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CONTENTS

Research Papers

A STUDY ON CONSUMER PERCEPTION ON EURO-FRESHO, A PACKAGED FRUIT DRINK IN NERUL CITY

Yash Shirish Shrotri

Student, SSR IMR, Silvassa

ABSTRACT

Perception is the ability to see, hear, or become aware of something through the senses. Perception is the way in which something is regarded, understood, or interpreted. The process by which people translate sensory impressions into a coherent and unified view of the world around them. Though necessarily based on incomplete and unverified (or unreliable) information, perception is equated with reality for most practical purposes and guides human behavior in generals. Juices are an important segment of the beverage market in India. The aim of this study is to analyze the perception of consumers of ready-to-drink juices for Brand Euro-Fresho. Data was collected in form of a structured questionnaire from 150 Consumers with Convenience Sampling Method. The objective of the study is to analyze the important Factors in buying packaged Fruit drink and as per the study conducted, researcher found that Flavor, Taste, quality, packaging and Expiry date are very important factors for a consumer to buy a packaged fruit drink. Another objective of the study was to evaluate the Euro-fresho Brand through Ratings on various Factors and Quality and Price were the main reasons that lead consumers to choose these beverages. Majority of consumers has given a high rating to Price and Quality. Low rating on Brand Ambassador indicates that there is less awareness of product in market due to any personality involved in advertising. The research concluded with fulfilling the objectives of the study and gathering useful insights into the behavior of consumers regarding packaged fruit drink.

Keywords: Consumer Perception, Euro – Fresho Juice, Packaged Fruit Drink, important Factors, Buying.

INTRODUCTION

Food and beverage industry is one of the most rapidly growing industries after the food industry. People can't live without food. On the other hand, without the opportunity of indulging their thirst for soft drinks, they would be dead either.

Food and beverages – these two items go a long way along with modern peoples' day to day life and also in the food industry. People are now more likely to try new things daily. They are bored with their drab way of living and that's where they start exploring new and interesting ideas to make life more amazing. And in their quest of an exciting life style, food and beverages as well as soft drinks produced by the food and beverage companies play a key role and so do a food and beverage industry along with the food industry. And among the full list of food and beverages that are produced in a food and beverage industry, soft drinks are always found on the top as the augmentation of soft drinks has made the food industry and the food and beverage companies bigger. Soft drinks are adored by almost everyone; even people who are forbidden by their nutritionists to have soft drinks, are found having soft drinks crazily

Euro India Fresh Foods Pvt. Ltd is Associate in Nursing Indian primarily based dish manufacturer. The factory measure tailor created to suit the Indian roof of the mouth. Our product ranges from a good form of seasoned chips to beverages. A number of our merchandise embody, Euro Chips, Euro Namkeens, Euro Getmore, Euro Wheels, packaged Drinking water Euro Spa, Euro's mango drink Fresho and lemon primarily based drink Euro Lemoni.

Here at Euro, we tend to make sure that we tend to build snack foods as healthy as potential. Euro India Fresh Foods Pvt. Ltd. is an ISO 22000:2005 certified organization that is fleetly capturing the market. We tend to hope to become a number one FMCG Company with the snacks, drinking water & fruit juices that we tend to manufacture.

OBJECTIVES OF THE STUDY

- To Analyze the Important Factors in Buying packed Fruit drink.
- To Evaluate the Euro-fresho Brand through Ratings on Various Factors
- To Understand the Perception about the Packaged Fruit Drink in Nerul City

OVERVIEW OF THE THEME

In a country of more than a billion populations, there exists huge market for fruit-based drinks. India is the largest producer of fruits in the world at 60 million tons. There is also a growing concern about the health and

lifestyle of the population, as reflected by the search for healthier foods and drinks .To please more consumers, industries have invested in the development of new products that have these characteristics, using marketing strategies for media coverage to influence consumer choices Hence this report gives an overview of up to what extent the packaged juices-Euro brand have positioned itself. To understand the ultimate consumer behavior towards packaged fruit juice Brand Euro Fresho-"Consumer Perception of packaged fruit juices" involved a study on the consumer perception of packaged fruit juice, their brand preferences, buying behavior and media consumption.

Juices and fruit nectars are an important segment of the beverage market in India. The aim of this study is to analyze the perception of consumers of ready-to-drink juices for Brand Euro-Fresho. The level of education and knowledge about the brands of beverages were significantly related. Availability of the brand was the main reason that led respondents to consume these drinks followed by quality and price.

Quality and price were the main reasons that lead consumers to choose these beverages. Another fact to be noted is that many drinks are ready for consumption are available in Indian supermarkets, but the difference between these products is not described on the packaging. Based on the above information, this study aimed to analyze and characterizes the perception of consumers of Euro fruit Juices by behavior and level of knowledge about the beverages between different brands.

LITERATURE REVIEW

A literature review is a description of the literature relevant to a field or topic. Literature covers everything relevant that is written on a topic: books, journal articles, newspaper articles, historical records, government reports, theses and dissertations, etc. literature review gives an overview of the field of inquiry: what the key writers have already said on the topic.

Human being is with full of curiosity and this draws them towards finding the facts. Knowing the facts requires the researcher to understand and get in-depth knowledge of the topic After selecting the topic, the researcher tried to conduct a complete study of the available literature to know the past, present scenario and to understand the future trend. Literature review also helped the in the study to know of the deviations in the present study and if possible to give certain remedial measures.

- Thapa, K. (1-9-2017). A study on Customer satisfaction with snadi fruit drinks. kuopio: savonia university of Applied sciences.The main purpose of this project is to study the customer satisfaction with Snadi fruit drinks and give the opportunity to identify the customer behavior and possible ways to improve the customer service and relations. The research is executed to improve the taste and price of Snadi and bring possible changes that customers want to see in the future. According to Hill, Roche, & Allen (2007), improving customer satisfaction is going to be ex1tremely difficult because the organization wants to focus on controlling or reducing costs   This project says about advantages of a product and elements of customer satisfaction. And also project contains questionnaire survey. The total questionnaire was expected to be filled 100 but only 55 were filled and out of them 3 were filled half and that 3 questionnaire were not included in research. Based on these 52 filled forms, the customer satisfaction with Snadi fruit drinks has been studied the result is presented using percentages and numbers. And the result shows that the company has the proven capability to produce quality in quantity. However, based on the result of the survey, there are certain activities that have to be taken into consideration and need to be improved. According to the author, the firm is suggested to promote tangible qualities so that people think of your product before buying competitors product

- Vaghela, P. (December 2014). A study on consumer perception towards online shopping. International journal of Technology Marketing Online shopping is the process of buying goods and services from merchants who sell on the Internet. Buyer can visit the websites and stores like Flipkart, Amazon and buy their products online through internet. The main aim of this research is to study the perception of the customers towards online shopping. For this, convenient sampling method is used 150 respondents were selected and data were collected through structured questionnaire. On the basis of data analysis it is found that most of the customers have said that online shopping is better option than by going manually and buying the products. Customers and buying their buying the products by accessing the net while sitting at home, office and college. Large customers are buying the electronics items and accessories. The limitation of the online shopping is buyer cannot see the product personally and it takes more time to deliver the products and they are facing problems while making online purchases

Sharma, D. (2014). A study on consumer perception for automobile industry:A study on Two Wheeler's. Newai: Dr K N Modi University. The Study is about consumer's behavior' with reference to automobile industry (two wheeler) in Tonk city Rajasthan (INDIA). Sample size taken as 100 and semi – structured questionnaire was prepared to see the consumer perception about two wheelers and their behavior and willingness to buy such products. The study shows that all respondents are willing to pay price premium, but the level of acceptance changes from time to time. Today the success of any firm is depending upon the satisfaction of consumer. For satisfying the consumer the firm should know about the behavior of consumer. The study focuses on understanding the factors like demographic, social cultural, price, quality, product attributes etc for buying two wheelers. A total of 58% of the consumers are willing to pay premium price of bikes. Comparatively sale of scooters are less. Mostly consumer want bikes and give preference for buying bikes that have better design, comfort, mileage, fuel efficiency etc. The survey also suggested that the consumption of two wheelers is increasing; however, product development and innovations in certification, Processing, labeling and packaging are needed to further stimulate demand.

