor the growing of harvests, also can be used to fertilize the crops.[2]

4. Big Data Processing

Smart Infrastructure Application Requires Different Technologies For Big Data Processing Systems. Technologies may include Combination with modelling and simulation, integration with GIS, Time series data processing and many more. While using these technologies, through UAVs combination among technologies can be attained. This makes easier distribution of information between them which is further faster and precise. [2]

5. Natural Disaster Control and Monitoring

Emergency circumstances like Natural calamities such as floods, earthquakes, fire can be controlled by UAVs effectively and resourcefully. UAVs can reach in difficult areas where people find tough to reach. During the calamities UAVs can analyse the condition appropriately and can take counter measures.[2]

Drones for Sustainability and Scientific Research

With low-cost consumer-grade ones being introduced, drones have grown popular among a number of organizations and institutions. Modern drone technology's low operation costs, high level of automation, and high-quality survey data can aid the local governments to achieve sustainability in environmental development. [6]

➤ Transportation and Delivery

Drones will be utilized in the intermediate future to swiftly deliver things that can be delivered over small distances. Deliveries will soon be delivered by battery-powered drones rather than exhaust-coughing vehicles and trucks. This will reduce the number of smaller road deliveries, as well as the number of trucks on the road. Drones will reduce pollution created by vehicles. One challenge here though is drones have modest payloads, which limits their carrying capacity. They're great for modest deliveries or dropping off emergency supplies, but not for carrying large amounts of freight although, they will be able to carry heavier loads as technology advances. As drones are operated by batteries, they can have a significant positive impact on the environmental pollution. [6]

➤ Wildlife Conservation

Drones can aid a lot in the preservation of our natural areas. They can easily monitor wide huge acres of land, resulting in less influence on the environment because no one has to travel there. Even better, drones provide you with an aerial birds-eye perspective, so problems that aren't evident from the ground will be obvious. They can be used to follow animals, especially dangerous species, without endangering people. They may also be employed to keep an eye out for poachers and trespassers in regions where there is just too much terrain to cover. Drones can also be utilized to deliver help in the event of a natural disaster. Drones are a tremendous weapon in the struggle to keep wildlife and natural environments safe, whether it's searching an area for survivors after an earthquake or flood, or combating fires by dropping payloads. [6]

➤ Monitoring and Inspection of Solar Panels, wind Turbines and Oil Pipelines

It is insufficient to just construct wind turbines, solar panels, oil pipelines or high-voltage power cables. After such items have been built, they must be monitored and examined regularly, if you want to prevent major issues and breakdowns with potentially devastating effects. The problem has been that monitoring and inspecting these buildings takes time and people. It's a risky task to get someone to climb to the top of a wind turbine and then check it. It's also something that takes a long time to complete. Walking the entire length of an oil pipeline or going up close to electrical wires to examine them for fraying or damage is the same. The task can be done securely and efficiently with drones. [6]

➤ Sustainable Agriculture and Crop Monitoring

Drones can be a huge help to farmers who want to see the broad picture when it comes to their crops. It's difficult to get a sense of what's going on from the ground since conventional farms tend to cover so much territory. Farmers may utilize aerial surveying services to figure out what's going on in their fields and to create maps that can be used to prepare for the next growing season. Drones now come with a number of new software tools to aid with NDVI mapping. The NDVI (Normalized Difference Vegetation Index) is a basic graphical indicator that may be used to determine whether the target being seen has living green vegetation or not. Drone cameras are used to collect this information. [6]

➤ Land Management

When it comes to creating or modifying property, aerial surveying is a delicate art, and it's tough to see the end outcome. Drones have the potential to make the entire procedure considerably easier. A final object is simpler to envisage when viewed from the air. A drone may be used to build 3D maps and record GPS coordinates for simple tracking and it can also be utilized to identify problem areas. Drones may also be used to transport essential supplies to crops. Drones can be used instead of planes for agricultural dusting, for example. [6]

➤ Reforestation

The actual planting of the trees is where drones come into play. Planting trees is a time-consuming operation. Recently a drone called DroneSeed was built by one of the engineers. DroneSeed begins by sending out a single drone to make a 3D scan of the environment. The data collected is then analysed by software to discover the ideal areas to plant seeds for the greatest survival rate. DroneSeed uses drones to drop seed vessels, which are filled with eco-system targeted seeds and other materials to support successful growth. Each vessel includes a mixture of seeds that are best suited to the site, fertilizer, and a ghost pepper to keep squirrels, mice, and other rodents away from the seeds. There are various advantages to using drones to sow seeds. [6]

CHALLENGES

There are some challenges to the application of the Drone concept in cost of implementation. The expectation is that the technology must be available at low cost with a large number of objects. Drone can face following challenges:

1. Safety

Drones deployed in highly dense cities for various civilian applications raises serious safety issue as huge damage can be caused due to the crashing of drone. This may be the result of technical malfunction or inadequate maintenance of equipment, mid-air collisions, or misuse by its operator. Severe weather conditions such as turbulence, lightening and battery life lift capacity has also triggered concerns about the falling of drones on public property. Furthermore, due to sharing of the airspace with other commercial planes in larger cities, there is also a serious risk of airborne collisions leading to widespread destruction.

2. Security

The biggest security concern of using commercial or civilian drone is not the drone itself, but the technology inside of it. The technology which is with the drones could be hijacked or destroyed by attackers. Drone navigation and communication modules are vulnerable to different kinds of security breaches. GPS enables a drone's navigation system, and due to the open nature of unencrypted and unauthenticated GPS signals can be easily spoofed. Wi-Fi Jamming can cause the loss of control of the drone's communication system with serious consequences with nearby territory.

3. Privacy

Privacy is one of the major concerns related to the use of commercial drones. Drones hold a distinctive range of agile access methods that differentiate them from other privacy infiltrating gadgets. Drones are having high-precision cameras, sensors and recorders that can be remotely controlled to perform tasks precisely. However, they bring with them concerns about privacy and personal data protection.

CONCLUSION

This study is outlining general information about Drone, such as definition, market size, and status of IoT, which has become a hot Drone topic nowadays, and in presenting applicable Drone business models to help research institutes and business entities participating in related projects build a smart city as part of the future vision of local governments by reflecting the new information paradigm of Drone.

As we move to a more sustainable world, drones provide many commercial solutions. Important global sectors such as Agriculture, Industrials and logistics will be transformed through their technology and services. Drones will be at the center of sustainability in the upcoming future.

REFERENCES

<http://mydronelab.com/blog/what-is-a-drone.html>

UAVs for Smart Cities: Opportunities and Challenges by Farhan Mohammed¹, Ahmed Idries¹, Nader Mohamed¹, Jameela Al-Jaroodi², and Imad Jawhar¹ College of Information Technology, UAE University, Al Ain, UAE

University of Pittsburgh, Pittsburgh, USA ,978-1-4799-2376-2/14/\$31.00 ©2014 IEEE.

<https://internetofthingsagenda.techtarget.com/definition/drone>

Drones for Good in Smart Cities:A Review, Authors Muhammad Asghar Khan, Dr. Bilal Ahmed Alvi, Alamgir Safi, Inam Ullah Khan , 978-1-5386-4304-4/18/\$31.00 ©2018 IEEE

<http://mydronelab.com/blog/what-is-a-drone.html>

<https://www.dronezon.com/tag/drone-components/>

<https://www.dronezon.com/learn-about-drones-quadcopters/drone-components-parts-overview-with-tips/>

<https://www.analyticsinsight.net/what-role-does-drone-technology-play-in-promoting-environmental-sustainability/>

SYNTHESIS AND CHARACTERIZATION OF ZNS THIN FILM USING SILAR TECHNIQUE

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ABSTRACT

The thin films of ZnS were deposited on pre cleaned glass substrates by using SILAR method. The X-rays diffraction (XRD), Field emission scanning electron microscopy (FESEM). UV-visible have been used to study the structural, morphological and optical properties of grown ZnS thin films. The XRD reveal the cubical crystalline structure. The FESEM micrographs show a deposit films with uniform and porous nature. The optical transmission spectrum determines the optical band gap of 3.78 eV. The films present a good optical transmission in the visible domain.

Keywords: SILAR, thin film, XRD, FESEM, EDAX, UV.

INTRODUCTION

The zinc sulfide (ZnS) is a important semiconducting material from II-VI group [1]. It has specific structural and optical and electrical characteristics such as high transmittance and reflection [2]. It has wide band gap 3.7 eV [3]. The ZnS is used for a variety of commercial applications like: sensors, optical coatings [4], photoconductors [5], field effect transistors [6], dielectric filter, anti-reflecting coatings [7], and bioelectronics [8]. ZnS film can be used in solar cell because of its high transmittance in visible region [9, 10].

There are various physical and chemical techniques are used to prepare ZnS thin films, such as chemical bath deposition (CBD) [11], spray pyrolysis [12], sol-gel [13], sputtering [14], evaporation [15], pulsed laser deposition (PLD) [16], and SILAR [17].

The SILAR technique is one of the most popular techniques. It is economical and able large area deposition. The most important advantage of SILAR is to alter the properties of the deposited thin films. In the present work, ZnS thin films have been deposited by using SILAR technique and then deposited samples were characterized by using X-ray diffraction (XRD), Field Emission Scanning Electron Microscope (FESEM), EDAX and UV Visible spectroscopy.

EXPERIMENTAL DETAILS

The ZnS thin films were deposited in three steps: 1) substrate cleaning, 2) preparation of precursors and 3) ZnS deposition. The substrate cleaning plays an important role in the deposition of thin film. The glass substrate was initially cleaned by using detergent, distilled water, chromic acid and acetone.

The zinc acetate is used as a zinc ion source as cationic precursor and Thiourea is used as a sulphur ion source as Anionic precursor. The 0.4M of zinc acetate and 30ml of de-ionized water are mixed together and stirred with magnetic stirrer to get homogeneous solution then ammonia, as a complexing agent was added drop by drop continuously stirring the solution. Then, 0.8M of Thiourea and 30ml of de-ionized water are mixed together and stirred with magnetic stirrer to get homogeneous solution.

One SILAR cycle contained four steps: (a) the substrate was immersed into first reaction containing the aqueous cationic precursor, (b) rinsed with water, (c) immersed into the anionic solution, and (d) rinsed with water. Figure 1 shows the scheme of SILAR technique for the deposition of ZnS thin films.

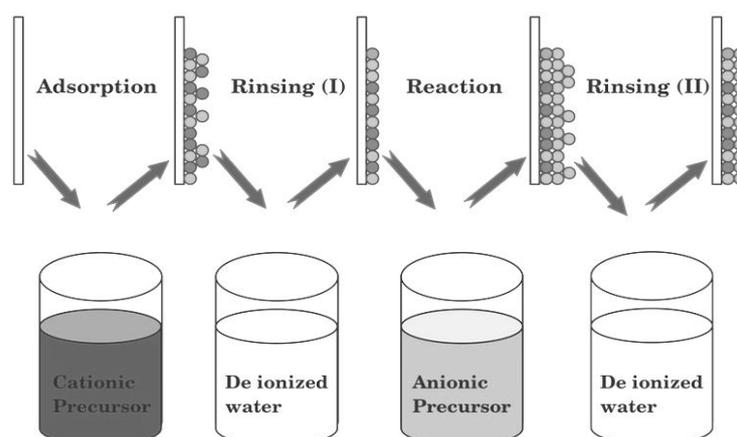


Figure 1: SILAR technique

Finally these grown samples were characterized using XRD, FESEM, EDAX and UV.

X-Ray Diffraction Analysis

Figure 2 shows XRD patterns of the grown ZnS thin films prepared by SILAR methods. The materials were scanned in 2θ range 20° - 80° . The graph is plotted 2θ against intensity. The 2θ values appears at 33.352° and 59.504° corresponding to the lattice planes (200) and (222) respectively. As seen, the (200) peak has the highest intensity. All the diffraction peaks are in good agreement with the JCPDS data (00-061-0079). The XRD data reveals that the ZnS has cubical structure. The average grain size of ZnS was calculated by using Scherrer's formula:

$$D = \frac{0.94 \lambda}{\beta \cos\theta}$$

Where $\lambda = 1.5404\text{\AA}$ for $\text{CuK}\alpha$, β is the full width at half maximum (FWHM) and θ is the diffraction angle. The average grain size of ZnS thin films were found to be about 70 nm.

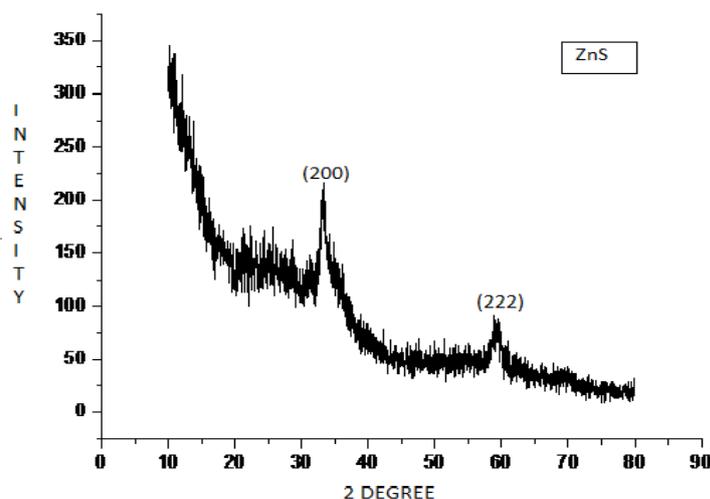


Figure.2: XRD Graph of ZnS Thin Film

Field Emission Scanning Electron Microscopic Analysis

Figure 3 shows micrographics of the ZnS thin films at room temperature. The composition is found homogeneous. The particles are deposited all over the area uniformly. The micrograph shows the spores nature of deposited material. The composition shows that the nano particles forma clusters and the size of clusters are found about 100 to 300 nm.

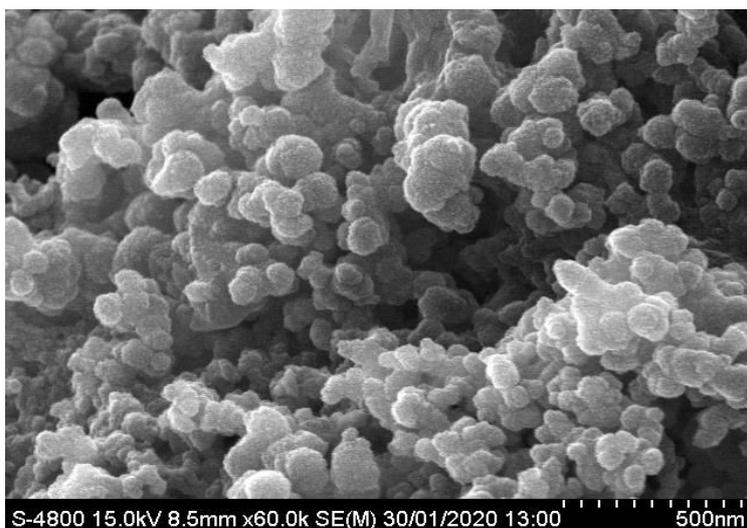


Figure. 3: FESEM image of ZnS Thin Film

EDAX Analysis

The chemical composition of the grown sample is determined with the help of EDAX technique. The figure 4 shows the EDAX pattern of grown ZnS thin film. The spectrum show the Zn is detected at 1 and 8.7 KeV while S is found at 0.1 and 2.3 KeV. The film is found to be oxy rich because of water molecules.

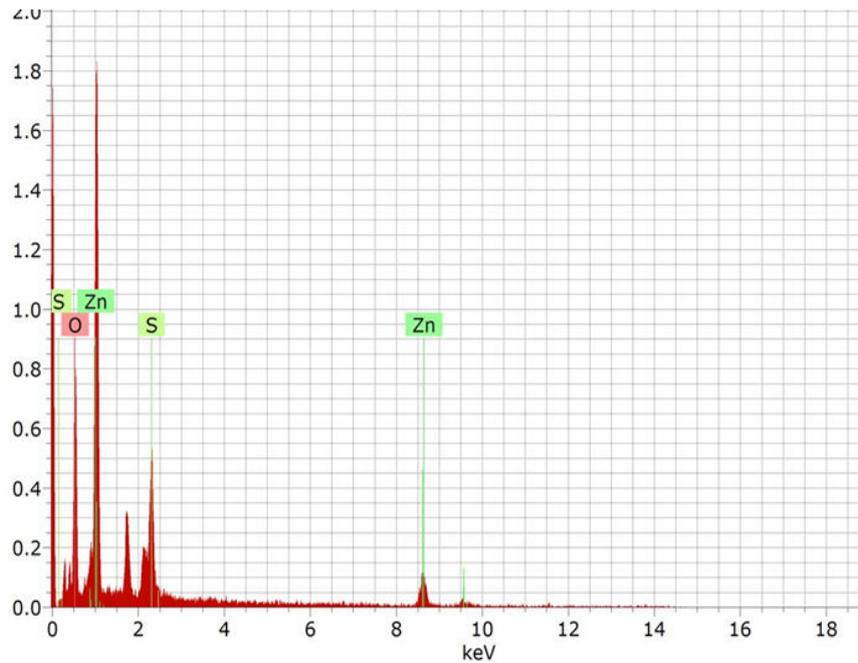


Figure.4: EDAX Pattern of ZnS Thin Film

Optical Analysis

The optical properties of grown sample were study by UV- VIS spectrophotometer. Figure 5 shows the variation in the absorbance with respect to wavelength. The absorption spectra of the ZnS film were recorded as a function of wavelength range 300nm to 800 nm with glass. The ZnS thin film presents a high absorbance in the visible region (300nm – 350nm).