RESEARCH METHODOLOGY

A study on consumer perception on Euro-Fresho, a packaged fruit drink in Nerul city with special reference to the Arita Networks (OPC) pvt ltd. The researcher has done exploratory and descriptive study with the data collection from both the sources i.e. Primary and Secondary data. The research was done onto the consumers of Nerul city with a sample size of 150 respondents.

The sampling technique used was Convenience sampling method. The tool for analysis was Structured questionnaire which includes 17 Questions and 10 sub questions and were used both the close & open ended Question where the researcher is free to answer in their own words too. The study aims to understand the Perception of the customers towards the Euro fresho, a packaged fruit drink in Nerul City.

ANALYSIS:

Objective 1: To Analyze the Important Factors in Buying packed Fruit drink.

Graph No-1   Source – Primary data

Graph No-2   Source – Primary data
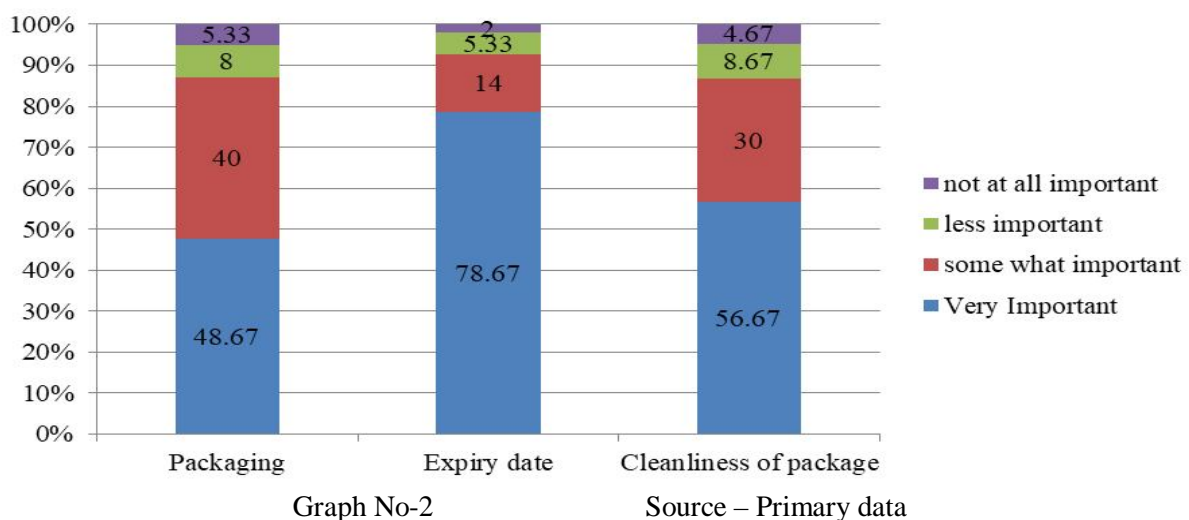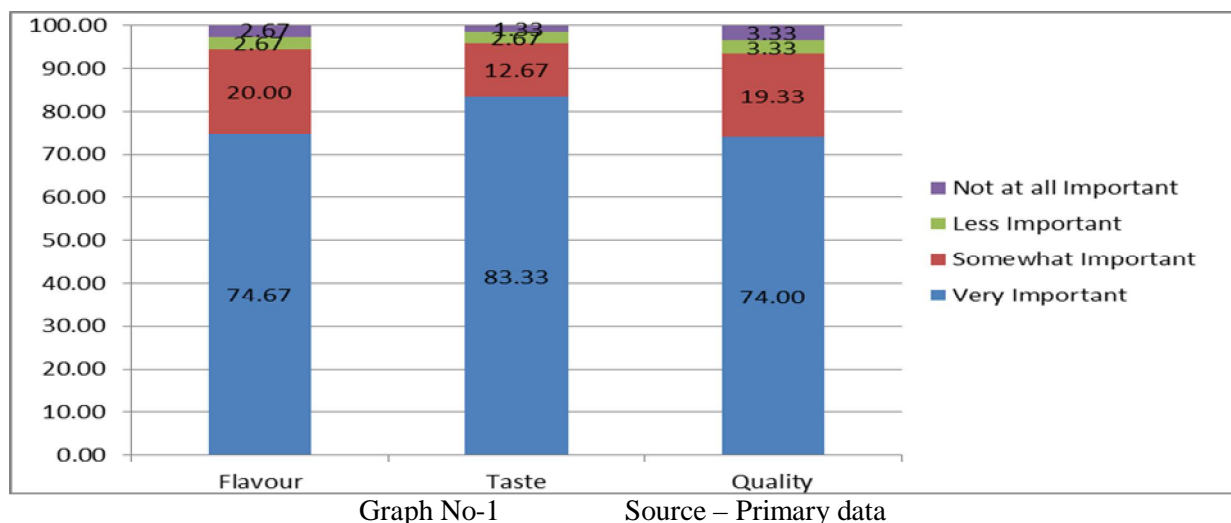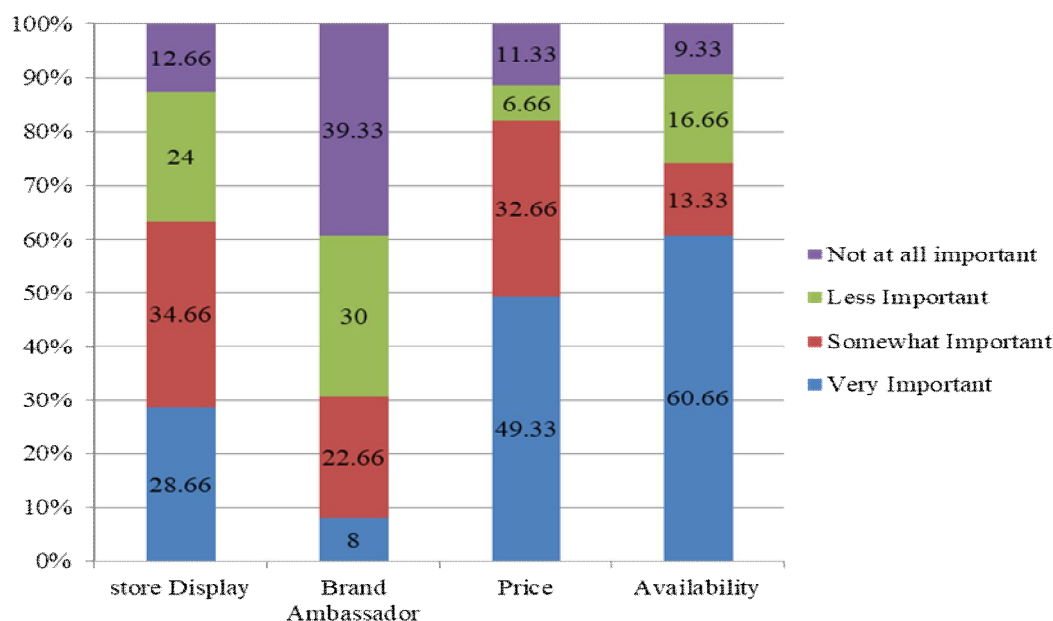
Graph No-3   Source – Primary data

- As per the Survey and as per the study conducted researcher found that Flavor, Taste and quality is very important factor for a consumer .Flavor, taste and quality play an important role in minds of a consumer without quality and taste a product cannot be accepted in market. Flavors, taste and quality for a product is very important to sustain in market.

- As per the study conducted researcher came to know packaging is very important for a consumer. A good packaged product attracts the consumers mind. Also survey shows that for consumers Expiry date became an important factors while buying a product. Now a day's consumers are more health conscious.

- As per study and survey conducted by the researcher 35% of consumers have said store display is somewhat important because if your brand is developed and well known to consumers than consumers will automatically buy your product you don't need to display your product.

- 70% of consumers have said brand ambassador is less or not at all important for a product Fresho. Also price is very important for consumers' affordability plays an important role in buying decision.

Objective 2: To Evaluate the Euro-Fresho Brand through Ratings on Various Factors

Rating out of 10 for Euro fresho drink 1-Worst and 10- Best

Average of factors on scale of 10
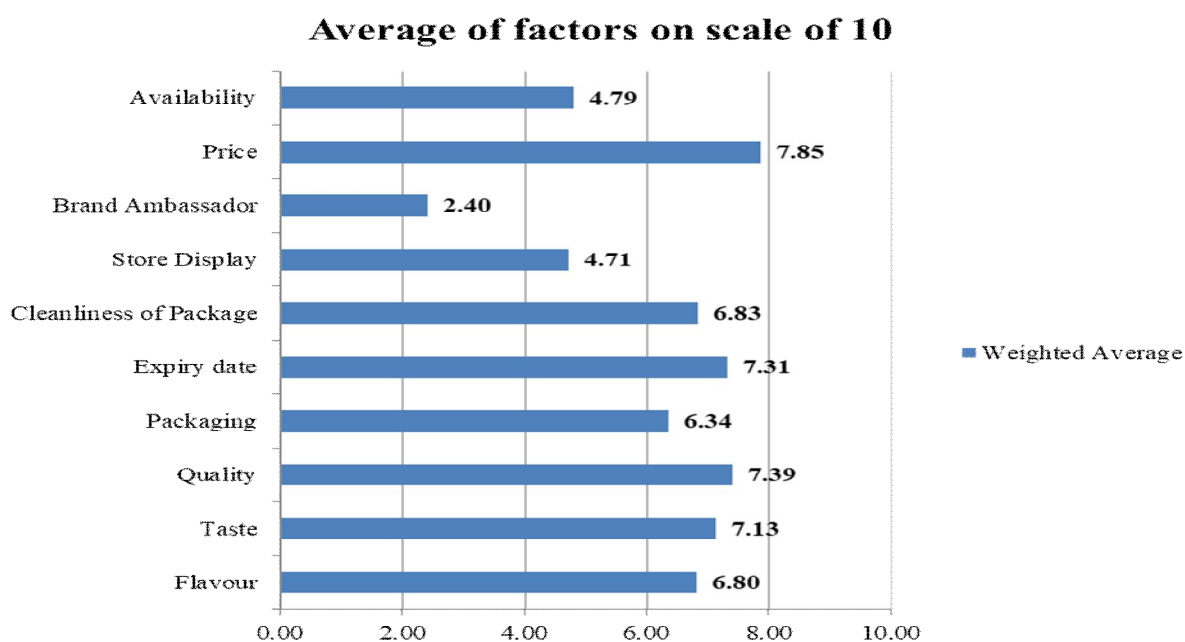
Graph No-4   Source – Primary data

- As per study conducted Researcher found that majority of consumers has given a high rating to price i.e. 7.85/10. Price of a product plays a very important role in the mind of consumers whereas 7.39/10 to Quality also. Consumers are satisfied with the Quality of Fresho juice. Fresho juice has quality, quantity, And Taste i.e. 7.13 in an affordable price so it is very much accepted in Nerul city.

- Also Consumers has given 7.31/10 ratings to Expiry date of Fresho juice. With high ratings in Expiry date researcher came to know how consumers are health conscious these days.

- Very low rating on Brand Ambassador I.e.2.40/10 shows that there is less awareness of product in market due to any personality involved in advertising.

Generally, at what time do you drink packaged fruit juice?

Prefered time
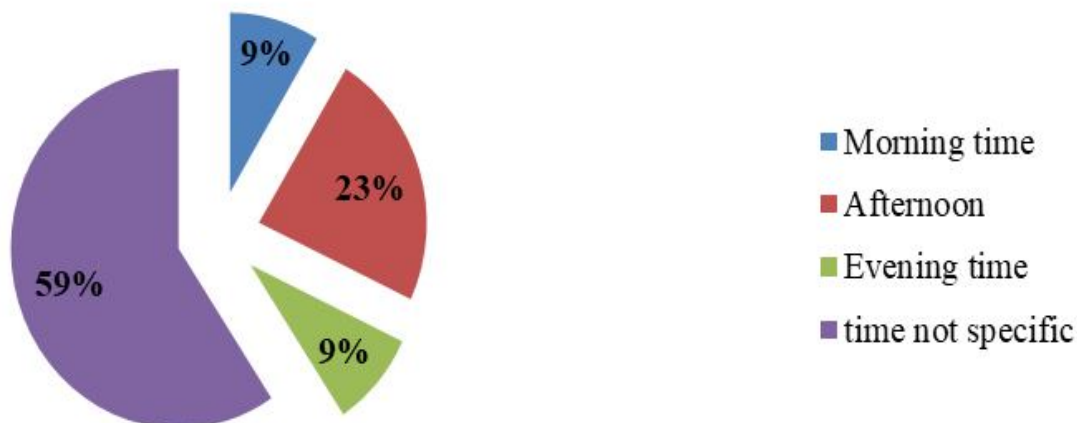
Graph No-5   Sources – Primary Data

- As per the survey conducted by the researcher, 59% of consumers have said there is no such specific time to drink packaged fruit juice. Whereas 23% has said they mostly prefer in afternoon to get quick source of energy.

- Only 9% has said they prefer in morning time. Company has to Promote their juices to be drink in morning time because a most studies show that drinking juice in the morning (on an empty stomach and alone) is the most beneficial time of day to have fresh juice. The nutrients will be absorbed more easily and it doesn't have other food to interfere with your body cleansing. Juice is mostly for cleansing.

You drink Euro-fresho juice because of,

Attributes
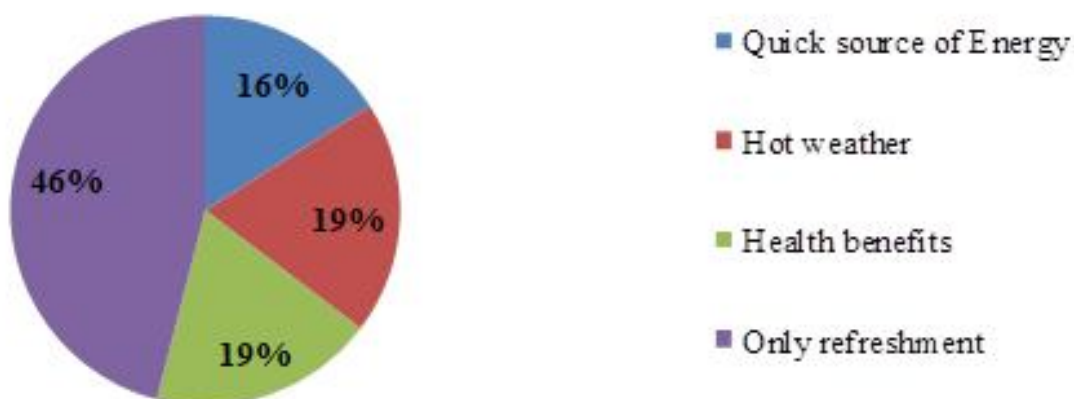
Graph No-6   Source – Primary data

- As per the study conducted it was found that majority of consumers drink

Euro-fresho juice just for Refreshment i.e. 46%, 19% prefer because of Hot weather and health benefits, 16% because of quick source of Energy

What attracts you to a product Euro Fresho?