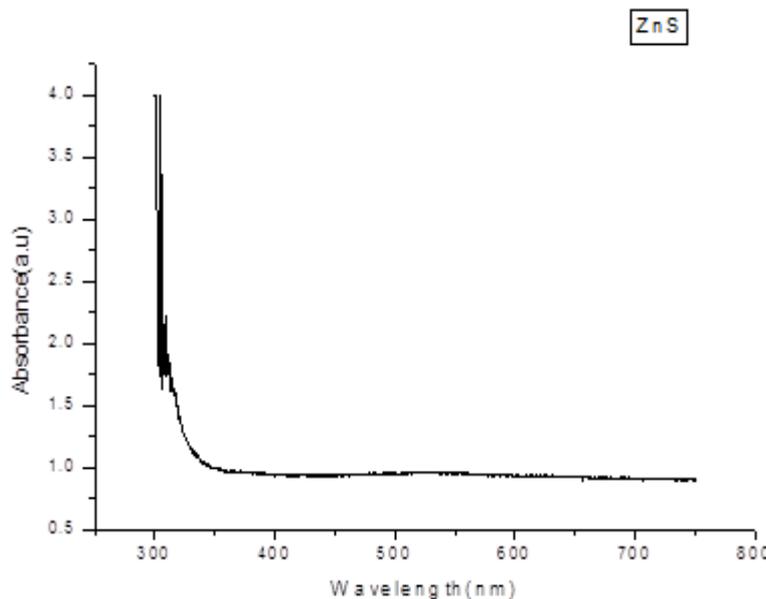


Figure 5: Variation of optical absorbance with wavelength

The optical band gap is calculated by using Tauc’s relation:

$$(\alpha h\nu)^{1/n} = \beta (h\nu - E_g)$$

Where, α - absorbance coefficient, h - plank’s constant, E_g - Energy band gap β - constant and ν -frequency of the incident light.

For direct band gap plot of variation $(\alpha h\nu)^2$ vs $(h\nu)$ shown in figure 6. It gave a straight line in the domain of higher energies indicating a direct optical transition. Extrapolation of the line to the base line where the value of $(\alpha h\nu)^2$ is zero gives energy band gap E_g as 3.78 Ev.

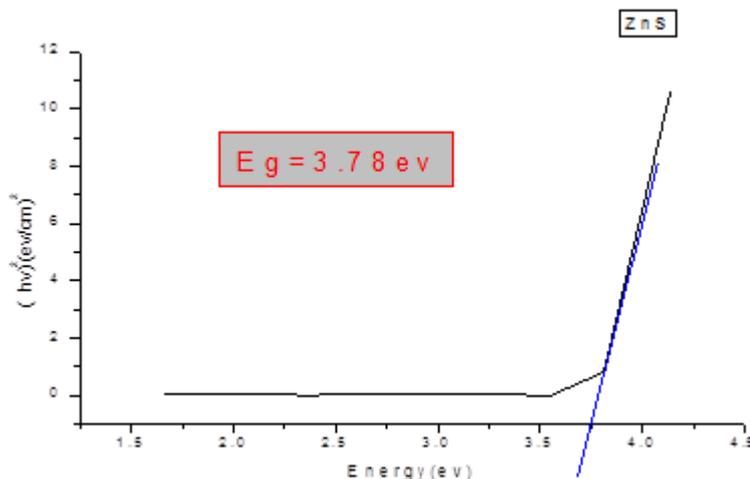


Figure 6: Variation of $(\alpha hv)^2$ vs (hv)

CONCLUSION

The films of ZnS deposited on glass substrates by using SILAR method. The XRD reveal the cubical crystalline structure. The FESEM micrographs show a deposit films with uniform and porous in nature. The EDAX spectrum confirms the Zn and S. There no evidence of other impurities. The optical transmission spectrum determines the optical band gap of 3.78eV. The films present a good optical transmission in the visible domain.

REFERENCES

1. Amel Tounsi¹, Djahida Talantikite-Touati^{1,3*}, Hamid Merzouk^{2,3}, Hadjira Haddad¹, Roumaïssa Khalfi¹ Study of the properties of La-doped ZnS thin Films synthesized by Sol-gel method *Advanced Materials Letters* 2018, 9(3) 216-219
2. Goktas, A.; Aslan, F.; Yasar, E.; Mutlu, I. H.; *J. Mater. Sci.: Mater. Electron.*, 2012, 1361.
3. Cattell A.F., Cullis A.G.: 'The variation in the luminescent and structural properties of sputterdeposited ZnS:Mn thin films with post-deposition annealing', *Thin Solid Films*, 1982,92, pp. 211–217
4. J. H. Park, J. Y. Kim, B. D. Chin, Y. C. Kim, and O. O. Park, *Nanotechnology* 15, 1217 (2004).
5. E. Katz, and I. Willner, in *Nanobiotechnology*, Wiley-VCH (Ed.), Weinheim, 2004.
6. Liu, B.; Liu, Q.; Tong, X.; Lü, C.; *Colloid. Surf.*, 2013, A, 434, 213.
7. Kumar V1, Saroja M2, Venkatachalam M3 and Shankar S4 *International Journal of Recent Scientific Research* Vol. 6, Issue, 11, pp. 7377-7379, November, 2015
8. Jin, Q.; Li, Y.; Huo, J.; Zhao, X.; *Sensors and Actuators*, 2016, B 227, 108.
9. K. Catchpole, S. Pillai, *J. Lumin.* 121 (2006) 315.
10. A. Goudarzi, G.M. Aval, R. Sahraei, H. Ahmadpoor, *Thin Solid Films* 516 (2008) 4953.
11. P.K. Nair, M.T.S. Nair, *Semicond. Sci. Technol.* 7(1992) 239
12. R.R. Chamberlin, J.S. Skarman, *J. Electrochem. Soc.*113 (1966) 86.
13. Gómez-Barojas, E.; Sánchez-Mora, E.; Castillo-Abriz, C.; Flores- Rodríguez, E.; Silva-onzález, R.; *J. Supercond. Nov. Magn.*, 2013, 2337.
14. Gayou, V. L.; Salazar-Hernandez, B.; Constantino, M. E.; Andres, E. R.; Díaz, T.; Macuil, R. D.; Lopez, M. R.; *Vacuum*, 2010, 84, 1191.
15. Z. Porada, E.Schabowska, *Thin Solid Films* 145 (1986) 75.
16. Cui, J.; Zeng, X.; Zhou, M.; Hu, C.; Zhang, W.; Lu, J.; *Journal of Luminescence*, 2014, 147, 310.
17. Monroy E., Omnes F., Calle F.: 'Wide-bandgap semiconductor ultraviolet photodetectors', *Semicond. Sci.Technol.*, 2003, 18, pp. 33–51

GREEN BANKING: PAVING A PATH FOR HEALTHY ENVIRONMENT VIA GREEN LOANS**Mrs. Yasmin A. Barodawala**

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ABSTRACT

When climate crisis is ailing the sapient inhabitant countries, all of the international platforms and authorities are aligning to safeguard the earth from its depletion. This brings the time for banks to go green too, and contribute in restoring the planet's health. The title under which they promote environment related sustainable development goals, is popular known as 'GREEN Banking'. This paper introduces multifarious sectors used by banks on the motive of green banking. But the essence of the study lies in demonstrating the green loans advanced by banks to support the environmental goals through renewable energy projects.

Keywords: Green Banks, Green Loans, Priority sector, Renewable Energy sector.

INTRODUCTION

The Policy Environment document of RBI - 8th November 2010, has remarked about Green Banking and Green initiatives for all banks in India. Online banking, mobile banking, e-banking, mortgage loans, Solar ATM, Brown ATM, white label ATM, online saving accounts are the examples of product and services offered under the banner of green banking. According to Indian Banks Association (IBA 2014) Green banks do not hold a separate identity but are the existing banks who realize the dilemma of environmental challenges faced today and voluntarily participate in protecting the eco-system. These banks, also known as ethical and sustainable banks, enhance Carbon Neutrality. Almost all the banks today understand that the only permanent solution is to turn towards nature, adopt eco-friendly products and services and get along with modern technology which is beneficial for one and all. Considering this vital purpose, the banks have also taken the responsibility to do as much as possible, with all their might, to participate in this replenishing journey.

REVIEW OF LITERATURE

(Chen, Siddik, Zheng, Masukujjaman, & Bekhzod, 2022) studies Green Banking practices effect on banks' environmental performance in Bangladesh. Using primary data, the analysis infers that bank's employees, daily-operations and policy -related green banking has positive effect on green financing as against customer -related green banking practices.

(Ghosh, Nath, & Abhishek, 2021) public awareness through Google trends is analyzed and finance options using issuance of bonds and bank credit for green projects is included in the study which highlights that there is improvement in both the aspects in India.

(Sharma & Choubey, 2021) this qualitative study using semi-structured in- depth interview, showcases the impact of green products development, green corporate social responsibility and green internal process on green brand image and green trust

(Raj & Kumar, 2020) focuses on banking activities adopted and promoted by banks that can reduce the harm and depletion of environment creating a green impact.

(Hyoungkun & kim, 2020) asserts that risks arising due to climate are causing physical and transitional risks for the financial sector. The theory of change conceptual framework at the sectoral, institutional and combined level is discussed here that will mitigate these risks and have the desired results.

(Herath & Herath , 2019) establishes and studies the relationship between Green banking initiatives and the overall satisfaction of the bank's customer using various independent variables.

(Sarangi, 2018) India's energy mix is inclining more towards renewable energy and is targeting to produce 175 Gigawatts by 2022. Apart from the other inherent challenges, drawing Finance for this sector is a major confrontation especially from the private sector.

(Thomas & Sibylinson, 2018) Banks use products like ATM, mobile banking, online transfer, Internet banking, debit cards, credit cards which are green products that do not cause pollution to the environment.

(Vadrale & Katti, 2016) both public and private sector banks have taken initiatives to adopt green banking. On comparing it is surfaced that Public sector banks have performed well in this context.

(Trehan, 2015) emphasizes that Green Banking will secure greening of industries and also improve the asset quality of the banks. It discusses about environmental management, role of government and green banking strategies.

(Ahuja, 2015) lending on basis of green criteria and lack of customer awareness being major obstacle is covered in this study. Public sector is active in implementation of green banking is shown by Case study of SBI's steps towards it.

PROBLEM STATEMENT

GREEN Banking is mainly looked upon as online banking, mobile banking, e-statement, green channel counters, Solar ATM, Bio-metric ATM, SMS alert, green saving account, green credit cards etc. Ensuing the above avenues, research studies have been focusing chiefly on them, when writing about green banking. Therefore, quite a less concentration has been applied upon the direct energy conservation supported by banks through financing the renewable energy projects. So, this study concentrates on the untapped sector of green loans extended by banks to the renewable energy sector and showcases the contribution of banks in this crucial social cause.

OBJECTIVES OF THE STUDY

1. To understand the concept and approaches adopted for Green banking.
2. To concentrate and focus on green loans extended by banks especially to Renewable Energy (RE) sector.
3. To highlight the potential of Renewable Energy sector and role of banks in complimenting to achieve this sustainable development goals.

RESEARCH METHODOLOGY

This study is descriptive in nature. It is based on secondary data and literature review related to the topic of green banking and sustainable development goals. Data is collected related to Indian banks and renewable energy through published source, IRENA, RBI websites and publications, internet sites and online news channels.

Green Banking Till Now

Green banking means less paperwork, mails and less commuting to banks by the customers which has a beneficial effect on the environment. Not only this, accepting the green banking concept can increase the profitability and efficiency of banks by lowering the costs of shedding the overload of paper and fees for bulk mailing. Also there is lot of saving in designing and maintaining expensive bank branches. Hence recently mostly all the banks are being computerized, using networking and offering online saving accounts to their customers.

Many banks have drawn several benefits from this concept and achieved cost cutting, has increased productivity, better control and management of NPA, able to face the risks, manage the foreign exchange rate fluctuations, Asset Liability Management is carried out successfully, handled the changes in the interest rates, compliance of the regulatory requirements and lastly have a satisfied customer base. (Hart & Ahuja, 1996) analyzed a positive relation between environmental performance and financial performance). In the past bank carried out financial performance analysis only but now analysis of social and environmental performance is also gaining importance.

Some profess that Green Banking as another name of Corporate Social Responsibility(CSR) Activity but green banking is not just a CSR activity but goes beyond in making the society habitable and preserving it for the next generations.

Approaches Adopted by Banks for Greening the Environment.

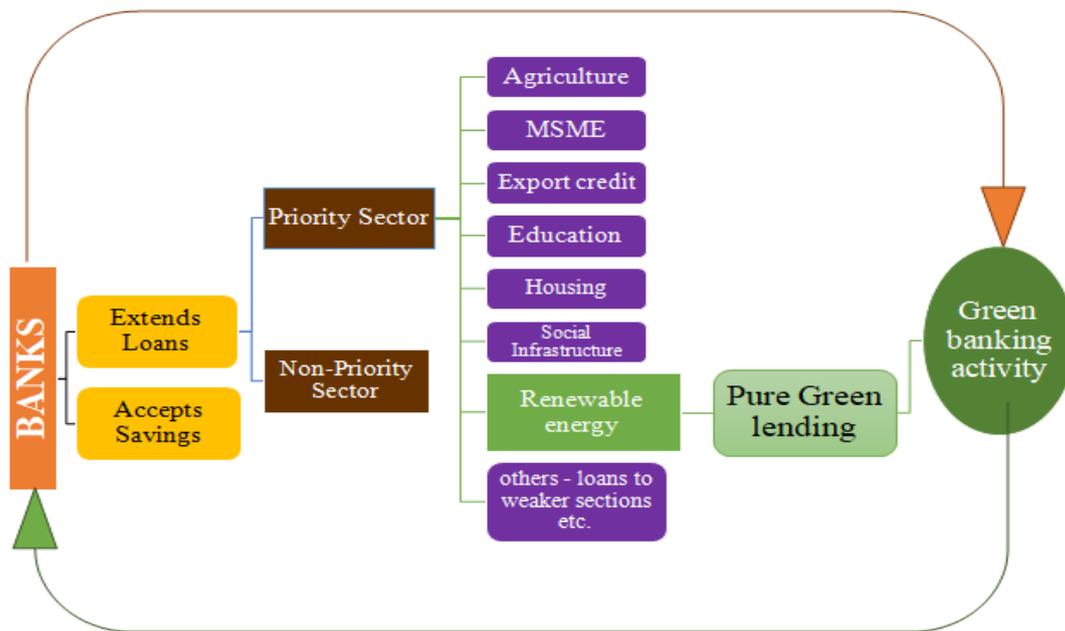


GREEN LENDING

Banks finances several projects but while thinking of green lending it has to focus on the environmental and social risk associated with the execution of these projects. Number of guidelines at internationally and domestically levels are set like Carbon Disclosure Project, National Environment Policy Act(NEPA), CERCLA, World Bank E&S Norms, Equator Principles, ISO 14000, BSE GREENEX etc.

Out of the 20 companies listed in BSE GREENEX majority of them are banks like State Bank of India ICICI Bank, HDFC, Punjab and National Bank and Kotak and Mahindra Bank showing that banks are seriously interested in putting their best foot forward in this drive of making our planet green. Where all are participating and giving their contribution in saving the environment, Banks can also assist eco-friendly groups and offer green lending.

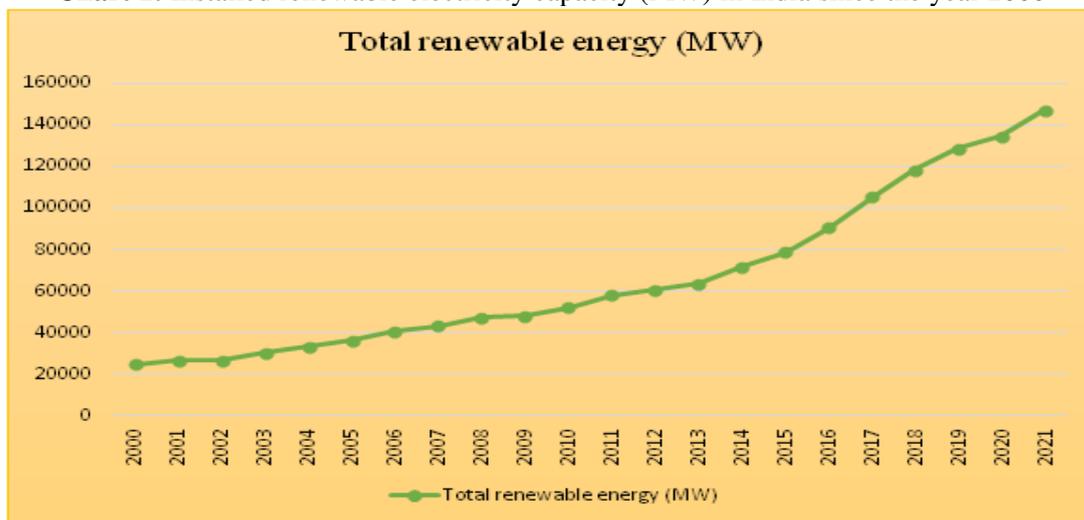
Conceptual Framework of Green Banking



Lending To Renewable Energy Sector

In 2015 RBI included Renewable Energy Resource Sector in Priority sector lending and mandated for all commercial banks to extend loans to this sector as this source creates clean and green energy. Financing such projects will inevitably become green lending which is nothing but Green banking.