Attraction Factor
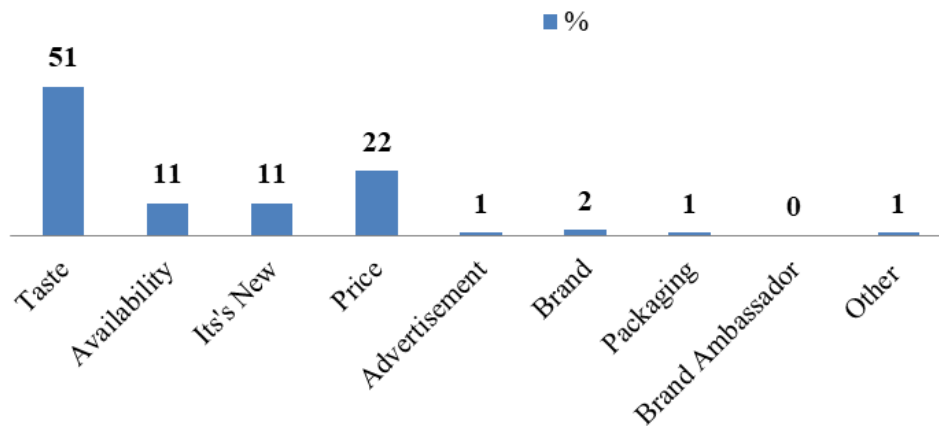
Graph No-7   Source- Primary data

- As per study conducted researcher found that taste attracts most to the consumers.77 people are attracted from taste out of 150 people. 33 people said they are attracted from the price, 17 people said Availability, 16 people said it's an new product so they are attracted, 3 people are attracted by brand, 2 people said by packaging, 1 by advertisement and other.

On what occasion you prefer to drink Euro fresho drink more?

Preference - occassion
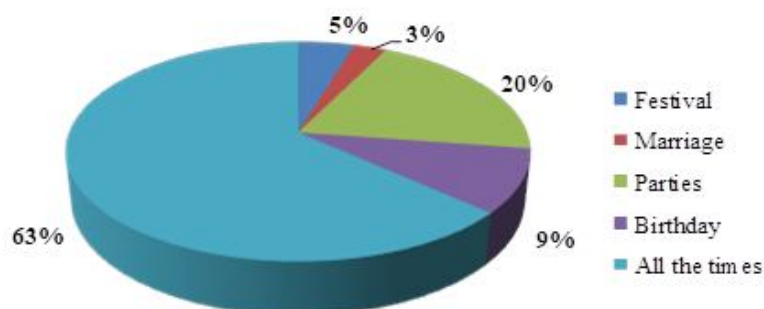
Graph No: 8   Source – Primary data

- As per the study Majority of the consumers i.e. 63% of people prefer to drink all the times means for them no specific occasion is needed to drink.20% prefer on parties,9%on birthdays, 5% on marriages and 3% on marriages.

Euro Fresho is "value for money"?

Value for Money
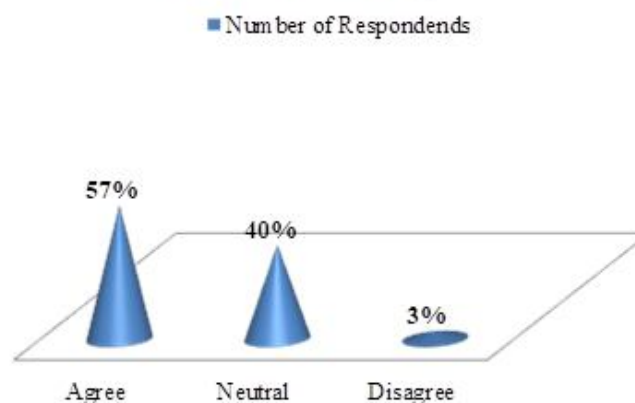
Graph No: 9   Source – Primary data

- As per the study conducted, Out of 150 consumers 85 consumers said that they are agree and Euro-Fresho juice is Value for Money.60 consumers are neutral and 5 consumers are disagree with the fresho juice

CONCLUSION

The study is an attempt to measure Consumer Perception on Euro Fresho, a packaged fruit drink in Nerul city. The consumer is the main asset for any organization, without satisfying them no organization can be run well. Consumer perception towards Euro – Fresho Juice is affected by various factors. This survey was meant to identify the consumer perception towards Euro Fresho, a packaged fruit drink. Findings of this research suggest that the Important Factors in buying packed Fruit drink are Flavor, taste and quality. It plays an important role in minds of a consumer without quality and taste a product cannot be accepted and sustain in market. Also packaging is very important for a consumer a good packaged product attracts the consumers mind

The study concludes that, Consumers have Evaluated Euro – Fresho Brand through Ratings on Various Factors however from the analysis it is found that price and Quality of a product plays a very important role in the mind of consumers. Fresho juice has quality, quantity, And Taste that is in an affordable price so it is very much accepted in Nerul city.

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A STUDY ON EMPLOYEE ACQUISITION, RETENTION & ENGAGEMENT: A CASE APPROACH

Aaradhana Gupta[1] and Dr. Rajesh Kumar Pandey[2]
Student[1] and Associate Professor[2], SSR IMR, Silvassa

ABSTRACT

Human Resource attracts a huge concentration of the Organisation. Massively the recruitment, their stay at the Organisation and engagement at workplace requires attention. Acquiring and retaining employees plays an important role in any organization, as employees' knowledge and skills are essential to inculcate the competitive edge. Employees expect freedom for decision making that might affect their functions. The leadership has extreme influence on People Management. They influence the innovative culture at Organisation. Such environment supports the retention & engagement of employees. The Acquisition of employees requires tremendous focus, retention attracts massive challenges and engagement is the result of strategizing. This Paper attempts to understand these aspects of employee management.

The study aims to understand the concept & significance of Employee Acquisition, Retention and Engagement at Organisations. The study also exhibits the inferences drawn from the Interviews conducted at selected Organisations pertaining to the Employee acquisition, retention and engagement. This descriptive study is result of Primary data collected in the form of Interviews of the representatives of the Organisations and support of secondary data to produce the literature review. The scope of the study surrounds around the conceptual knowledge pertaining to the theme of the study benefiting the Industry & academic at large. The inferences drawn from the study are based on the five representative organizations which have been selected on convenience sampling basis. This may turn out to be a limitation to the study as the responses are indicative in nature rather exhaustive. Employee Acquisition, Retention and Engagement attract strategic inputs and Organisations today are very critical in strategizing.

Keywords: Employee Acquisition, Employee Retention, Employee Engagement

INTRODUCTION

"Nothing we do is more important than hiring and developing people. At the end of the day, you bet on people, not on strategies."

- Lawrence Bossidy, Former COO of General Electric

Acquisitions have always been strategic whether Organisations or People. Employee Acquisition relates to the recruitment of the best fit for the work profile. Once recruited; it's time for action. Getting a controlled hand on employees is strategic decision. Retention techniques are part of the controlled efforts. Effective employee retention is a systematic effort by employers to generate and encourage an environment that supports employees to extend their tenure. Organisations must establish policies and practices that address their diverse needs. A strong retention strategy eventually becomes a powerful recruitment tool. Employees need to be controlled on their Stress factor that involves their physical stress, mental stress and social engagements. Hence Organisations involve themselves into design better workplaces. Work environment develops the sense of belonging among the employees.

Acquisition & Retention gets supported strongly by Engagement activities at the Workplaces. Organisations with properly engaged employees provide an environment where opportunities flourish pertaining to learn skills, developing abilities, acquiring knowledge and reach their potential. Career development practices help organisations retain talented employees and also provide opportunities to grow internally at Organisation. Employees tend to invest their patience, time & emotions in companies that tent to invest in employees. Career development is a global factor in employee engagement. The Employee Acquisition strategies, Retention techniques and Engagement programmes all put together supports the Human Force management at the Organisation. Every Organisation has its own ways, efforts & procedures to tackle this requirement. As part of best practices it is always essential to refer the proceedings of Companies in the Industry that guides further on Industrial matters. Discussion on the Five companies regarding their views on Acquisition, Retention and Engagement substantiates the motto for this literary effort. Selecting right fit employee, developing & retaining the Talent and engaging resource shall always be the priority of the Organisations.

OBJECTIVES OF THE STUDY

The authors have considered the following objectives for the study:

- ► To understand the concept & significance of Employee Acquisition, Retention and Engagement at Organisations.

- To study challenges of Employee Acquisition & Retention while discussing the factors influencing Employee Retention.

- To exhibit the inferences drawn from the Interviews conducted at selected Organisations pertaining to the Employee acquisition, retention and engagement.

LITERATURE REVIEW

Human Resource Management essentially investigates the People Matters at Organisations. The recruitment of the staff, their stay at the Organisation and the Value add to their potential, all these and many more has been an essential look out for the HR Team at the Organisation. The Researchers have extensively worked on the Human Resource Acquisition, their Retention & Engagement. The Authors have presented a few relevant thoughts in this section under the headings *Employee Acquisition, Employee Retention & Employee Engagement.*

EMPLOYEE ACQUISITION

Employee Acquisition in past and also in future shall always be the essential factor for Human Resource Management. The best of the recruitments lead to best of the human potential at Organisations. While nurturing is the task of the companies, however better input shall always help the momentum. Acquiring & retaining employees is not an easy task, yet every business cannot afford to keep hiring. It is, therefore, a company's responsibility to ensure they treat their employees well both to motivate and retain them for a longer period. One of the most useful ways companies use to maximize productivity and performance is by maximizing on employee's commitment and motivation. (www.Employeepedia.com) Recruitment is like marketing. If you're a recruiter nowadays and you don't see yourself as a marketer, you're in the wrong profession. (Matthew Jeffrey, Global head of sourcing and employment brand at SAP). Acquiring the right talent is the most important key to growth. Hiring was - and still is - the most important thing one does at Organisation. The key to successful recruiting of new employees is the development of a systematic process for developing job descriptions, generating a pool of candidates, and selecting the right candidate (www.hr360.com).

EMPLOYEE RETENTION

Employee retention involves taking measures to encourage employees to remain in the organization for the maximum period of the time.(Griffith & Hom, 2001). A huge amount of time, money and energy is invested to attract the best of the talent and then grooming a new hire and make them corporate ready material. But when attrition is recorded in the organization the investment turns into loss .Therefore employee retention takes place to light up various measures to maximize employees tenure in the organisation. Employee retention refers to systematic efforts made by the employer towards the talented employees to keep them in the workforce by providing them positive work atmosphere and culture, by appreciation, by providing competitive pay and rewards and healthy work life balance and ultimately reducing employee turnover rates and the employee replacement cost. Thus employee retention has now become the strategies to retain the employee. The employees who stays longer contributes efficiently in achieving the organizational Goals as they feel integral part of the overall vision and becomes important part of the company and the position. According to Samuel and Chipunza (2009), the most important purpose of retention is to look for ways to prevent the capable workers from quitting the organization as this could have negative effect on productivity and profitability.

EMPLOYEE ENGAGEMENT

Majority of leading company believes that employees are their real asset. These asset will be fruitful in the true sense only when they will be engaged in the workplace. Therefore most of the companies are now focusing heavily on the Employee Engagement. Employee Engagement is the emotional connection of the employees towards organization's Vision, Mission, Goals, Objectives, Values and Culture and thus they contribute to organizational success along with their own sense of development and growth. Melanie Allen, Managing Director of People Results Ltd (2014) states that Employee engagement is the emotional commitment that employees feel towards their organization and actions they take to ensure the organization's success; engaged employees demonstrate care, dedication, enthusiasm , accountability and results focus. When employees care- when they are 'engaged-they use discretionary effort. An engaged employee is one who is full of enthusiasm about their work and put all their efforts in the direction to enhance the organizational Goodwill and interests. According to Kevin Kruse, Forbes Contributor and NY Times Best Selling Author Employee Engagement is, 'the emotional commitment the employee has to the organization and its goals."

Employee engagement goes beyond activities, games and events because engaged workforce understands their purpose in the organization which drives out their performance and thus they outperform the competition. The art of getting people to believe what you want them to believe" is referred as Employee Engagement (Jim

Whitehurst, CEO of Red Hat). When the employees are engaged they care about their work & the company and they work hard in a belief that the work they are doing is very important for the organization's success. Employee Engagement leads to motivated employees, less absenteeism, increased loyalty and thus higher retention rates and lower turnover rates. Thus Employee Engagement plays very vital and key role when it comes to organizational innovation and the growth.
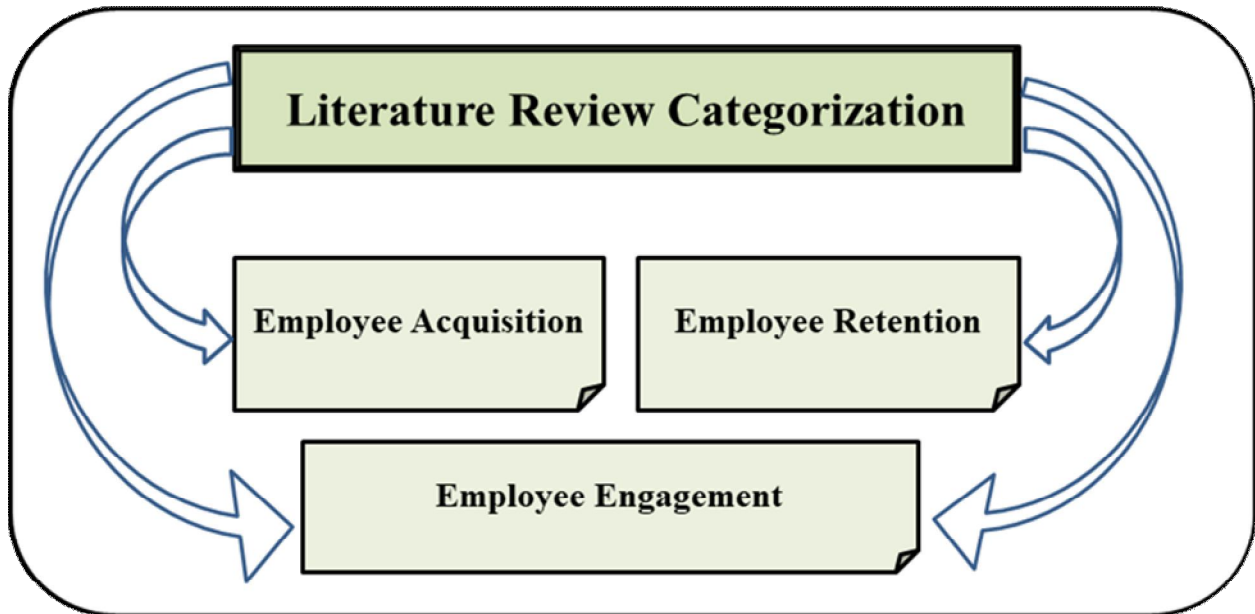
Chart No-1: Literature Review Categorization

RESEARCH METHODOLOGY

A Study on Employee Acquisition, Retention & Engagement: A Case Approach is a descriptive study conducted with the help of both Primary & Secondary data. The study aims to understand the concept & significance of **Employee Acquisition, Retention and Engagement** at Organisations. The study encapsulates the learning gathered from the theoretical reviews and in-person interaction with the HR Managers at the selected companies. This attempt adds to the existing literature pertaining to the theme of the study. The Authors have considered the Industry at large rather considering any specific industry for the study. This may lead to limitation of the study and the results are more indicative in nature rather exhaustive.