Chart 1: Installed renewable electricity capacity (MW) in India since the year 2000



Source: IRENA Renewable Energy Statistics database

The upward trend line in the chart no.1 clearly depicts the growing renewable capacity in India since 2000 to 2021.

Table 1: Commitments Made by Different Financial Institutions of India for Renewable Energy

Bank	Share of Total Committed Amount (%)
SBI	12.6
IREDA	10.9
Yes Bank	10.2
Indus Bank	9.3
India Infradebt	8.2
PTC India Financial Services	5.4
Union Bank of India	5.3
Bank of Baroda	4.2
IDFC	20.2
L& T Finance	13.7

Source: CFA (2018).

Table 2: Bank Credit Outstanding to non-conventional energy as on March 2020

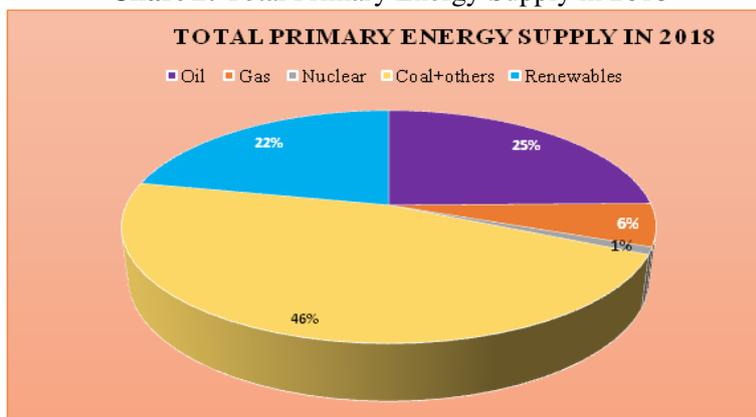
	Public sector banks	Private sector banks	Other Banks
Amount Outstanding (INR Crore)	21,655	12,302	2,586
As % of utility sector credit	6.20%	11.90%	27.10%
As % of total bank credit	0.50%	0.50%	0.70%

Note: Utility = Electricity, Gas and Water supply.

Source: RBI, BSR

The RBI has made mandatory to invest a specific percentage of their investment in the renewable energy sector as ‘Renewable Finance Obligation’. Table no 2 reflects all sector’s bank credit given for RE projects as on March 2020.

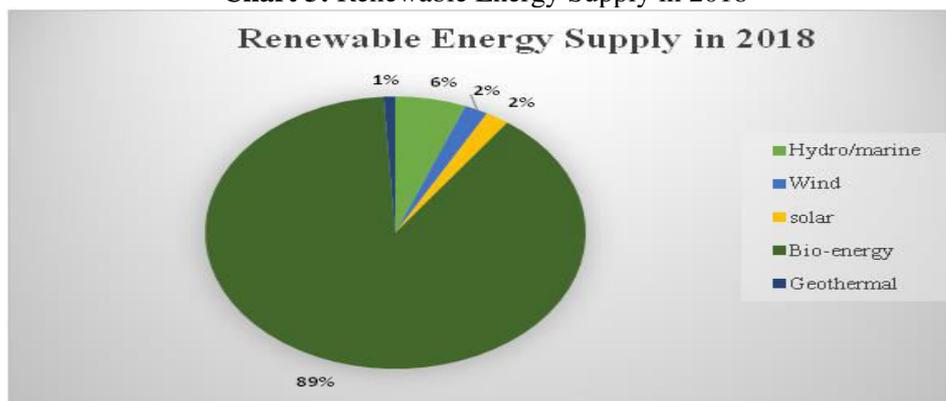
Chart 2: Total Primary Energy Supply in 2018



Source: IRENA

The total primary energy supply in India for 2018 is showcased in the chart no.2 out of the conventional energy that is Oil, Gas, Nuclear, Coal and others the share of Renewable Energy is 22%. This shows there is much scope of its expansion and promotion.

Chart 3: Renewable Energy Supply in 2018



Source: IRENA

Energy supply received from the renewable sources like hydro, wind, solar, bio-energy and Geothermal in India in 2018 displayed in the chart no.3. The share of Bio-energy is largest 89%, followed by Hydro 6%, Solar 2%, wind 2% and Geo-thermal 1%.

Table 3: Potential of Power Generation Capacity in India in the New Policies Scenario (GW)

Type	2014	2020	2030	2040
Fossil Fuels	204	280	419	576
Coal	174	230	329	438
Gas	23	41	76	122
Oil	7	9	13	15
Nuclear	6	10	24	39
Renewables	79	147	304	462
Hydro	45	58	83	108
Solar PV	23	50	102	142
Others	7	11	18	30
Total	289	436	746	1076

Source: ADBI Working Paper 863

Table 4: India’s RE Sector at a Glance since its inclusion in priority sector lending.

Year	Installed RE Capacity (in GW)	% Share of RE in total Installed Capacity	Generation from Renewable Sources (in BU)	Total Generation from all sources (in BU)	% Share of RE in Generation
2014-15	39.55	14.36	61.78	1110.18	5.56
2015-16	46.58	15.23	65.78	1172.98	5.60
2016-17	57.90	17.68	81.54	1241.38	6.56
2017-18	69.77	20.24	101.83	1303.37	7.81
2018-19	78.31	21.95	126.76	1375.96	9.21
2019-20	87.07	23.52	138.32	1390.93	9.95
2020-21	92.54	24.53	111.92	1017.81	11.00
	(Up to Jan 2021)	(Up to Jan 2021)	(Up to Dec 2020)	(Up to Dec 2020)	(Up to Dec 2020)

Source: mnre.gov.in

To sum up, the entire RE sector of the country since it was included in the list of priority sector as on 2014-15 is detailed in the table no.4. The data shows the growing trend, year on year, of this Energy source and as suggested in the Parliamentary Standing Committee on Energy -21st Report ‘The government should set up green bank system to address the financial challenges to accelerate the clean energy projects in the country to achieve the goal of sustainable development and imprint its footprints at international level.

Role of Banks in Promoting RE

In late 2020, RBI doubled the loan limit to RS 30 Crores (about USD 4 million) for extending loans for individual renewable energy projects as priority sector lending. RBI also acclaimed that banks should be sensitized about the importance and benefits of renewable energy and should not overlook this sector in their priority sector lending.

State Bank of India, the largest public sector banks of the country while declaring its results for the financial year 2020-21, claimed to approve over 319.18 billion in renewable energy project finance in India as of March 2021.

It has already financed 752 renewable energy projects with a total installed capacity of 13,801.7 MW until March 2021.

SBI has introduced ‘Renewable Energy Policy’, which includes ground-mounted solar power, wind energy, rooftop solar power which are grid-connected, small hydro (up to 25 MW) and waste-to-energy segments as shown below:

Financing
by SBI in
RE

Green Banking

Solar photovoltaic Ground-mounted
RS.185.65 billion (~\$2.48 billion)Rooftop Solar Projects
Rs.18.64 billion (~\$249.21 million)Wind Energy
RS.91.37 billion (~\$1.22 billion)Small Hydro Projects
Rs.20.93 billion (~\$279.8 million)Biomass Projects
Rs.1.65 billion (~\$22.05 million)Waste-to-energy projects
Rs.940 million (~\$12.56 million)**CONCLUSION**

Nailing the finances extended to Renewable Energy sector, the banks can accomplish a major and prominent portion of their goals of sustainable development apart from advancing the green loans to other priority sectors as well. Although, the banks are required to surpass persisting finance related challenges inherent with this sector, banks can get reinforcement by the idea of how much beneficial green banking could be for its image and overall performance in the industry. We observe, that a lot more could be progressed and developed in green banking section and in the near future we hope that it widespread its strands and strengthens the concept of green banks as it would be a blessing to our beautiful Earth.

REFERENCES

1. Ahuja, N. (2015). Green banking in India: A Review of Literature. *International Journal for Research in Management and Pharmacy*, 04(01), 11-16.
2. Chen, J., Siddik, A. B., Zheng, G.-W., Masukujjaman, M., & Bekhzod, S. (2022). The Effect of Green Banking Practices on Banks' Environmental Performance and Green Financing: An Empirical Study. *Energies*, 15(1292), 01-22. doi:doi.org/10.3390/en15041292
3. Ghosh, S., Nath, S., & Abhishek. (2021, January). Green Finance in India: Progress and Challenges. *RBI Bulletin January 2021*, pp. 61-72.
4. Hart, S. L., & Ahuja, G. (1996, March). Does It Pay To Be Green? An Empirical Examination Of The Relationship Between Emission Reduction And Firm Performance. *Business Strategy And The Environment*, 05(01), 30-37. doi:https://doi.org/10.1002/(SICI)1099-0836(199603)5:1%3C30::AID-BSE38%3E3.0.CO;2-Q
5. Herath , H. A., & Herath , H. S. (2019, January). Impact of Green Banking Initiatives on Customer Satisfaction: A Conceptual Model of Customer Satisfaction on Green Banking. *IOSR Journal of Business and Management (IOSR-JBM)*, 21(01), 24-35. doi:DOI: 10.9790/487X-2101032435
6. Hyoungkun, P., & kim, J. D. (2020). Transition towards green banking: role of financial regulators and financial institutions. *Asian Journal of Sustainability and Social Responsibility*, 05(05), 01-25. doi:doi.org/10.1186/s41180-020-00034-3
7. Raj, A. A., & Kumar, P. N. (2020, April). Recent Green Banking Initiative Of Different Banks. *Mukt Shabd Journal*, 09(04), 492 -497.
8. Sarangi, G. K. (2018, August). Green Energy Finance in India: Challenges and Solutions. ADBI Working Paper 863. Tokyo: Asian Development Bank Institute. Retrieved from [https:// www.adb.org/ publications/ green-energy-finance-india-challenges-and-solutions](https://www.adb.org/publications/green-energy-finance-india-challenges-and-solutions)
9. Sharma, M., & Choubey, A. (2021, May). Green banking initiatives: a qualitative study on Indian banking sector. *Environment, Development and Sustainability (2022)*, 24, 293–319. doi:https:// doi.org/ 10.1007/s10668-021-01426-9

-
10. Thomas, J., & SibyLinson. (2018). Customers' Awareness And Adoption Of Green Banking In Thrissur District. VISTAS, 07(01), 37-46.
 11. Trehan, R. (2015). Green Banking In India. Journal of Poverty, Investment and Development, 14, 27-32. Retrieved from www.iiste.org
 12. Vadrane, K. S., & Katti, V. P. (2016, February). Green Banking Initiatives By Indian Public And Private Sector Banks., (pp. 01-15). Belgavi.

WEBSITES

<http://www.infraline.com/Details/Panel-For-Green-Banks--Renewable-Finance-Obligation-To-Boost-Clean-Energy-394091.htm>

<https://economictimes.indiatimes.com/industry/renewables/parliamentary-panel-for-innovative-tools-like-green-banks-renewable-finance-obligation-to-boost-clean>

www.rbi.org.in

www.irena.org

www.mnre.gov.in

www.powermin.gov.in/en

www.resurgentindia.com

www.oecd.org/india/

A STUDY ON FINANCIAL LITERACY OF WOMEN WITH REFERENCE TO MUMBAI CITY**¹Preeti Salecha and ²Dr. Navin Mukesh Punjabi**¹Visiting Faculty and ²I/C Vice Principal, H.R. College of Commerce and Economics**ABSTRACT**

India has a female population of 669 million and is a country where majority of the females manage the households, from buying a needle, a food product to every daily necessity of a house. Managing a house, budgeting and meeting all needs of family has been one of the strengths of Indian women. A women of the house can also be considered as a lender of last resort where she saves money even in small rice barnis(bottles) of the kitchen. Saving has been an integral part of Indian women whether she is qualified or not, rural or urban, a corporate worker or a home maker. However, inspite of saving, budgeting and understanding money she hardly participates or has a say in investment decisions of the family. It is important to understand financial literacy of women and provide proper guidance for the same. Financial Literacy of women would also help in attaining various Sustainable Development Goals- 1. No poverty, 4. Quality education and 5. Gender equality. A number of initiatives has been started by RBI, SEBI, NSE and many such institutions to promote financial literacy. A strategy NSFE 2020-25 has also been adopted by National Centre for Financial Education to achieve a vision of financially empowered India. This paper is a small attempt to understand financial literacy of women in Mumbai city (the financial capital of India).

Keywords: Financial literacy, Sustainable development goals, Savings and Investments

1. INTRODUCTION

A human resource of 1.39bn, the fifth largest economy in the world India - one of the fastest growing countries in the world, but still among the list of poor countries of Asia. (as per World Bank 2020 GDP per capita). According to a report by Securities Exchange Board of India (capital market regulator) only 27% of the Indian population is financially literate.¹

Financial Literacy is defined as a combination of financial awareness, knowledge, skills, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being. (OECD, 2012) Financial literacy can be defined as the understanding of individuals about basic financial products, money management, saving and investments and application of these concepts in their day-to-day life for attainment of short and long-term goals. India's female population can act as a demographic advantage if they are financially literate. It can contribute for a robust economic and strong financial system in the world. Keeping in mind, the fast changes in financial world, it is important to assess the financial literacy of women to help make better strategies and specially in city of Mumbai which is considered as financial capital of the nation.

2. REVIEW OF LITERATURE

- I. (Iusardi, 2019) tries to explain the importance of financial literacy for all age groups across the world. The article "financial literacy and the need for financial education: evidence and implications" highlights about the findings of world flat project, survey of household economics and financial decision, 2018 aegon retirement readiness survey, the survey of consumer finances (scf) and many such surveys manifesting the level of financial literacy and behaviour of individuals in various countries across the globe. The article depicts the need for financial literacy in financially well-developed countries as well. The author also highlights financial literacy levels based on gender and age groups through factual numbers; however majority of it is through secondary literature.
- II. (p., 2018) in the research paper titled financial literacy and financial education in india: an assessment, explains about various initiatives started by irda, pfrda, sebi, rbi, public sector banks and ngos to promote financial literacy in india. It also talks about national strategy for financial education and the efforts to encourage financial education in india. The paper also gives some data facts based on results of surveys of visa and master showing ranking of financial literacy in india compared to global peers. The author thus concludes by making recommendations for boosting effectiveness in current financial programs.

¹ <https://www.financialexpress.com/money/the-growing-significance-of-financial-literacy-in-india-gaps-and-opportunities/2410548/>

III.(agarwal, kureel, & yadav, 2017) tries to explain the relationship between growth of an economy and financial literacy. The researchers specially focus on youth and how it can be trained in financial world to make sound financial decisions with clarity. The study focuses on initiatives adopted by rbi, sebi, oecd to promote financial literacy in india.

3. OBJECTIVES OF THE STUDY

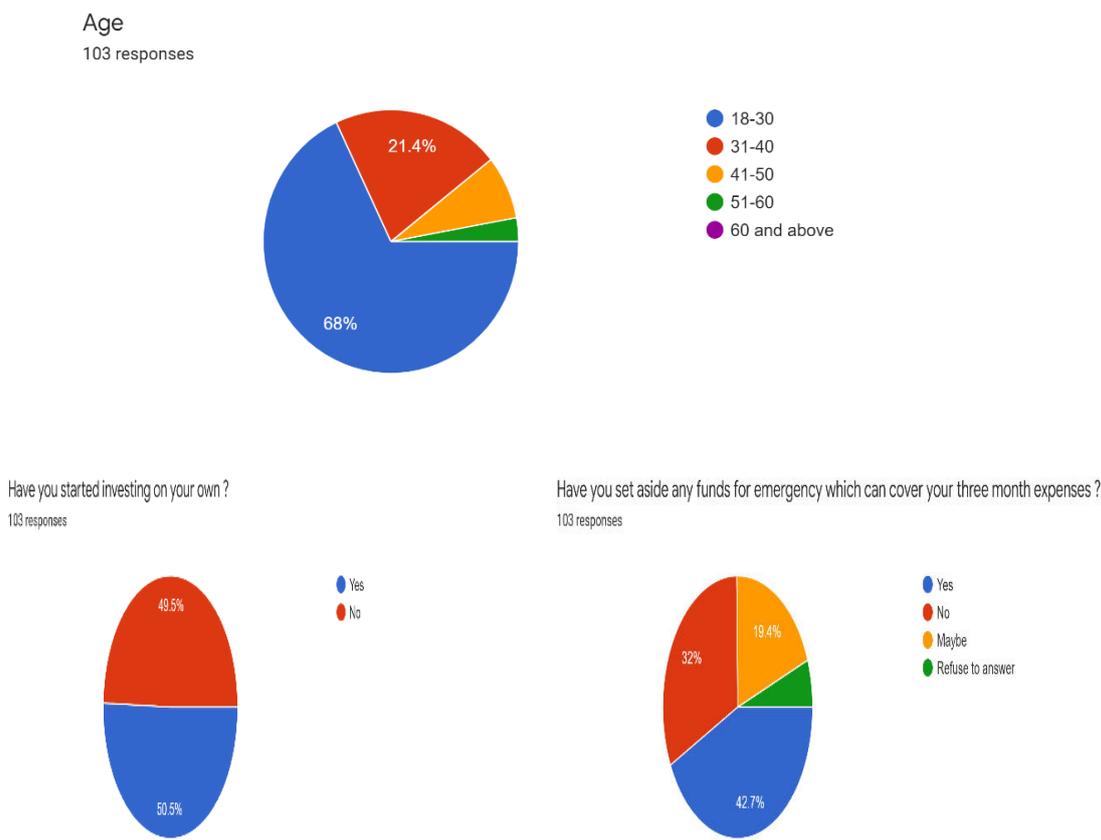
1. To understand financial literacy of women in Mumbai city.
2. To study the challenges faced by women in making investments.
3. To evaluate the best source of information for financial literacy.

4. RESEARCH METHODOLOGY

The researcher has collected primary as well as secondary data for the above objectives and literature review has been done for the same. Primary data has been collected from women in Mumbai city by Google form. Sample size of 103 respondents is considered for the study. The secondary data has been gathered from published materials in various journals, newspapers, books, business magazines and various websites.

5. Analysis

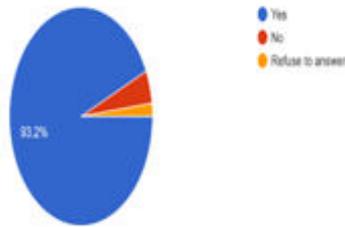
Researcher has collected data by framing google forms-based questionnaire. This questionnaire is sent to 103 respondents for research study. The questions are taken from Financial Quiz article of Economic Times¹ and Finra Investor Education Foundation².The data collection is done through random sampling.



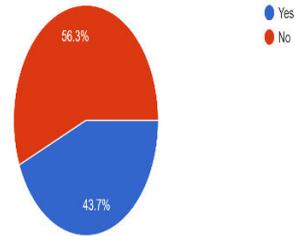
²<https://economictimes.indiatimes.com/wealth/plan/women-should-take-this-quiz-to-check-their-financial-literacy/articleshow/74415218.cms>

³<https://www.usfinancialcapability.org/quiz.php>

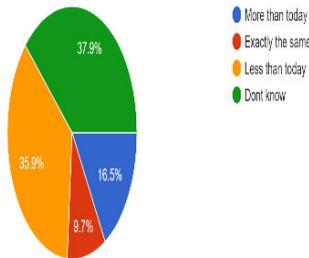
Do you have a bank account ?
 103 responses



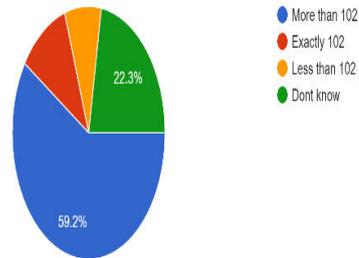
Are you well versed on how to take a loan, its procedures and how to manage its EMI ?
 103 responses



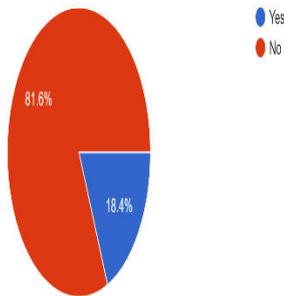
Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. How much would you be able to buy with the money in this account?
 103 responses



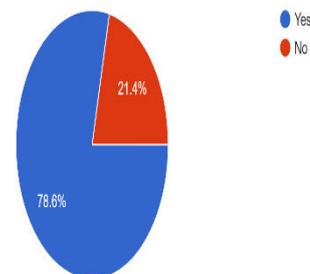
Suppose you had 100 rupees in a savings account an per year and the interest rate was 2 %. After 5 years, how much do you think you would have in the account if you left the money to grow ?
 103 responses



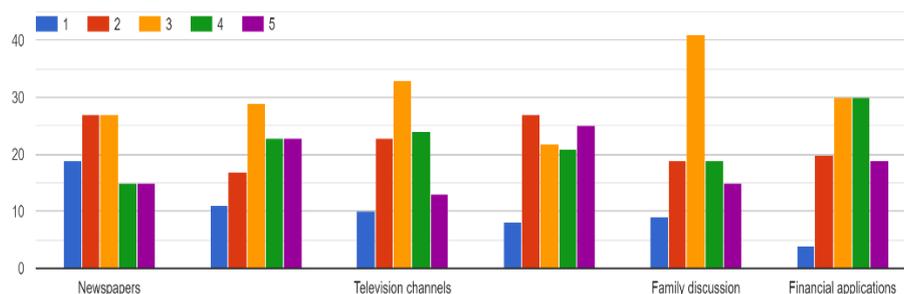
Have you attended any seminar / workshop by NCFE/ SEBI/ RBI/ IRDA / PFRDA ?
 103 responses



Would you like to attend any training session offered by regulatory and securities market institution ?
 103 responses

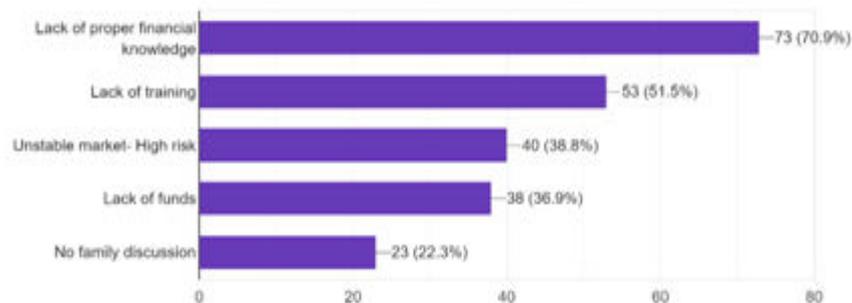


Which is the best source to increase financial literacy of college students?(rate from 1 = lowest, 5 = highest)



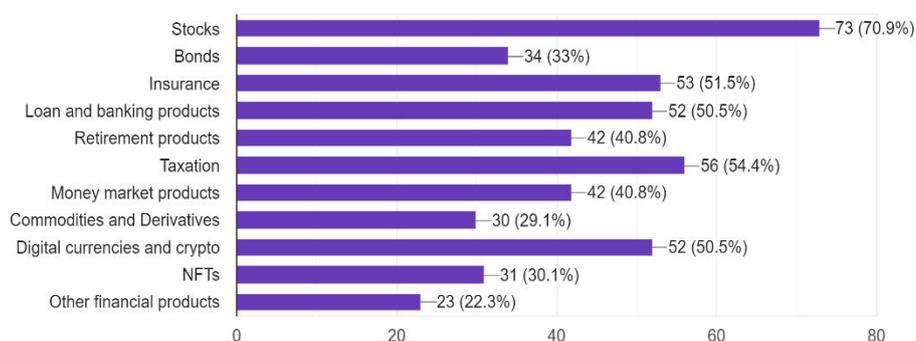
What are the challenges you face in adoption of financial products?

103 responses



On which topics would you like to learn about ?

103 responses



6. INTERPRETATION AND CONCLUSION

The Data is Collected from 103 Women of Mumbai City Between age Group of 18-60 and Above. It was Observed

1. Only 50.5% of women invest on their own, whereas 49.5% do not, 93.2% had a bank account but only 47.6% of women knew how to take a loan and manage its procedures.
2. 6 questions were asked to test the quantitative knowledge but almost 50% of the answers were incorrect.
3. 81% of the sample never attended any seminar undertaken by financial regulators, 73% would like to attend and learn from the training sessions.
4. The major challenges faced by women were lack of financial knowledge and lack of training, followed by unstable market and lack of funds.
5. The major three topics on which they wanted to learn are stocks, digital currencies and taxation.

The study aims to create tangible benefits to various stakeholders in terms of their strategic decision making. In fact, the government can pay its attention while framing policies. It is expected that it will not only help to derive financial literacy in Mumbai but also extend to various cities across the world.

7. REFERENCES

Journal Articles

1. Ouattara, M. W., & Zhang, Y.-F. (2020). Financial Literacy And Poverty Reduction: The Case of Indonesia. *Adbi Working paper Series*.
2. Janposri, P. (2020). *Journal of Population and Social Studies (JPSS)*, Volume 29, 2021, p. 177-194.
3. Lusardi, A. (2019). Financial Literacy and the need for Financial Education: Evidence and Implications. *Lusardi Swiss Journal of Economics and Statistics*.

-
-
4. P., A. (2018). Financial Literacy and Financial Education in India: An Assessment. International Research Journal of Commerce Arts and Science.

WEBSITES

1. <https://www.moneylife.in/article/india-ranks-23rd-in-financial-literacy-among-28-countries-says-visa/26247.html> as assessed on 20th May, 2021.
2. [https://streetfins.com/the-importance-of-financial-literacy-in-india/#:~:text=According%20to%20the%20report%20conducted,adult%20population%20is%20financially%20literate.&text=A%20survey%20was%20conducted%20by,50%20years%20\(urban%20population\)](https://streetfins.com/the-importance-of-financial-literacy-in-india/#:~:text=According%20to%20the%20report%20conducted,adult%20population%20is%20financially%20literate.&text=A%20survey%20was%20conducted%20by,50%20years%20(urban%20population)) as assessed on 10th January,2021.
3. <https://www.financialexpress.com/market/only-27-indians-are-financially-literate-sebis-garg/2134842/> as assessed on 25th December, 2020.
4. <https://m.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=1156> as assessed on 17th Dec, 2020.

EARTHQUAKE: CAUSES AND MANAGEMENT IN HIMACHAL PRADESH**Vishal Kumar**

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ABSTRACT

Earthquakes are one of the major natural disasters as they are the most unexpected and the most devastating among other natural disasters. Every year it causes great loss of life and property worldwide. India has seen the most exceedingly terrible tremors somewhat recently. The turn of the century saw one of the most shocking Bhuj quake in 2001. Earthquakes are thus a major cause of concern in India's disaster profile as it has resulted in significant losses. In order to reduce the damage caused by these incidents, the disaster management committee has put in place some safety measures. The threat of an impending earthquake in the state hangs like the proverbial Damocles sword over the large numbers who live in the higher risk zone V as per the seismic zoning map of India. However, the recent earthquake occurrences have brought forth the question of earthquake preparedness in Himachal Pradesh again. This paper is an attempt to highlight the causes of earthquakes in Himachal Pradesh, the damage it results in and various programs and policies designed to manage them. It also discusses the gaps in earthquake preparedness and steps that can be taken to mitigate the risk of earthquakes better. This will protect us from suffering significant losses and will help us to cope better with this hazard.

Keywords: Damocles sword, Earthquake, Zoning, Earthquake Management

INTRODUCTION

Himachal Pradesh is prone to various types of disasters. Out of the total 33 hazards identified by the State is vulnerable to 25 hazards. The state is located at 33.3-36.0 degree North latitude and 75.6-79.0 degree East longitude in the Western Himalayas. Seismically it lies in the great Alpine- Himalayan seismic belt running from Alps mountains through Yugoslavia, Turkey, Iran, Afghanistan, Pakistan, India, Nepal, Bhutan and Burma. The terrain is hilly all through the state of HP, the ranges varying from the Shivaliks in the south to the tall snow clad Pirpanjals in the North. These are traversed by major rivers Sutlej, Beas, Ravi and other tributaries. There was a time when regions of India away from the Himalayas and other inter-plate boundaries were considered relatively safer and were at less risk of damage from earthquakes. In the past, however, even these areas have experienced devastating earthquakes, albeit significantly lower than the Himalayan earthquakes. Recent research suggests that in light of the seismic risk of these regions, many areas classified as low risk may be placed at a higher level of seismic risk, or vice versa. A number of damaging earthquakes have occurred in the HP territory during 20th century for which information is well recorded. The earthquake activity in HP is attributed to the Himalayan orogeny. Based on the latest concept of plate tectonic model of the earth, the Himalayan mountains have formed due to continuous thrusting of the Indian plate with Eurasian plate since Cretaceous times. The present geological structure and the tectonics of the Himalayas have been formed as a result of this continued collision. There are regional- tectonic features in the Himalayas like the main boundary fault (MBF) and Main Central Thrust (MCT) remaining parallel to the strike length of Himalayas. Besides, the Krol, the Giri, Jutogh and Nahan thrusts lie in this region. Besides that there are scores of smaller faults, like the Kaurik Fault which triggered the 1975 Kinnaur earthquake. The increase in the risk of earthquakes is due to the acceleration of development activities driven by urbanization, economic development and global trade in the Indian economy. As a result, the loss of human life is not the only determinant of how destructive the earthquake was, significant economic losses leading to the collapse of a local or regional economy after an earthquake can have long-term negative effects across the country and are thus a major factor to consider in earthquake risk assessment.

EARTHQUAKES AND ITS TYPES

The Earth's crust is made of tectonic plates. These plates keep moving slowly. Sometimes, they get stuck at their boundaries due to friction and when the pressure for movement overcomes the friction, energy is released in the form of waves or vibrations that travel through the earth's crust and shakes the earth. So, the shaking of the surface of the earth due to a sudden, rapid release of energy in the form of vibrations is called an earthquake. Seismic waves (also known as S waves) are created by this rapid release of energy that travel in all directions. The seismic activities in an area determine the type and intensity of the earthquake. An earthquake can range from minor tremors to large building shattering shock. Minor quakes brought about by little vibrations happen at regular intervals however extraordinary seismic tremors happen on account of blinding (ordinary, converse and strike-slip) cause an incredible number of interruption.

The area or point underneath the outer layer of the earth where the quake begins is called hypocenter and the area straight over the hypocenter on the outer layer of the earth is known as the focal point. Below are few types of earthquakes:

1. **Tectonic Earthquakes:** Generated due to sliding of the rocks along the fault plane. This is the most commonly occurring type of earthquake.
2. **Volcanic Earthquake:** Occur due to volcanic activities and displacements caused because of those. These are confined to areas of active volcanoes.
3. **Collapse Earthquake:** These occur in the areas of intense mining. Roofs of underground mines collapse that cause tremors.
4. **Explosion Earthquakes:** Ground shaking caused by huge explosions like a nuclear explosion and chemical explosion
5. **Reservoir Induced Earthquakes:** These occur in the areas of huge reservoirs like dams.

Earthquakes Having Magnitude 6 or More on Richter Scale in Himachal Pradesh

The whole state is prone to severe earthquake hazard. It has been subjected in 1905 to one of giant earthquakes of the recorded seismic history of India having a magnitude of 8.0 on the open ended Richter Scale in which 20000 persons had lost their lives, the towns of Kangra and Dharamshala were razed to the ground and no-government functionary there was left alive even to report the happenings to the higher authorities. It had shaken an area of more than 416000 sq. km. in and around the present Himachal Pradesh. A maximum Intensity X on rossiforel Scale was observed in the epicentral area which when interpreted on the now current Modified Mercalli Scale would be between X and XI. There are 250 earthquakes of Magnitude 4.0 and more including more than 60 with Magnitude 5.0 or more, which have rocked the state of HP and adjoining areas of J&K or UP in the last about 90 years..Some of the great earthquakes in Himachal Pradesh are listed below:

S.No	Year	Month	Day	Magnitude	Coordinates	Tentative location
1	1945	06	22	6.5	32°36'00" 75°54'00"	Minu (Chmaba Distt.)
2	1947	7	10	6.2	32°36'00" 75°54'00"	Minu (Chmaba Distt.)
3	1905	4	4	8.0	32°18'00" 76°15'00"	Karari Dal(Distt.Kangra)
4	1906	2	28	7.0	32°00'00" 77°00'00"	Near Karshing(Distt.Kullu)
5	1951	09	22	6.4	32 36 76 30	East of Dhan Kanda ,District Chamba

Earthquake Management in Himachal Pradesh

Earthquake Management in Himachal Pradesh Goes Through Different Stages. Some of the Important Areas of Earthquake Management in India Are:

1. Awareness among various stakeholders
2. Structural mitigation measures
3. Appropriate town planning, monitoring and enforcement of earthquake-resistant building codes.
4. Proper earthquake response planning
5. System of decentralized response
6. Trained manpower to deal with the disaster

Bureau of Indian Standards [IS 1893 (Part I):2002], has divided Indian land into four seismic zones. **Zone-II, III, IV and V.** Zone II is the least seismically active region and thus least prone to damage due to earthquake while Zone V is the most active region with maximum chances of damage.