RESEARCH PROCESS

The study was conducted with the help of both Primary data collected from selected companies for the study & Secondary data collected from various sources listed at the references. The Authors have followed the following Research Process to complete the literary work:
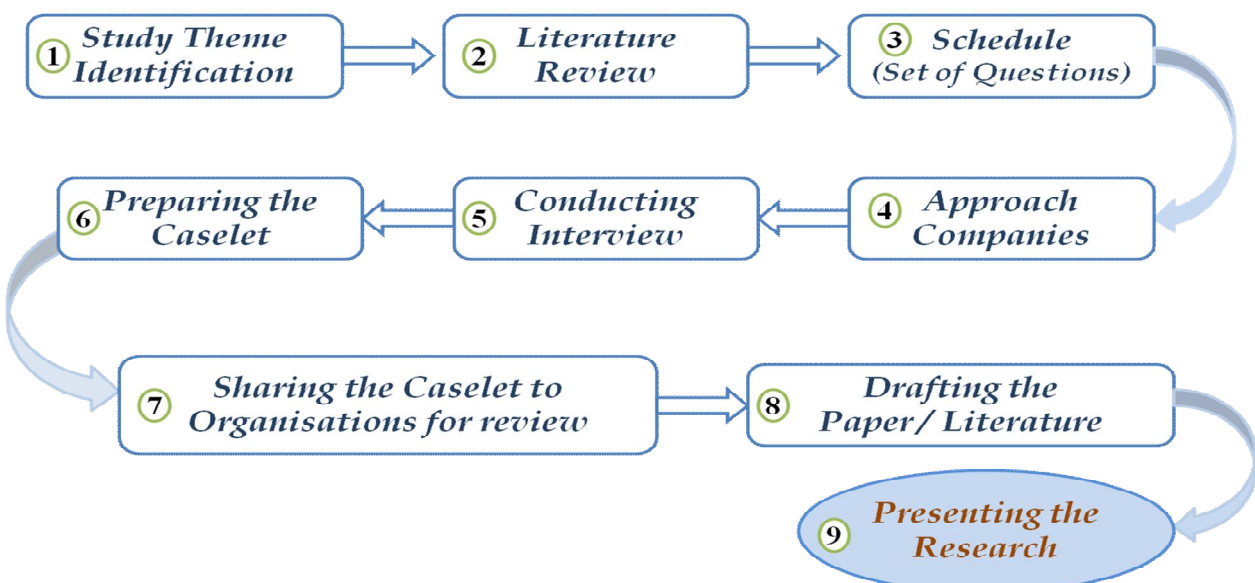
Chart No-2: Research Process Adopted for the study
Source: Author's Study

RESEARCH ENQUIRIES

The Authors through this piece of study ensure to reach nearer to the solutions of following enquiries:

1. The challenges faced by the Organisations pertaining to the Employee Acquisition & Retention.

2. The factors influencing the Employee Retention at the Organisations.

3. The essential Employee engagement policies for the Organisations.

Exhibit – 1: LEADING CONDUCTOR MANUFACTURING UNIT, SILVASSA

"Employee Acquisition, Retention and Engagement – Pillars for Organisational Success."

- *Organisational Philosophy*

The Leading conductor Manufacturing Company at Silvassa states that Employee Acquisition is an essential aspect for smooth functioning for the Organisations. Right person for the right job is the priority for Organisations. Hunting for the right fit also possess challenges to the company in the form of *required Talent, then relocation of employee, Location Infrastructural challenges* etc. While acquiring right fit is a challenge, retaining the right fit is further more important. The Organisation finds growth prospects to be the predominant challenge for retaining employees. Satisfying all is a myth and every employee has his / her own *growth trajectory planned*. Also there are uncontrollable retention challenges in the form of *relocation of the spouse* and hence employee is bound to leave. The Organisation considers the following factors that essentially influence the Employee Retention – *Communication Channel, Leadership Style, Learning & Development, Employee Welfare and Organisational Values.*

The Organisational Culture has a very positive impact on the Employee Retention. The company has an *employee friendly HR policy* where the voice of employees is heard and workers participation in Management is key to the decision making process. As part of the Employee engagement, the company focuses on an Employee survey conducted twice an year and builds the Engagement calendar based on the outcomes of the survey. Ensuring a *competitive work profile* is essential for engaging employees. The company believes that an engaged employee shall learn more as against an employee whose work profiling leads to relaxed approach and eventually develops procrastination.

Source: Personal Interview with the HR representative at the Conductor Manufacturing Unit at Silvassa (Company Name kept anonymous, adhering to the Company disclosure policy)

CHALLENGES FACED BY ORGANISATIONS PERTAINING TO EMPLOYEE ACQUISITION & RETENTION

"EMPLOYEE RETENTION STARTS WITH GREAT ON BOARDING".

Acquisition & Retention goes hand in hand. One can't move ahead with recruitment without properly planning the retention of the Employees. Better Recruitment ensures to large extent a better retention. However the path isn't that easy to operate. Retention of Employees has larger challenges. Some of the key challenges are discussed in this section of the paper.
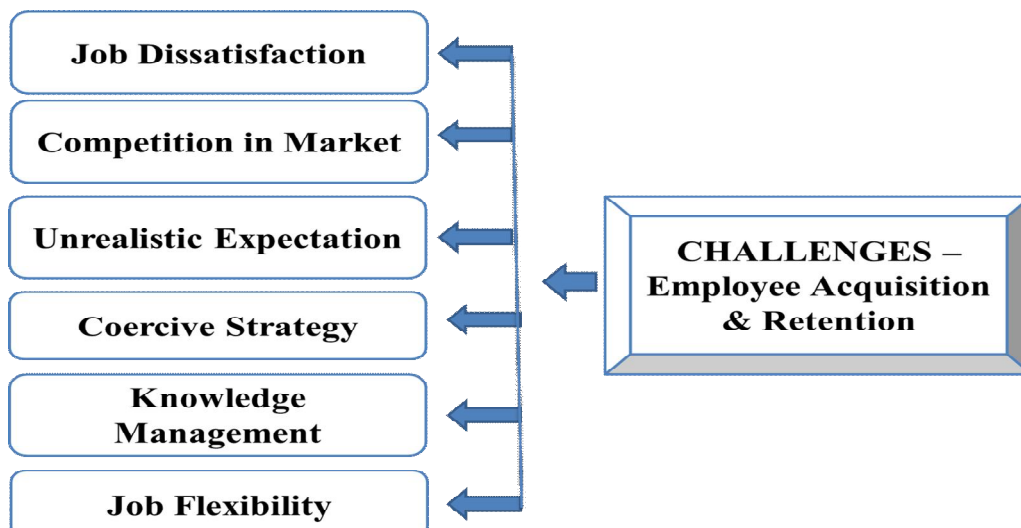
Chart No-3: Challenges – Employee Acquisition & Retention
Source: Author's Study

Job dissatisfaction is a major challenge. Extracting the root cause is essential however becomes difficult as there can be many sources of dissatisfaction i.e., towards job profile, no job rotation, salary expectation, superior – subordinate relations, performance appraisal system recognition & rewards, learning & working environment etc. Also another key challenge is pertaining to the **Competition in the Job Market.** Job opportunities vary from Industry to industry. Competitors attract the talented people and hence make it difficult for Companies to hold back the employees. Ideally "Holding Back" may not be the best approach. Engaging – is the answer. There also may be the **unrealistic expectations of the employees** that may lead to challenge i.e., expectations of comfort and convenience at the workplace. During Acquisition of the Employees considering these aspects is essential.

The Organisations in the wake of retention usually strategize with threatening contracts while employee acquisition like Bond period, monetary penalty etc. Such **Coercion** may not be that effective & becomes challenging however it does work provided executed with positive intensity. **Knowledge management** exercise at the Organisation also is challenge as at times it gives a levy to the organisation that "we aren't people specific". Knowledge gets stored through manuals and guides, use of information technology or specialized systems, and exchange of experiences. The another challenging factor is the **Job Flexibility** i.e., employment flexibility in work times, workloads, responsibilities, location and family responsibilities, all these & many more leads to expectation of flexibility, which, if not targeted well, may lead to trouble.

Exhibit – 2: PIONEER GROUP, SILVASSA

"People are Assets, maintaining a developing relationship with them, works well."