Zone V: Entire northeast India, **Himachal Pradesh**, Uttaranchal, parts of Jammu and Kashmir, part of North Bihar, Rann of Kutch in Gujarat and Andaman & Nicobar Islands.

Zone IV: Rajasthan, parts of Jammu and Kashmir, Delhi, parts of Gujarat, Sikkim, small portions of Maharashtra near the west coast, Bihar, northern parts of Uttar Pradesh, West Bengal and **Himachal Pradesh.**

Zone III: Tamil Nadu, remaining parts of Uttar Pradesh, West Bengal, Gujarat, parts of Punjab, Rajasthan, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Goa, Lakshadweep islands, Kerala, Orissa, Andhra Pradesh, Maharashtra and Karnataka.

Zone II covers other remaining parts of the country.

Earthquake: Causes and Management in Himachal Pradesh

Government of India set up a High-Powered Committee in 1999 and a National Committee after the Gujarat earthquake, to make recommendations on mitigation mechanisms and effective preparedness. The 10th 5-year plan document included a detailed chapter on Disaster Management. The 12th Finance Commission was commissioned to review the financial arrangements for Disaster preparedness and Management. In December 2005, the Disaster Management Act was formulated and enacted.

The National Disaster Response Force (NDRF) endeavors to be the specialist on call at legacy locales, which are defenseless against catastrophes like quakes, floods, tornadoes, and tidal wave across India. The NDMA guidelines of 2007 on earthquake preparedness are very important part of earthquake management in India. There are 6 pillars of earthquake management per these guidelines:

1. Earthquake resistant construction of new structures.
2. Retrofitting of existing structures and selective seismic strengthening
3. Regulation and enforcement.
4. Awareness and preparedness.
5. Capacity development.
6. Emergency response.

HP State Disaster Management Policy 2011

- i). State Disaster Management Authority (SDMA), headed by the Hon'ble Chief Minister. It was to implement activities of Disaster Management in the state.
- ii) Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.
- iii) Engagement in activities that will build the capacities of stakeholders and local communities to cope with calamities.
- iv) Encouraging proactive mitigation measures based on technology, traditional wisdom and environmental sustainability.
- v) Mainstreaming disaster management into the developmental planning and process.
- vi) Addressing gender issues in DM with special thrust on empowerment of women towards long term disaster mitigation.
- vii) Establishing institutional and techno-legal frameworks to create an enabling regulatory environment and a compliance regime.
- viii) Ensuring efficient mechanisms for identification, assessment and monitoring of disaster risks.
- ix) Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communication with information technology support.
- x) Develop and maintain inventory of resources, equipment, supplies for timely and effective mobilisation for search and rescue, relief and rehabilitation.
- xi) Putting in place an effective and well recognised disaster specific incident response system at all levels.
- xii) Promoting and institutionalising unified response strategy in humanitarian crisis and mainstreaming emergency preparedness as an integrated development strategy.
- xiii) Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- xiv) Establishing GO-NGO coordination and developing a culture of "working together" during normalcy so that it works during emergencies.

- xv) Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat for ensuring safer living conditions and environment.
- xvi) Using IEC for community awareness and preparedness in DM.
- xvii) Promoting a productive and proactive partnership with the media for disaster management.
- xviii) Documenting best practices and making a system of providing the available knowledge to the target group.

CONCLUSION

Disaster Mitigation demands much more than just focusing on aspects which are directly related to the crisis management during or after disaster. With our poor socioeconomic status a holistic disaster management plan must include the recognition of 'rights-based' approach, which focuses on protection issues, community mobilization empowerment. Key objective is not only to provide material assistance but also to help affected people to access services and entitlements. The media has a vital role in education public about disasters, disseminating information about affected areas and facilitating discussions about reducing vulnerabilities to future disasters. Following are the few immediate and long-term measures that need to be soon accomplished:

IMMEDIATE MEASURE

1. Restructuring the Department of Relief into Department of Disaster mitigation
2. Implementation of Disaster Management Act
3. Panchayat/Ward level disaster management teams and plans should be prepared
4. Clear defining of roles and delegation of responsibilities
5. Conducting mock drills
6. Training of rural masons, engineers & architects
7. Retrofitting of lifeline buildings
8. Promotion of General Insurance for housing and household articles (awareness thereof)
9. Establishment of control rooms & equipment of the same
10. State/District Emergency Communication Network
11. Early warning system
12. Creation of Disaster Mitigation Corpus

LONG TERM MEASURES

1. Incorporation of disaster education in the school syllabus
2. Incorporation of BIS codes in the building bye-laws
3. Implementation of TCP Act in rural areas through PRIs
4. Land use regulation and zoning
5. Incorporation of Disaster management in training curriculum of premier services of State.
6. Strengthening of fire services at the Sub-Division level and provision of life tenders.
7. Enactment of State Disaster Management Act.
8. Disaster Management code has to be in place.
9. Specialist response teams-GIS based State Disaster Resource Network (SDRN)
10. Incorporation of Disaster Mitigation into all other development processes
11. Mock drills should be performed at local community levels to monitor and improve the level of preparedness in case an earthquake happens, especially in areas more prone to seismic activity.

REFERENCES

AMBRASEYS, N., LENSEN, G. and MOINFAR, A., 1975, The Pattan Earthquake of 28 December 1974 (Serial No. FMR/SC/GEO/75/134), pp. 1-44 (Paris: UNESCO).

- AMBRASEYS, N. and BILHAM, R., 2000, A note on the Kangra Ms $\frac{1}{4}$ 7.8 Earthquake of 4 April 1905. *Current Science*, 79, pp. 101–106.
- AMBRASEYS, N. and JACKSON, D., 2003, A note on early earthquakes in northern India and southern Tibet. *Current Science*, 84, pp. 571–582.
- ARYA, A.S., 1992, Possible effects of a major earthquake in Kangra region of Himachal Pradesh. *Current Science*, 62, pp. 251–256.
- BAPAT, A., KULKARNI, R.C. and GUHA, S.K., 1983, *Catalogue of Earthquakes in India and Neighbourhood from Historical Period to 1979*, p. 211 (Roorkee: Indian Society of Earthquake Technology).
- BERBERIAN, M., 1997, Seismic sources of the Trans-Caucasian historical earthquakes. In *Historical and Prehistorical Earthquakes in the Caucasus*, ILP Publ. 333, NATO ASI Ser. 28, D. Giardini and S. Balassanian (Eds), pp. 233–311 (Dordrecht: Kluwer Academic).
- BHATTACHARYA, S.N., 1998, A perspective of historical earthquakes in India and its neighborhood upto 1900. *Mausam*, 49, pp. 375–382.
- BILHAM, R., 2006, Great Himalayan earthquakes and the Tibetan plateau. *Nature*, 444, pp.165–170.
- BILHAM, R., 2009, The seismic future of cities. *Bulletin of Earthquake Engineering*, 7, pp. 839–887.
- BUREAU OF INDIAN STANDARDS, 2002, *Indian Standards: Criteria for Earthquake Resistant Design of Structures, Part I, Fifth Revision*.
- CENSUS OF INDIA, 2001, *Primary Census Abstract of Total Population-2001, Series-3, Table-A5, Primary Census Abstract, Himachal Pradesh, Directorate of Census Operations, Himachal Pradesh (Delhi: Govt. of India, 2005*
- MIDDLEMISS, C.S., 1910, The Kangra Earthquake of 4th April 1905. *Memoirs of the Geological Survey of India*, 38, pp 1–409.
- MILNE, J., 1911, *A Catalogue of Destructive Earthquakes, A.D. 7 to A.D. 1899*, pp. 649–740 (London: British Association for the Advancement of Science).
- NARULA, P.L. and SHOME, S.K., 1992, Macro seismic studies of recent earthquakes in northwest Himalaya—a review. *Current Science*, 62, pp. 24–33.
- OLDHAM, R.D., 1899, Report on the Great Earthquake of 12 June 1897. *Memoirs of the Geological Survey of India*, 29, p. 379.
- OLDHAM, R.D., 1928, The Cutch (Kacch) Earthquake of 16 June 1819 with a revision of the great earthquake of 12 June 1897. *Memoirs of the Geological Survey of India*, 46, pp.71–147.
- OLDHAM, T.A., 1883, A catalogue of Indian earthquakes from the earliest times to the end of AD 1869. *Memoirs of the Geological Survey of India*, 19, pp. 163–215.
- POIRIER, J.P. and TAHER, M.A., 1980, Historical seismicity in the near and Middle East, North Africa, and Spain from Arabic documents (7th–18th century). *Bulletin of the Seismological Society of America*, 70, pp. 2185–2201.
- PUNJAB GOVT. PRESS, Report, 1926, *Punjab District Gazetteers, Vol. VII, Part A, Kangra District 1924–25*, p. 4 (Lahore: Government Printing, Punjab).
- QUITTMAYER, R.C. and JACOB, K.H., 1979, Historical and modern seismicity of Pakistan, Afghanistan, northwestern India and Southeastern Iran. *Bulletin of the Seismological Society of America*, 69, pp. 773–823.
- RAO, B.R. and RAO, P.S., 1984, Historical seismicity of Peninsular India. *Bulletin of the Seismological Society of America*, 74, pp. 2519–2533.
- REPETTI, W.C., 1946, *Catalogue of Philippine Earthquakes, 1589–1899*. *Bulletin of the Seismological Society of America*, 36, pp. 133–319.
- ROBSON, G.R., 1964, An earthquake catalog for the Eastern Caribbean, 1530–1960. *Bulletin of the Seismological Society of America*, 54, pp. 785–832.
- ROTHER, J.P., 1969, *The Seismicity of the Earth 1953–1965* (Paris: United Nations Educational, Scientific and Cultural Organization).

- SARAF, A.K., SARMA, B. and CHANDRAMANI, 2002, Spatial Statistical Technique in Relating Earthquake Epicentres with Structural Features. *GIS Development*, 6, pp. 22–24.
- SHASTRI, A.M., 1969, *India as seen in the Brihat Samhita of Varahamihira* (Delhi: Motilal Banarasidass).
- SIBSON, R., 1981, A brief description of natural neighbor interpolation. In *Interpolating Multivariate Data*, pp. 21–36 (New York: Wiley).
- SMITH, W.E.T., 1966, Earthquakes of Eastern Canada and adjacent areas, 1928–1959. *Publications of the Dominion Observatory*, 32, pp. 87–121.
- SRIVASTAVA, H.N. and CHAUDHURY, H.M., 1979, Precusory seismic observations in Himachal Pradesh and Shillong Plateau. *Mausam*, 30, pp. 289–296.
- SRIVASTAVA, H.N. and RAMACHANDRAN, K., 1985, New catalogue of earthquakes of Peninsular India, 1839–1900. *Mausam*, 36, pp. 351–358.
- SRIVASTAVA, H.N., DUBE, R.K. and RAJ, H., 1987, Space and time variation in the seismicity patterns predicting two earthquakes in the Himachal Pradesh, India. *Tectonophysics*, 113, pp. 69–77.
- Özerdem, A., & Jacoby, T. (2006). *Disaster management and civil society: Earthquake relief in Japan, Turkey and India* (Vol. 1). London: IB Tauris.
- Deshmukh¹, R., Rodrigues¹, L. L., & Krishnamurthy, G. R. (2008). Earthquake risk and knowledge management. *Journal of Knowledge Management Practice*, 9(3).
- Rajendran, C. P., & Rajendran, K. (2001). Characteristics of deformation and past seismicity associated with the 1819 Kutch earthquake, northwestern India. *Bulletin of the Seismological Society of America*, 91(3), 407-426.
- Barenstein, J. E. D. (2015). Continuity and change in housing and settlement patterns in post-earthquake Gujarat, India. *International Journal of Disaster Resilience in the Built Environment*.
- Singh, D., Pandey, D. N., & Mina, U. (2019). Earthquake-A natural disaster, prediction, mitigation, laws and government policies, impact on biogeochemistry of earth crust, role of remote sensing and GIS in management in India-an overview. *J Geosci*, 7(2), 88-96.
- Jain, S. K. (2016). Earthquake safety in India: achievements, challenges and opportunities. *Bulletin of Earthquake Engineering*, 14(5), 1337-1436. Earthquake scenario in West Bengal with emphasis on seismic hazard microzonation of the city of Kolkata, India. *Natural Hazards and Earth System Sciences*, 14(9), 2549-2575.
- NDMA, 2016, National Disaster Management Plan, 2016, National Disaster Management Authority, Ministry of Home Affairs, Government of India.

FACTORS FOR SUSTAINABLE WEBSITE DEVELOPMENT FOR PERFORMANCE IMPROVEMENT AND A BETTER USER EXPERIENCE**Mr. Vilas Mahajan¹ and Mrs. Sampurna Sarode²**

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ABSTRACT

Website design is a very complex task and is identified as a key factor and acknowledged as a critical aspect in the success of an organisation and the adoption of websites. The purpose of this paper is to identify the factors besides the benchmarking for website design that improves the performance of a website in order to provide a better user experience that will also be sustainable. There are several ways to increase the website's performance. A website implemented with good strategies may improve the website's speed and look, which is both sustainable and beneficial to the website's users and owner. A website design that emphasises simplicity and ease of access gives clear, current, and correct information in all of its contents, as well as an appealing appearance. The limitations and implications of the research-The article proposes a set of strategies for improving the design of websites in terms of aesthetic appeal, performance in terms of speed, site navigation, information, content, etc.[1]

Keywords: Website speed, sustainable websites, website development, web design.

INTRODUCTION

The world is shifting online, with online banking, e-statements, and applications replacing physical papers. Concerns about finite resources have pushed many to go digital: if we use less paper, we'll need to cut down fewer trees. However, the impact of our digital transformation is enormous. Tom Greenwood, co-founder of Wholegrain Digital, a web design studio in the United Kingdom, claims that if the internet were a country, it would be the world's sixth most polluting country. [2]

"Sustainable web design is an approach to web service design that prioritises the health of our home planet, with an emphasis on lowering carbon emissions and energy consumption at its foundation," Greenwood explained. "Business, design, and technology may all help, but only if environmental preservation is prioritised in crucial choices rather than being an afterthought." [3]

WHAT IS SUSTAINABLE WEB DESIGN?

Sustainable web design is an approach to designing digital products and services that puts people and planet first. It respects the principles of the Sustainable Web Manifesto, which calls for an internet that is:

Clean: Services provided and used will be powered by renewable energy.

Efficient: Products and services will use the least amount of energy and material resources possible.

Open: Products and services will be accessible, allow users to control their data, and enable the open exchange of information.

Honest: Products and services will not mislead or exploit users.

Regenerative: Products and services will support an economy that nourishes people and the planet.

Resilient: Products and services will function in times and places where users need them most.

PRACTICES FOR SUSTAINABLE WEB DESIGN

Sustainable web design is a hybrid blend of environmental conservation principles and performance-based web and usability standards. These practices can be applied to the life cycle of any website, app, or online media to maximize efficiency, increase usability, and improve performance. Sustainable web design can also reduce the environmental impact of your digital products and services through green hosting, carbon measurement and reduction, minimizing electricity use, and so on.

The practice of sustainable web design is commonly broken down into these categories:

1. **Web Performance Optimization:** How quickly do assets download to a user's device?
2. **Ease of content search:** How quickly can users find the content they need? And how useful is that content once it's found?
3. **Usability:** How quickly can *all* users accomplish tasks across devices and platforms at various bandwidth speeds?

4. **Green Web Hosting:** Are the servers hosting your digital products and services powered by renewable energy?
5. **Client and Project Ethos:** What are your digital projects actually promoting or selling? How do you execute them transparently and effectively?
6. **Business Practices:** How does your organization embody these same principles in its operations?

FACTORS TO BE CONSIDERED WHILE DEVELOPING MODEL WEBSITE:

1. WEB PERFORMANCE OPTIMIZATION

Web performance optimization is all about loading as few page assets as quickly as possible without sacrificing user experience. By optimizing the website search engine, the search engine's convenience, and the website's rank, you can increase website visits and meet the goal of website marketing, which is to provide opportunities for businesses to make more money. [4]. An average user now expects web pages to load in less than 3 seconds. If you fail to match this expectation, you will lose a significant amount of internet visitors and, as a result, money.

2. USE A CLOUD BASED CONTENT DELIVERY NETWORK (CDN)

Because of the widespread availability and use of cloud computing platforms, cloud-based CDNs have grown in importance. Cloud and CDN integration provides mutual benefits, allowing material to be disseminated efficiently and effectively over the Internet utilising a pay-as-you-go strategy, encouraging the content-as-a-service model. [5]

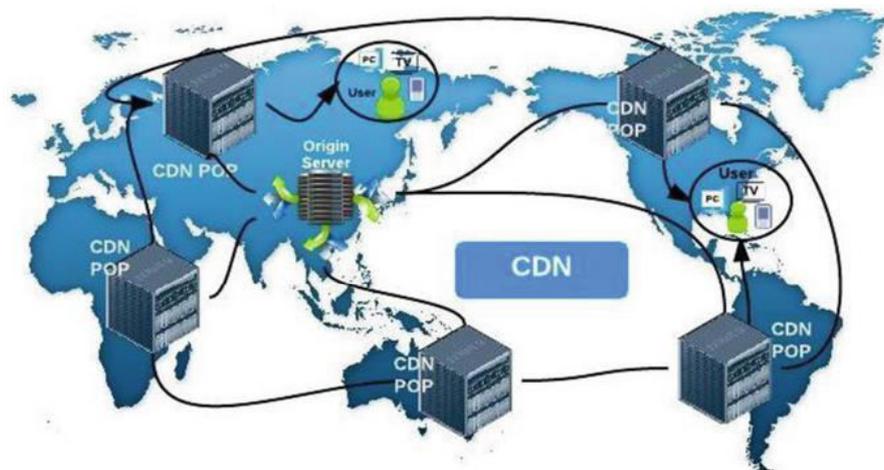


Fig. 1. The architecture of a Content Delivery network

3. OPTIMIZE THE SIZE OF IMAGES ON YOUR WEBSITE

To make images load faster, use progressive JPEGs and next-generation file formats. To avoid unnecessary picture reloading, use caching on both the client and server sides. Compression can be used to reduce file size without impacting quality. Before presenting photographs to users, resize them to the proper size. [6]

4. REDUCE THE NUMBER OF PLUGINS

The rapid expansion of the Internet have made it possible for web applications to handle the storage, exchange, and retrieval of a sizable amount of information, some of which may be sensitive. This rapid expansion also oered opportunities for developers to embrace software product line engineering methodologies such as plugin-based development[[7][8]

A plugin is software that may be loaded on your website to enhance or extend its functionality. Plugins can be rapidly installed and configured on your website to provide functionality that would otherwise take developers a long time to construct from scratch. They're exactly what they sound like: something you can "plug" into a website to expand its functionality without having to develop a load of custom code. Recent advances in web technologies and the

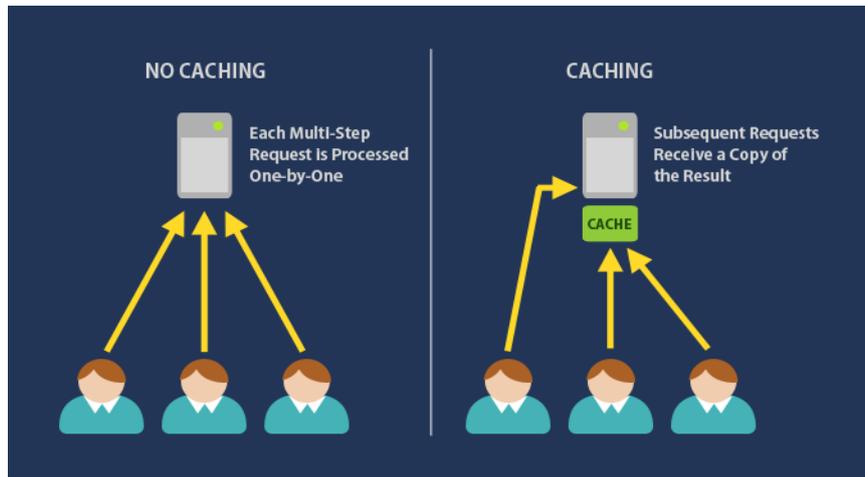
5. MINIMIZE THE NUMBER OF JAVASCRIPT AND CSS FILES

MINIFY JAVASCRIPT: Removing comments and white space from large JavaScript files can make them substantially smaller, without changing their functionality.

REMOVE UNUSED CSS: CSS files contain rules that apply style attributes to elements in a web page. If a rule does not apply to any element in a page, removing it will result in fewer bytes being sent to the client, with no change in the appearance of the web page. However, because external style sheets may be included by more than one page, you must be careful to only remove rules that no page uses. [9]

6. USE WEBSITE CACHING

The technique of keeping copies of files in a cache, or temporary storage area, so that they can be retrieved more rapidly, is known as caching. A cache is a temporary storage facility for copies of files or data, however the phrase is most commonly associated with Internet technologies.



Caching minimizes bandwidth consumption, resulting in less network traffic and less network congestion.

For two reasons, caching reduces access latency:

- a) Frequently visited documents are retrieved from a local proxy cache rather than from faraway data servers, reducing transmission delays.
- b) Because caching reduces network traffic, documents that are not cached can be retrieved much faster than they would be without it, thanks to decreased congestion along the path and lower server workload.

By distributing data among proxy caches across the WAN, caching minimises the workload of the distant web server.

The client can acquire a cached copy if the remote server is unavailable due to a crash or network partitioning. [10]

7. IMPLEMENT GZIP COMPRESSION.

Gzip, the most popular compression method, is used by web servers and browsers to seamlessly compress and decompress content as it's transmitted over the Internet. Used mostly on code and text files, gzip can reduce the size of JavaScript, CSS, and HTML files by up to 90%. GZIP is widely implemented in many applications to carry out lossless compression. For example, GZIP is used by different webservers like Apache, Microsoft Web-server, and IIS. But it does not have a remarkable performance to compress real-time data. [11]

SUSTAINABLE WEB DESIGN INTO YOUR DIGITAL PRODUCTS

A website or product redesign offers a great opportunity to comprehensively incorporate sustainability principles into your digital ecosystem. However, that might be a ways off for your organization. Here are a few steps you can take right now:

1. **Set a baseline:** Use Wholegrain Digital's Website Carbon to understand how your current site performs right now.
2. **Devise a plan:** Our own tool Ecograder provides scoring and handy reports to help you figure out where to start making improvements. More on Ecograder's scoring methods here.
3. **Incremental Improvements:** Create a prioritized list of things to improve. Address them as time and resources allow.
4. **Benchmarking:** Measure your performance over time with an eye on continuous improvement.

SOME OF THE METRICS PAGE EXPERIENCE MEASURES, ACCORDING TO GOOGLE'S DEVELOPER DOCUMENT: [12]

Interactivity: Visitors should be able to engage in active interaction with the website.

Loading performance: Faster server response time will result in better performance.

Visual stability: Content should not scatter around the page as it is loading.

Mobile-friendliness: Users should be able to visit the page from their mobile devices or tablet and have the same experience as they would on a desktop.

Security: The page should run on HTTPS to provide sense of security while browsing the website.

Browsing safety: Safe browsing looks for viruses, deceptive pages, harmful downloads, and unusual downloads, among other things.

SUMMARY

This paper provides a survey of the different approaches available to improve the performance of a website in order to improve the appearance and feel of the website as well as increase business. This survey was based on a review of many websites and research articles. We have also found that there are multiple design elements for user engagement such as Navigation, Graphical Representation, Organization of the contents and site, Content Utility, Purpose, Simplicity, Readability.

REFERENCES:

1. Garrett R, Chiu J, Zhang L, Young SD. A Literature Review: Website Design and User Engagement. Online J Commun Media Technol. 2016 Jul;6(3):1-14. PMID: 27499833; PMCID: PMC4974011.
2. <https://www.socialentrepreneurship.fm/226-sustainable-internet/>
3. <https://www.forbes.com/sites/christophermarquis/2021/01/15/paper-free-isnt-enough-the-keys-to-sustainable-web-design-for-every-business/?sh=5fdebe0c2b12>
4. Yang, Weiming. (2012). Research of Website Optimization Strategy Based on Search Engine. International Journal of Advancements in Computing Technology. 4. 333-340. 10.4156/ijact.vol4.issue18.39.
5. Wang, Meisong & Jayaraman, Prem Prakash & Ranjan, R. & Mitra, Karan & Zhang, Miranda & Li, Zheng (Eddie) & Khan, Samee & Pathan, Mukkaddim & Georgeakopoulos, Dimitrios. (2015). An Overview of Cloud-Based Content Delivery Networks: Research Dimensions and State-of-the-Art. 10.1007/978-3-662-46703-9_6.
6. MM Syeed, Alexander Lohman, Tommi Mikkonen, and Imed Hammouda. 2015. Pluggable systems as architectural pattern: an ecosystemability perspective. In Proceedings of the 2015 European Conference on Software Architecture Workshops. ACM, 42
7. Jan Bosch. 2009. from software product lines to software ecosystems. In Proceedings of the 13th international software product line conference. Carnegie Mellon University, 111-119
8. Manhas, Dr. (2013). A Study of Factors Affecting Websites Page Loading Speed for Efficient Web Performance. International Journal of Computer Sciences and Engineering.
9. <https://www.3pillarglobal.com/insights/blog-posts/how-web-caching-improves-internet-performance/>
10. Shah, Ahmad & Sethi, Muhammad. (2019). The Improvised GZIP, A Technique for Real Time Lossless Data Compression. EAI Endorsed Transactions on Context-aware Systems and Applications. 6. 160599. 10.4108/eai.1-10-2019.160599.
11. <https://www.usertesting.com/blog/good-user-experience-according-to-google>

SECURING INDIA'S COASTAL DOMAIN - VITAL FOR ENSURING ITS SUSTAINABLE BLUE ECONOMY**Dr. Kavita Sharma**

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ABSTRACT

'Sustainable development' is a popular slogan widespread across the globe in the contemporary time. Every nation is in race to harness available ecological resources for betterment of their citizen. This in turn has resulted in over-exploitation of natural resources and over exploitation of such resources is of great concern. It has brought in the issue of sustainability and sustainable development. Blue economy, one of the most important contributors in the overall economic progress of a nation encompasses sectors related to oceans, seas and coasts. It has special connotations for a maritime nation like India as it provides oceans of opportunities for its economic development. Ensuring sustainable developments has emerged as one of the most challenging tasks confronting nations today. Sustainable development has to be done by striking balance between the aspirations of ever increasing population and limited resources available on the planet. Blue economy so crucial for India's economic development has to be safeguarded against perils of overexploitation and marine pollution. Thus, this paper is aimed at highlighting the importance of enhancing security of India's coastal domain for ensuring sustainable blue economy, the key constituents of sustainable development process.

Keywords: Sustainable Development, Blue Economy, Enhanced Security, Coastal Domain.

INTRODUCTION

Oceans are vast reservoir of resources supporting human life and same has been evident from the seashore or coastline being the most favourite site for human settlement. In the contemporary times, Blue Economy has emerged as the most discussed topic in the world economic affairs. Blue economy is one of the most vital constituent of the economies of the maritime nations. It encompasses significantly large sectors related to oceans, seas and coasts. Such sectors are largely based in the coastal domain which include shipping, fishing, energy production, etc. in the marine environment and ports, shipyards, coastal industries, power generation, tourism, etc. over land. There is huge potential in Blue economy in terms of income generation, employment opportunity, exports, food supply, energy supply, shipping, and tourism. Growing human population and depleting land based resources have led to increased economic exploitation of oceans. On the pretext of economic development, human greed has been on the forefront causing over exploitation of ocean resources and even disregard for the environmental protection.

India is a maritime nation surrounded by Arabian Sea on the West, Bay of Bengal on the East and Indian Ocean in the South. It has vast coastline of over 7500 km which provides vast coastal domain so vital for its economic development. India is also the second most populous country in the world and therefore has pressure to support such a large human population. Blue economy for India is considered very crucial for its economic growth. For India, Blue Economy means a vast ocean of economic opportunities for well-being of its citizen. India's dependence on ocean is enormous for its food security, energy security, human security, and economic security. In the contemporary times the whole world is witnessing rising non-traditional threats which poses major challenges to Blue economy. It is therefore important that India's coastal domain awareness has been in the forefront to harness potential of its Blue economy..

INDIA'S COASTAL DOMAIN

India has vast coastline and its coastal domain includes coastal surroundings on either side of the coastline i.e. coastal sea and seashore. India's coastal domain is basically an interface between the oceans and the terrestrial ecosystems supporting the human population. Oceans have been an important source of food for the human life and facilitated trade and commerce in the past and continues to do the same even today. Coastal states have only a limited national rights and jurisdictions over a very narrow sea belt surrounding nation's coastline. Rest of the vast sea have been declared free for all and belonged to no one. However, from the second half of the 20th century, there has been a growing concern over numerous issues like over exploitation of ocean resources and degradation of ocean based ecosystem. Marine pollution, dumping of wastes into the sea and mindless use of sea has been causing enormous harm to ocean ecosystem.

Such growing concerns paved the way for an effective international regime for governance of ocean resources. The United Nations adopted United Nations Laws of the Sea Conventions (UNCLOS) in 1982 and it came into force in 1984.¹ It provides legal jurisdiction to coastal states over huge sea space i.e. Exclusive Economic Zone (EEZ). It resolved several important issues concerning usage and sovereignty of oceans and seas.

India's coastline is spread across nine coastal states and four Union Territories (UTs). India's coastal domain also includes two major groups of islands – Lakshadweep group in the Arabian Sea and the Andaman and Nicobar group in the Bay of Bengal. UNCLOS provisions have provided India with a vast EEZ spread over almost 2013410 million sq km which is almost equal to 2/3rd of the total land area. Such a vast area is available for exploring and exploiting, conserving and managing ocean resources. Such a vast EEZ and its rich resources have direct bearing on its economy.

India's vast coastal domain also has dense human settlement as it offers an enormous potential for its food security and economic security. Indian coastal areas are biologically most productive area supporting huge wealth of marine resources. As per estimates around 250 million of India's population lives within the 50 km of the coastline.ⁱⁱ As per 2014 census, coastal districts of India have a population of 171 million which were estimated to be 14.2% of the total population.ⁱⁱⁱ Coastal population's growth and urbanization rates are outperforming demographic development of the hinterland. There are 77 towns and cities located in the coastal region which even includes mega cities like Mumbai, Kolkata and Chennai.^{iv}

INDIA'S BLUE ECONOMY

In the contemporary times, Blue economy is widely used term globally. Blue economy primarily refers to economy based on host of ocean resources that can be harnessed for the economic development of a country. In fact, Blue economy is basically a subset of the national economy. It comprises of the entire ocean based resources and man-made economic infrastructure in marine, maritime and onshore coastal zones within the national jurisdiction.^v For India, Blue economy means a vast ocean of economic opportunities provided by the living and non-living resources present in its maritime environment. It encompasses numerous industries and sectors related to oceans seas and coasts like shipping, fisheries, energy generation, etc. based in the marine environment and ports, ship building, ship breaking, oil refining, coastal tourism, salt production, etc. ashore in the terrestrial coastal environment.^{vi}

India's long coastline is studded with 12 major and 200 non-major ports and these ports has been the driving force behind the Indian shipping.^{vii} Shipping industry has been one of the key sectors of the Indian economy which has been contributing immensely in country's foreign trade. Ports and shipping has also been large source of employment. Approximately 95 % of foreign trade by volume and 68% by value have been through shipping. This sector is one of the major sectors for generating large employment opportunities. India has one of the largest merchant shipping fleets among the developing countries and it includes very high value critical infrastructure like Crude carriers, gas carriers, container carriers and chemical carriers. Ensuring security such assets is of paramount importance from economic as well as environmental angle.

India's coastal domain is a vast reservoir of living and non-living resources. As far as utilisation of India's ocean non-living resources is concerned, it is being focused at three distinct fronts – oil and gas exploration, mineral extraction within national waters and mineral extraction in the International seabed beyond Indian EEZ. Oil and gas sector has been one of the six core industries in India and is of strategic importance. India has been undertaking oil and gas exploration in the offshore since 1970s and this has been the most commercialized and regulated form of mineral extraction. This sector is being developed in public as well as private sector and accounts for the 40% of the total primary energy consumption. The country is heavily dependent on imports of crude oil and natural gas requirements and in order to bridge the gap more and more exploration and production activities has to take place. Oil and gas exploration and production activities are being progressed in number of areas on the either coast and are collectively known as Offshore Development Areas (ODAs). These ODAs have numerous infrastructures facilitating oil extraction. However, these infrastructures are also vulnerable and any damage to such infrastructure can also result in disaster for the fragile eco-system.

India's vast EEZ has an untapped treasure of mineral deposits. The Ministry of Mines, Government of India has informed through Press Information Bureau that Geological Survey of India has done preliminary assessment of Territorial waters and EEZ for mineral potential and has shown promising results. There are heavy mineral placer deposits off the coasts of Andhra Pradesh, Odisha, Maharashtra, Kerala and Tamil Nadu; silica sand off Kerala offshore; lime mud off Gujarat and Andhra Pradesh; phosphorite off the coast of Gujarat, Maharashtra, Tamil Nadu and Puducherry.^{viii}

Salt is one of the basic necessities of life. Sea water is an inexhaustible source of salt. Peninsula India and its tropical location favour salt production from sea water by solar evaporation. The growth and achievement of the country in salt production has been spectacular. India has been importer of salt at the time of independence and today India is not only self-reliant but also exporter of salt. It is a labour intensive industry and provides employment to more than one lakh labourers on a daily basis. Salt is not only required for human consumption

but also by large number of industries. However, there are numerous environmental impacts associated with salt industry management. It can impact vegetation, soil, surface water, and aquatic life. A new study also indicated that sea salt worsens air pollution in coastal areas.^{ix}

Marine fishing is one of the most significant sectors of Blue economy. It significantly contributes to the national economy. This sector is of immense importance for employment generation and food security. The marine fish accounts for around 35% of the total fish production. According to Economic Survey released in Jul 2019, fisheries has been the fastest growing sector providing nutrition and food security to a large population besides providing income and employment to more than 14.5 million people at primary level and many more along the value chain.^x In the marine fishing, India has two types of policy framework – coastal fishing and deep sea fishing. Coastal fishing is production and export oriented and under the control of State governments. Deep sea fishing policy originated since the declaration of EEZ and is under the Central government. The focus on deep sea fishing has been to increase productivity. However, this sector has an issue of Illegal, Unreported and Unregulated (IUU) fishing and has been of severe concern.