- *Organisational Philosophy*

Pioneer Group is a mix of varied businesses viz. Petrol Pump, Yarn Manufacturing, FMCG, Electronic Products Dealer etc. They primarily operate from Silvassa however they also have a unit at Haridwar. Having tie ups with FMCG giants like HUL, makes them further more impressive in their profile. The philosophy of the Organisation is pretty clear, *Value Human Values.* They consider Employees as Asset and accordingly focus on the recruitment as well. They find that one of the massive challenges today the companies have is in the form of job aspirants lacking practical exposure. Also the over ambitious candidates aren't focusing on the ground learning rather they incline their thoughts more on packages and perks. Further to the acquisition challenges, Retention of employees is also challenging. Employees are growth aspirants and hence inevitably attrition is a crude reality. To curtail this challenge while there are number of measures however basically if the Employers can develop an environment nurturing the attitude of the Employees, this may support the retention instincts further.

Employee Engagement is a huge responsibility for the Employers. *Multitasking Approach, Knowledge up-gradation measures, developing Team spirit etc.* may be certain good engagement techniques. Employees need Care and assurance to safety & security. This massively keeps them physically & mentally attached to the Organisation, leading to a status of well engaged employee.

Source: Personal Interview with Shri. Chandrakant Parekh, Leader, Pioneer Group.

Exhibit – 3: Atul Limited, ATUL, Gujarat

"Better HR Branding has positive impact on Employee Acquisition, Retention and Engagement."

- *Atul Philosophy*

The Leading chemical Manufacturing Company at Atul states that Employee Acquisition is an essential aspect for smooth functioning for the Organization. The only strategic function in HR which company believes is talent acquisition and runs on simple basic philosophy that hiring right person ultimately reduces the cost of bad hire. While acquiring right fit is a challenge because when attrition is very high, recruiters tend to follow number game philosophy wherein just to fill the position, they just go hiring any random person. In such cases quality of candidates gets compromised resulting in bad hiring. When attrition is less there can be numerous challenges like salary constraint, location constraint, perks and facilities provided, poor HR branding etc. The Organisation finds challenge for retaining employees in the sense that, since market has become way more competitive, poaching good employees from competitors has become really easy for cash rich companies who are ready to poach talented employees paying hefty amount. Another factor may offering salary and increment rates below the market standards hence. The Organisation considers the following factors that essentially influence the Employee Retention – *Superior-Subordinate relations, Learning & Development efforts, Leadership style, Compensation Policy, Employee welfare, Overall Management Policy.*

The Organisational Culture has a very positive impact on the Employee Retention. The company believes that Employee Retention is everything to do with organizational culture. It's about finding congruence between employee's individual values and organizational values.As part of the Employee engagement, the company has adopted many employee engagement activities such as *Atul day, Blood donation camp, Food festival, Wellness activities like yoga, Trail run etc.*

Overview on a better Employee Acquisition, Retention and Engagement Policy for Organisations suggested are:

- Better employee acquisition results in good HR branding

- Better retention can be done by compensating as per current industry standards and investing on people development

- Engagement policy should focus on taking care of employees engagement at work by means of well-defined roles and responsibilities, hand holding as well as portraying career plan for him | her concurrently taking care of social engagements which involves family members as well like yearly get-together, rangoli competition, drawing competition for kids etc.

Source: Personal Interview with Mr. Abhishek Rane, Dy. Manager – HR, Atul Limited, Atul, Gujarat

FACTORS INFLUENCING THE EMPLOYEE RETENTION
Employee Retention is a continuous effort of Organisations towards securing the Talent pool. Investment in Training is huge not just from monetary perspective but from time perspective as well. Every organisation develops a set of practices towards empowering its effort for retention of employees. While massively its Employee's choice of continuing with the tenure however the Organisations does employ certain practices to be safe & create an ambience of human development. The identified factors influencing the Employee Retention are discussed in this section.

Effective **Communication Channel** across the departments support the intent of employee retention and it further gets supported by the **Superior – Subordinate relations.** One of the major causes of employee attrition over the period has been recognized as the no cordial relations with the superiors at the Organisation. Also employees have an inbuilt desire of growth and if the **Learning & Development effort** at the Organisation doesn't the same, it becomes difficult for the Employees to continue. A planned approach towards Learning & Development provides an edge to the Organization in retention of employees. Unlike the new recruits, the Employees with a fair amount of experience mature at Organisations & look forward to the larger goals in life. These employees may value the Organisational culture more than the new comers. The new recruits need to be trained on **Organisational Values.** That emphasizes on the need to creating a sound value system that guides and governs the human potential & growth.

Leadership style certainly has the influence on the Retention of the Employee. The growth trajectory of an organisation is guided by the Leaders. Employees consider the leaders as path finder and hence the better the Leadership style more is the possibility of the employees getting attached & attracted to their work profiles. The Leadership does influence the retention, at the same time **Compensation Policy** also has a definite role in seeking attention of the employees. Various components of Compensation may require strategic inputs to ensure appropriate execution. This shall further get linked to **Employee welfare** aspects, which is yet another potential influencer to the employee retention. Welfare measures may attract monetary inclusion and hence overall cost to the Employees increases. The better the welfare aspects, better will be the prospects of retention.

While intrinsic factors influence the Retention at Organisations, the **External Business Environment** also has a significant role. This may be attributed to factors like competition in job market, business prospects of the Organisation, performance of the product etc. This remotely if not directly influences the retention of employees. The other factors that have potential to influence the retention of the employees include the **Feedback mechanism at the Organisation** and **Overall Management Policy.** Growth oriented employees always seek effective feedback that enables them to make their performances better. This Feedback mechanism and other transactional efforts at the Organisation are the result of the Management policies. A thoughtful policy ensures the betterment of the Industrial situation which eventually benefits the employees.

Chart No-4: Factors Influencing the Employee Retention
Source: Author's Study

Exhibit – 4: Huhtamaki – PPL, Silvassa (Formerly known as The Paper Products Ltd.)

"Business comes from the Innovation"

- *HPPL Philosophy*

HPPL is a leading packaging MNC known for its pioneering efforts in consumer packaging since 1935, with the philosophy of Innovation as a key to success. HPPL encompass deep knowledge of the market and the processing requirements and thus they are able to support customers in their packaging requirements like comfortable product shape, convenience use, eco-friendly and choosing the right packaging format without compromising the quality of finished product. Multiple locations of operation in the Nation and the strategic movements in the business have led the Organisation to reach the heights. The impressive client list that includes Britannia, Coca Cola, Ferrero, Glaxo Smithkline, Marico, Mondelez, Nestle, Pepsico, P&G, Unilever, etc. scales up the business.
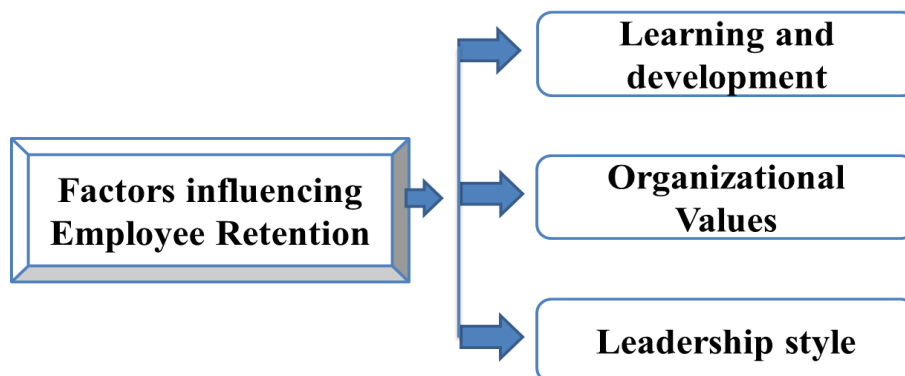
HPPL sincerely believes that Knowledge, commitment and actions are what finally lead to success. Open hand cultures which involves and empowers; which believe in sharing and training etc. are their philosophy which they ensure to be their practice. HPPL states that Right talent acquisition and the role specific hiring of the employee is very essential for the smooth running of the organizational affairs. While acquiring a right employee the major challenge faced by the company includes the aspects like employees are very ambitious, they tend to opt for the short cuts for achieving success as well as they are superficial in their approach towards job rather than learning oriented. Along with acquisition, the further more difficult aspect in the world of HR is the retention of employees. HPPL enjoys good knowledge base of employees; also it has established itself as a reputed brand in B2B atmosphere. While Poaching is a reality in Industry, the HPPL employees who are interested to switch find a red carpet entry with attractive packages and incentives. The organization considers the following major factors influencing employee retention - *Learning and development efforts, Organizational Values and the Leadership style*. HPPL strongly believes that the organizational culture has impact on the employee retention as it results into establishing a strong bond among employees.