India's coastal domain also provides abundant opportunities for tourism and recreation. Beach walking, swimming, sun bathing, snorkeling, SCUBA diving, boating, wind surfing, whale and dolphin watching are some of the common activities attracting tourists in the coastal domain. India being tropical country provides warm water throughout the year. Warm water beaches always attract tourists. This sector has been one of the fastest growing sectors globally as well as in India. It contributes immensely in economies of most of the coastal states and especially in the case of Goa, Kerala, Karnataka and Tamil Nadu. It provides ample employment opportunities in hotels, restaurants, beach sports and boating activities.

Thus, Blue economy for India provides ample opportunities to meet its national socio-economic developmental goals. It has immense scope to generate livelihood, achieve energy security, build ecological resilience, and improve health and standards of living of its people especially coastal population.

SUSTAINABLE DEVELOPMENT

Every nation is in race to harness available ecological resources for betterment of their citizen. This in turn has resulted in over-exploitation of natural resources and brought in the issue of sustainability and sustainable development. Ensuring sustainable developments is one of the most challenging tasks confronting nations today. UN Conference on Human Environment held in Stockholm in 1972 provided global recognition for the Sustainable Development.^{xi} It was agreed to treat development and the environment as separate issues and both need to be managed in a mutually beneficiary manner. Subsequently, the Brundtland Commission, an independent Organisation created by the Prime Minister of Norway in 1983 on the request of the UN Secretary General to study environmental and development problems. The Commission in its 1987 report 'Our Common Future' discussed the sustainable development as the solution to the problems of environmental degradation. The primary concern of this report was unchecked human activity and its severe and negative impacts on the planet. It propagated sustainable development as development that meets the requirement of the present without compromising the ability of meeting the requirements of the future generations.^{xii}

SECURITY OF COASTAL DOMAIN FOR SUSTAINABLE GROWTH

Oceans have been and continue to be a major source of food, energy and livelihood. Oceans have been a free domain and witnessing unchecked exploitation of its resources. Numerous activities like IUU fishing, unsustainable and destructive fishing activities, marine pollution – both ship based sources and land based sources, oil and gas exploration and extraction, mineral extraction, creation of offshore installations, unchecked human activities etc. have been causing immense damage to marine environment. India's coastal domain is hub of economic activities. Fishing, shipping, energy, tourism, ship building and numerous other industrial activities in the coastal domain are known to be causing marine pollution. Depleting land based resources and ever increasing population growth have resulted in over exploitation of sea based resources. There is need to check over exploitation of ocean resources. One of the major causes of unchecked exploitation of ocean resources has been lack of policing or sea governance. As part of sea governance numerous laws/ regulations are being made their compliance have been a grey area. Post 26/11Mumbai terror attacks securities of coastal areas are being enhanced to prevent such events in the future. Enhanced coastal security measures have been witnessing increased presence of law enforcement agencies in the coastal domain. However, as of now their primary focus has been keeping watch on security related activities. Tasking coastal security forces to ensure compliance of various sea governance policies/ regulations would ensure reduction in marine pollution, regulation of fishing activities, non-use of prohibited practices in exploitation ocean resources, etc.

CONCLUSION

India's coastal domain is of special significance for its Blue economy. Blue economy holds the future of India's economic growth. What is needed is to ensure sustainable Blue economy. However, India being one of the fastest developing economies of the world and its location in one of the most difficult region of the world has serious threat to its Blue economy from IUU fishing, marine pollution, activities of the non-state actors. Towards this, importance of enhanced security of the coastal domain is of utmost importance. Sea will continue to be free domain but the coastal domain has to be sea governance compliant to harness full potential of its blue economy. Enhanced security of the coastal domain would go long way in checking over exploitation of ocean resources and in prevention of marine pollution. Under such circumstances India has to enhance security to ensure sustainable use of ocean resources and at the same time also protect its marine environment from its degradation.

END NOTES

ⁱ Wikipedia, the free encyclopedia, "United Nations Conventions on the Law of the Sea" available on https://en.wikipedia.org/wiki/United_Nations_Convention_on_the_Laws_of_the_Sea, accessed on 15 May 2022

ⁱⁱ R. Dhiman, J Tirodkar, and A B Inamdar, nResearch Paper, "Integrating Sustainable Coastal Development Initiatives along Maharashtra Coast, Using ICM Guidelines accessed on 15 May 2022 from http://wgbis.ces.iisc.ernet.in/biodiversity/sahyadri_enevents/newsletter/I

ⁱⁱⁱ Centre for Coastal Zone Management and Coastal Shelter Belt, sponsored by Ministry of Environment, Forest and Climate Change, Government of India (2017) , accessed on 17 May 2022, available on <http://iomenvi.nic.in/index2.aspx?slid+758&sublinkid+119&langid=1&mid=1>

^{iv} R. Dhiman, J Tirodkar, and A B Inamdar, nResearch Paper, "Integrating Sustainable Coastal Development Initiatives along Maharashtra Coast, Using ICM Guidelines accessed on 15 May 2022 from http://wgbis.ces.iisc.ernet.in/biodiversity/sahyadri_enevents/newsletter/

^v Ministry of Fisheries, Animal Husbandry & Dairying, Making India a Blue Economy – Press Information Bureau, accessed on 17 May 22, available on <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1809728>

^{vi} FICCI(2019), "Blue Economy-Global best Practices Takeaways for India and Partner Nations" accessed on 17 May 2022, WRL:<https://ficci.in/spdocument/23166/Blue-Economy-Business.pdf>

^{vii} Ports and Shipping, accessed on 14 Jun 2022, available on [https://www.makeinindia.com/sector/ports#:~:text=India%20comprises%20a%20significant%20size,vast%20network%20of%20navigable%20waterways.&text=The%20total%20cargo%20handling%20capacity,tonnes%20per%20annum%20\(MTPA\).](https://www.makeinindia.com/sector/ports#:~:text=India%20comprises%20a%20significant%20size,vast%20network%20of%20navigable%20waterways.&text=The%20total%20cargo%20handling%20capacity,tonnes%20per%20annum%20(MTPA).)

^{viii} Press Information Bureau, Government of India, Ministry of Mines, accessed on 15 Jun 2022, available on https://pib.gov.in/newsite/PrintRelease.aspx_relid+124725

^{ix} Wikipedia, "Salt Industry in India" available at http://saltcomindia.gov.in/industry_india.html?tp=salt, accessed on 16 Jun 22.

^x Marine Fisheries Census 2010, Central Marine Fisheries Research Institute, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, Government of India, available at http://eprints.cmfri.org.in/8998/1/India_report_full.pgf, accessed on 15 Jun 2022.

^{xi} Wikipedia, "Sustainable Development" accessed on 14 Jun 2022, available at https://en.wikipedia.org/wiki/Sustainable_development#:~:text=Sustainable%20development%20can%20be%20defined,to%20meet%20their%20own%20needs.

^{xii} Ibid.

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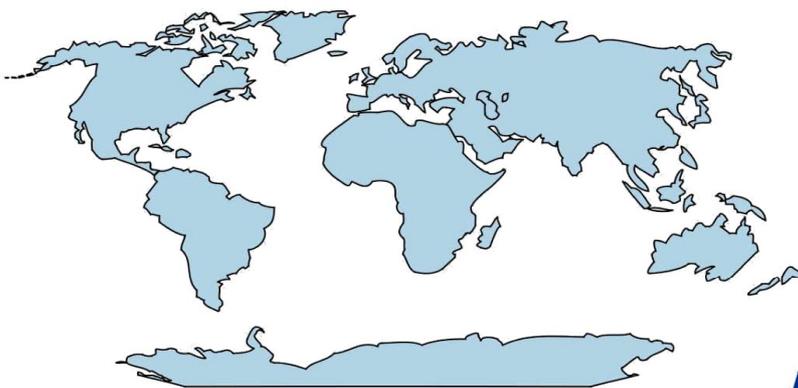
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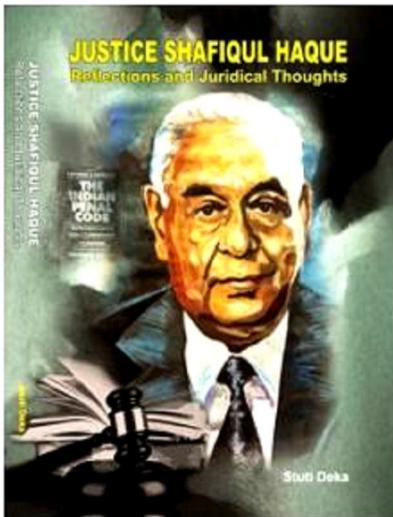


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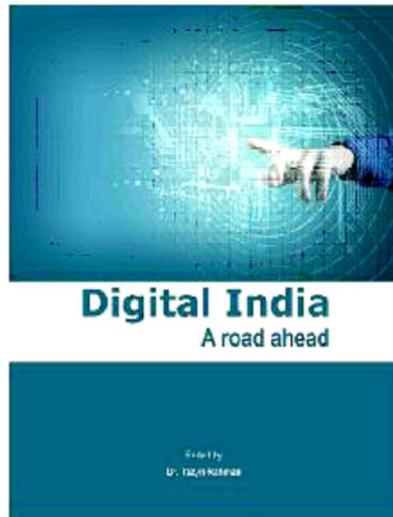
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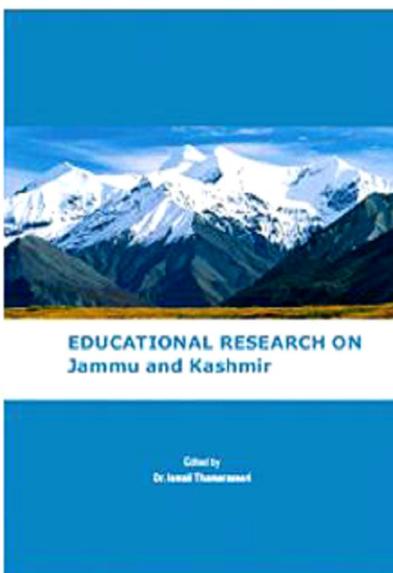
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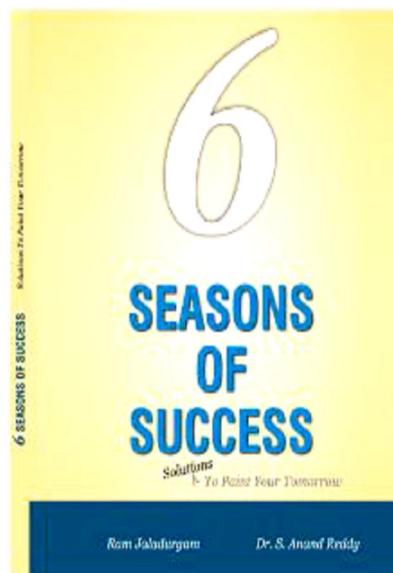
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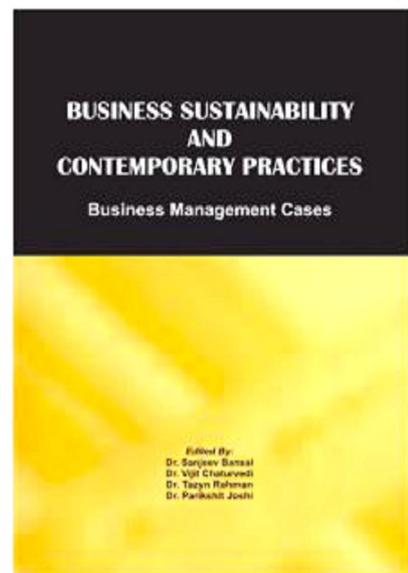
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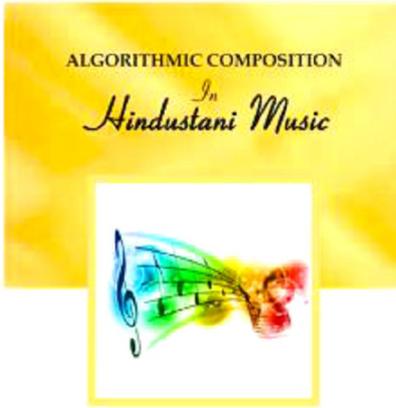
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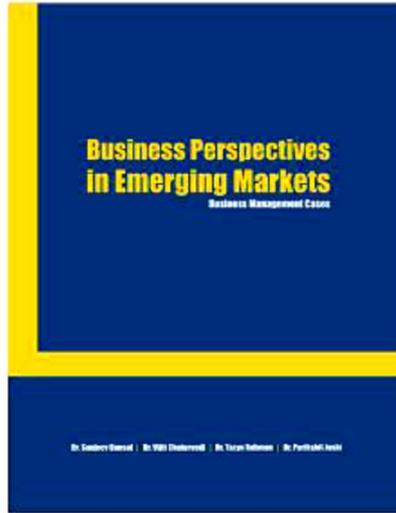
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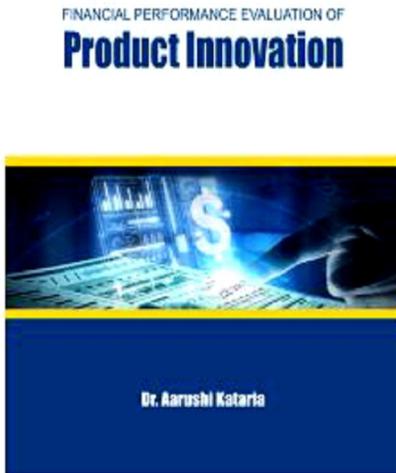


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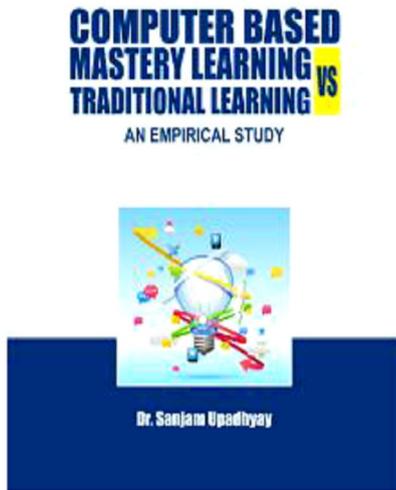
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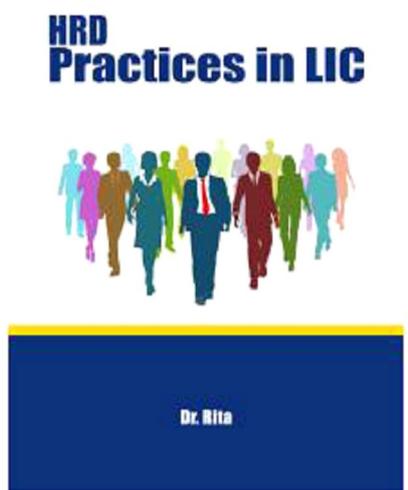
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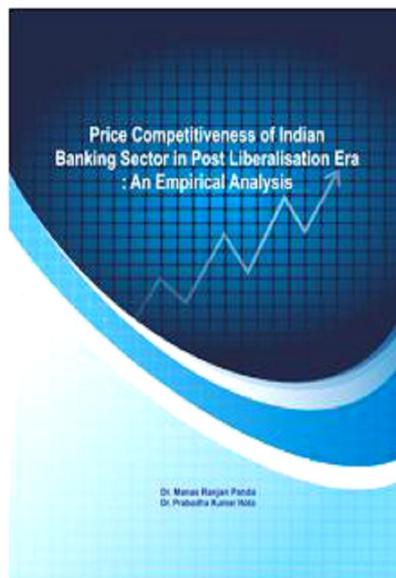
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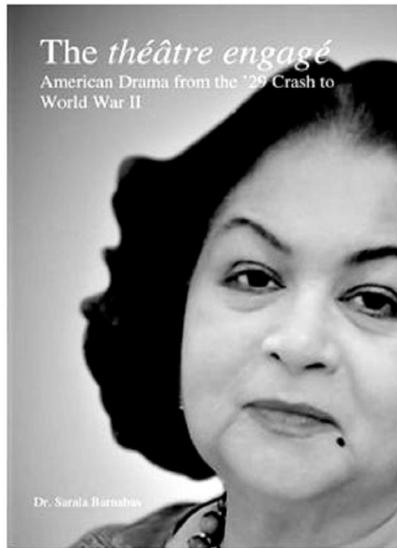
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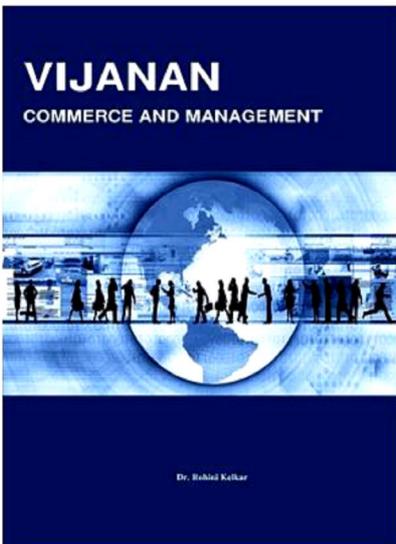


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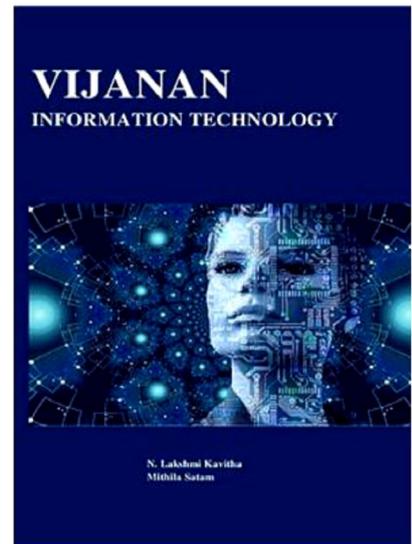
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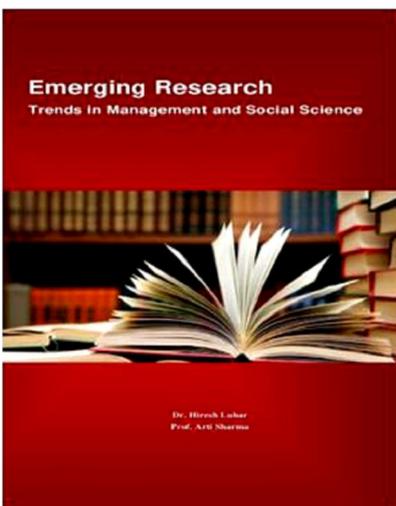
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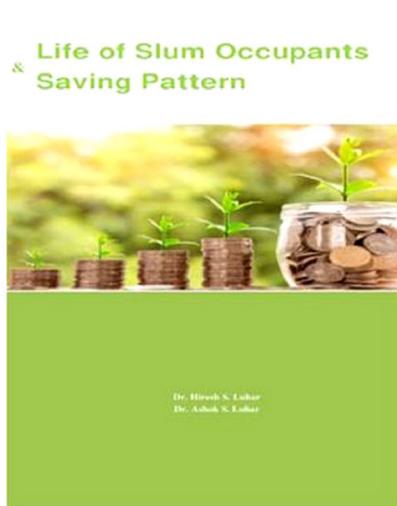
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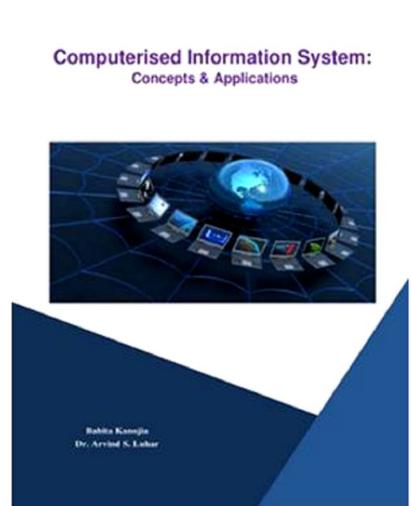
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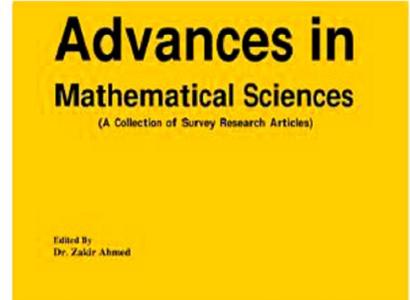
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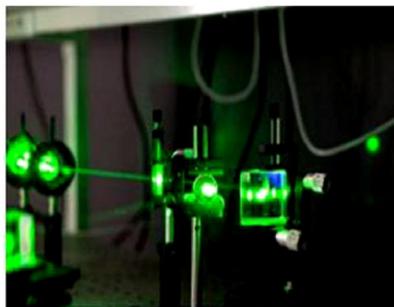


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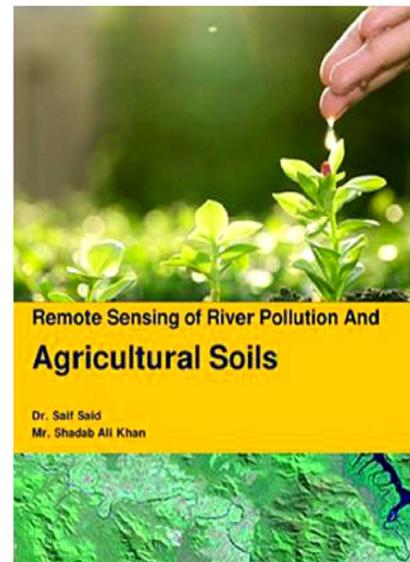
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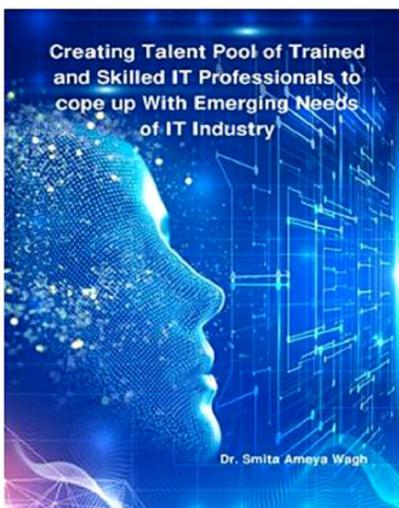
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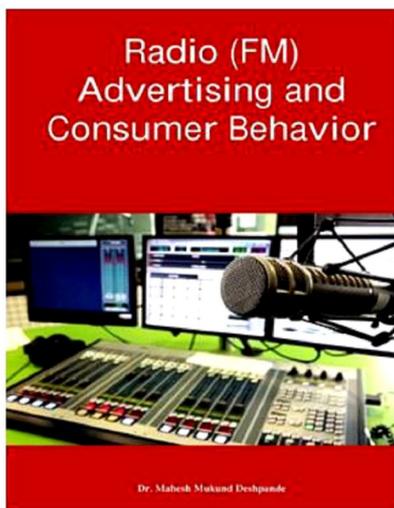
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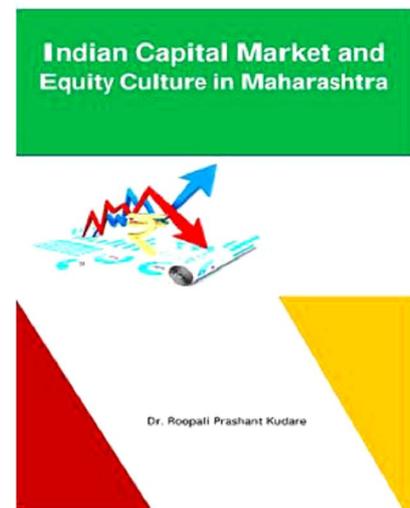
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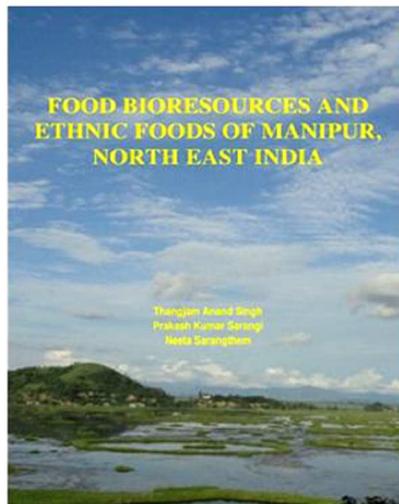
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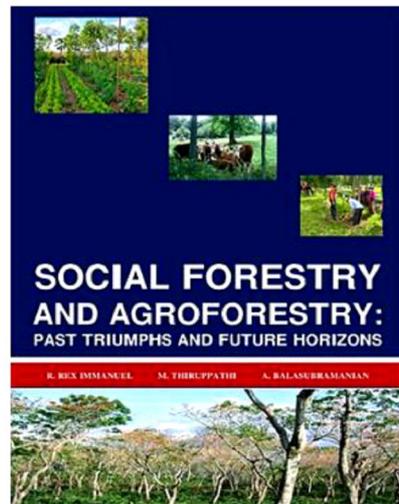
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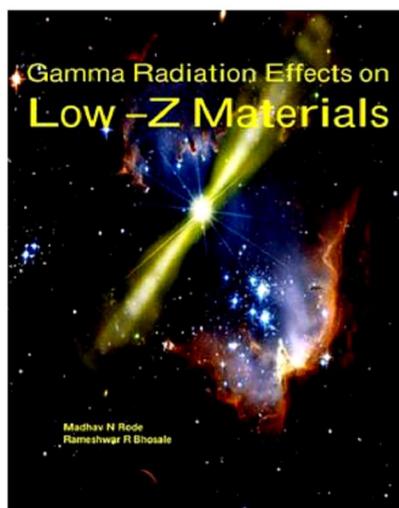
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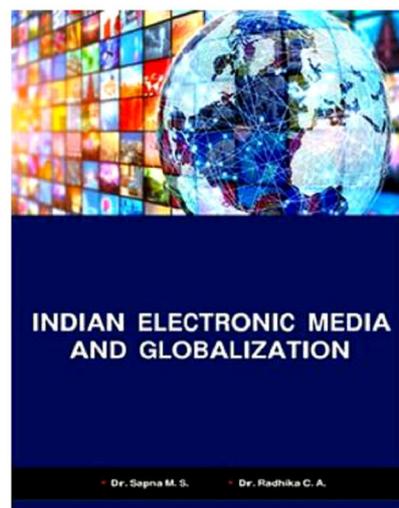
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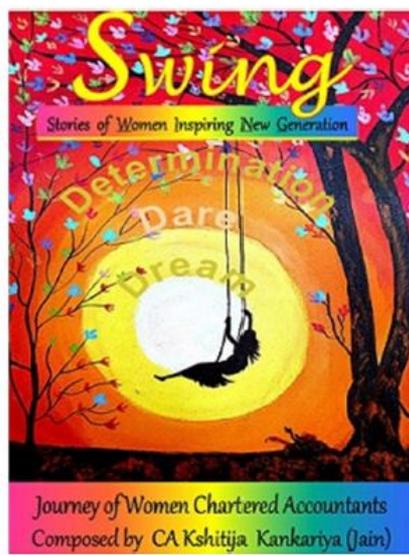
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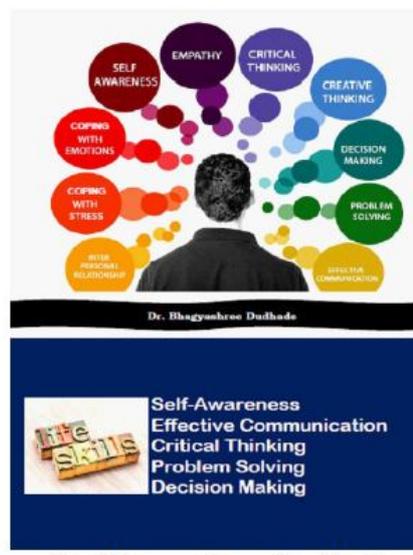
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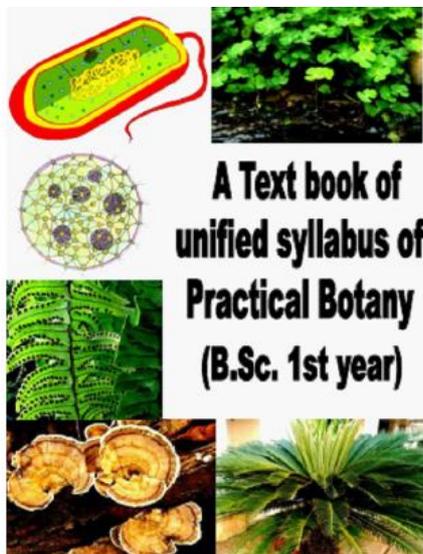
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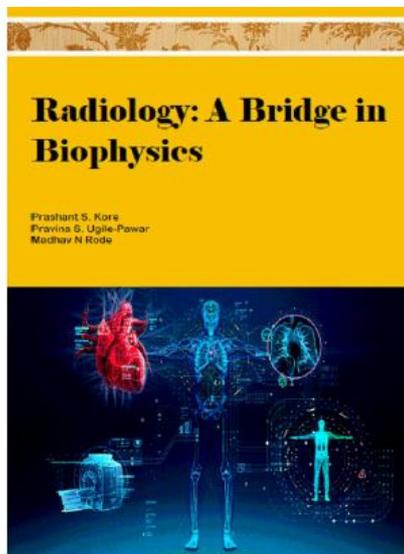


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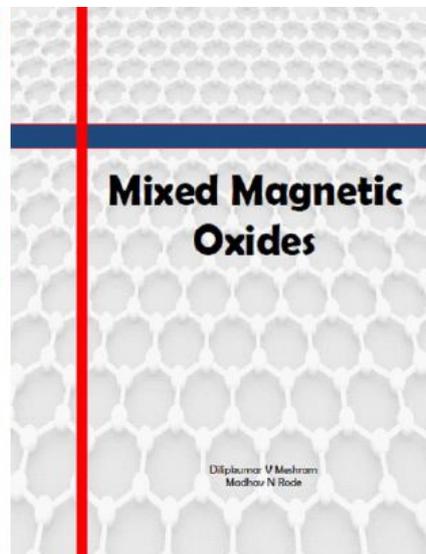
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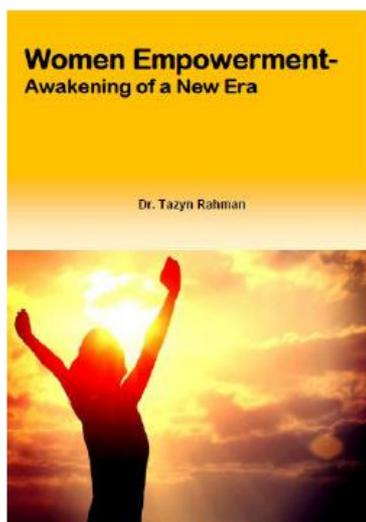


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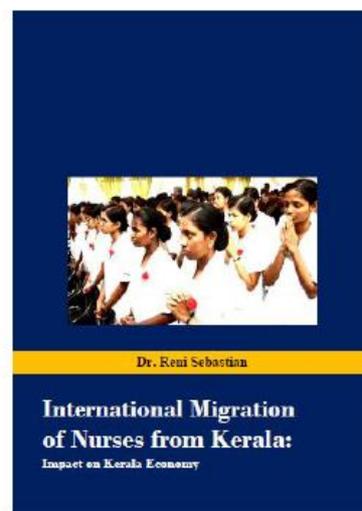
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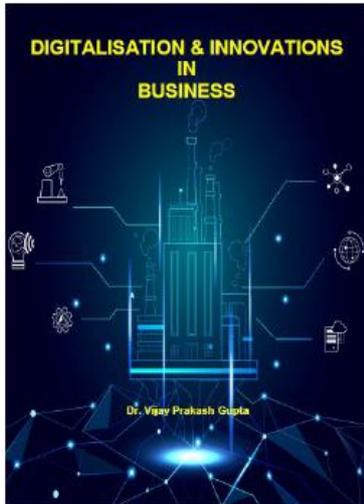
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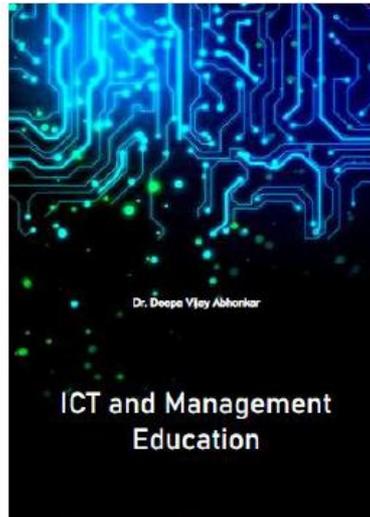


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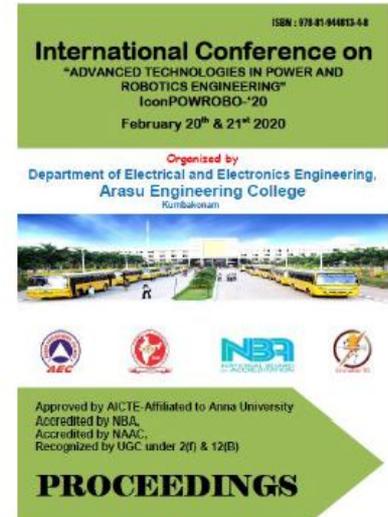
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