Engaging Employees in this fast moving Industrial scenario & competitive era is utmost important. Along with the innovative work environment, a few other employee engagement activities like Family visit for the HPPL employees during the month, department wise dinner programme, conducting the recreational activities like Sports day and festive days etc. leads to a good gelling environment at the Organisation and contributes to the success. HPPL believes that better employee Acquisition, Retention and Engagement policy will be much effective if Care for the employees will be done and further the HR must be approachable by all at Organisation.

Source: http://www2.huhtamaki.com/web/flexible-packaging-india/about-huhtamaki-ppl

Personal Interview with HR Representative at HPPL, Silvassa Unit

ESSENTIAL EMPLOYEE ENGAGEMENT POLICIES

Employee Engagement has the potential to get the human force intact with the Organisation. Engagement leads to Motivation that eventually supports Performance & Productivity and finally augments Profitability. "Over 90% of employee engagement, motivation & productivity can be improved by the individual employee themselves – it's just that until now most haven't known how." www.lifebydesign.com. This signals the thought that Engagement policies have to be streamlined in order to fetch the benefits. The issue behind questions on engagement of employees is beign raised due inadequate implementation of the engagement ideas which eventually deters the desired improvement in employee engagement. Creating a culture of inspiring people is essential. Employee engagement is an investment we make to ensure the organisation's productivity and performance. A dilemma surrounds the fact that does money influence the engagement and the big response is **instead of paying more, pay more attention.** Policies must be designed to pay more attention on *Work profiling, Recreational activities, Growth oriented schemes, work life balance etc.*

Exhibit – 5: Bayer CropScience, Vapi

"We aim to build true and tailored collaboration models united by an innovation and outcome-driven mindset and strongly focusing on the patients as we adhere to our mission, Science for a better life"

- *Bayer Philosophy*

Bayer Vapi Private Limited (formerly known as Bilag Industries Pvt. Ltd.) is a 100% owned subsidiary of Bayer SAS France. It is engaged in manufacturing active ingredients and its intermediaries for use in a wide array of agriculture and environment protection products. It is a core manufacturing site for the Crop Science Division of Bayer globally and its single largest exclusive manufacturing site for Synthetic Pyrethroids production facility in the world.

Bayer agrees that Employee acquisition has a leading role in the smooth organizational affair as it believes that it is most important aspect for the growth of the organization. In their opinion acquisition of the employee should be done on the need of the job or role and not merely on the merits of the candidate. Bayer firmly believes in, 'Right fit'. It also sees that whether the new incumbent will get well in an existing culture of their organization. It ensures the right cultural fit so that such employee can attribute to the growth or else they will be end up addressing issues and ultimately an early exists.

Acquiring right employees is the major challenge faced by the company because it lacks availability of competent candidates as the candidates are many but in deep dive they lack functional competencies. Further major issues in acquiring right employees are location constraints, high compensation expectation vs. the learning attitude, high expectation of hiring managers against the required skill set, lack of leadership involvement.

Company faces some major challenges in employee retention because organization has to invest lot of time, money and energy to make out plans for employee retention in various ways or else company will have early alarms of employee exit. Other major issues includes *manager lacks their own team development; employees are not emphasizing more on the bigger picture and future of the organization and their own career -short vision, more emphasis given on business priorities than employee development priorities and staying at par with the market compensation and benefits segment.* The organization considers the following major factors influencing employee retention i.e., *Superior-Subordinate relations, Learning and development efforts, Organizational Values, feedback mechanism at the organization and the overall management policy.*

The company conducts several employee engagement activities as a part of employee retention like *regular town-halls & leadership talks, strong focus on employee development, surveys and action plans, involvement of employee in organizational goals and conducting several celebration and events.*

The company believes that better employee Acquisition, Retention and Engagement may be achieved by framing policy based on current pulse of employees including business managers in each element. Also keeping eye on external market and in that context framing policy which will be robust and flexible for change at a reasonable interval shall help further. To sustain the growth of the organization and the employees the policies should be framed on the basis of the existing needs and demands in the Market.

Source: http://www.vapi.bayer.in, Personal Interview with Mr. Sushil Patel, Head HR, Bayer CropScience, Vapi

RECOMMENDATIONS

Employee Acquisition, Retention & Engagement have been talked about concerns for the Organisations. The Authors as part of the recommendations have suggested the following aspects to be considered as support towards the Employee Acquisition, Retention & Engagement activities at the Organisations. Table No. 1 talks about the recommendary thoughts on Employee Acquisitions, Retention and Engagement. There are several such practices that organisational culture accommodates with respect to recruitment policy, retention & engagement policies. A few practices that may be value add to the existing efforts are listed below:

Table No-1: Recommendary thoughts on Employee Acquisition, Retention & Engagement

Employee Acquisition	Employee Retention	Employee Engagement
▶ Leveraging recruiting technology ▶ Brand Building ▶ Artificial intelligence and machine learning to make efficient outreach ▶ Candidate Community	▶ Developing an effective on boarding program ▶ Work redesigning ▶ Peer Group Analysis ▶ Employee Empowerment	▶ Creating a well defined job profile and career path ▶ Engaging with Literary Activities – Case Writing, News Letter etc. ▶ Talent Hunts ▶ Academic Focus

CONCLUSION

The study leads to the conclusion that the essentiality of Employee Acquisition, Retention and Engagement have been witnessed at Organisations and their significance is unquestionable. Every Organisation takes conscious effort is acquiring the employees, retaining them and engaging them. All these efforts are with a common motto of economic well being of the Organisation. Economically better Organisations have further prospects to develop the state of affairs for the Employees and it eventually leads to better employee satisfaction. The Authors have contributed their concluding remarks for the paper through the observations gathered at the various companies selected for the study. The key Strategies of the Organisations pertaining to the Acquisition, Retention and Engagement of Employees is presented in Table No. 2:

Table No-2: Key Strategies of the Organisations pertaining to the Acquisition, Retention and Engagement of Employees

Name of the Company	Key Acquisition Strategy	Key Retention Strategy	Key Engagement Strategy
Leading Conductor Manufacturing unit, Silvassa, DNH	▶ Right Fit	▶ Communication Channel, ▶ Leadership Style, ▶ Learning & Development, ▶ Employee Welfare, ▶ Organizational Values	▶ Employee Survey ▶ Employee Calendar
Pioneer Group, Silvassa, DNH	▶ Stability Factor	▶ Protecting Human Values	▶ Multi tasking approach, ▶ Knowledge up gradation measures, ▶ Develop Team spirit
Atul Limited, Atul, Gujarat	▶ Right fit ▶ Employee poaching	▶ Superior-subordinate relations, ▶ L&D Efforts, ▶ Leadership Style, ▶ Compensation policy, ▶ Employee Welfare, ▶ Management policy	▶ Atul day ▶ Blood donation camp ▶ Food festival ▶ Wellness activities like yoga, trail run etc.

Bayer Crop Science, Vapi, Gujarat	▶ Right Fit ▶ Right cultural fit	▶ Superior-subordinate relations, ▶ Learning & Development Efforts, ▶ Feedback mechanism at the organization, ▶ Overall management policy	▶ Town halls and leadership talks ▶ Strong focus on employees development ▶ Surveys and action plans, ▶ Involvement of employees in organizational goals, ▶ Conducting several celebration and events
Huhtamaki – PPL, Silvassa, DNH	▶ Right talent acquisition ▶ Role specific hiring	▶ Learning & Development Efforts, ▶ Organizational values ▶ Leadership style	▶ Family visit for employees, ▶ Department wise dinner programme ▶ Recreational activities like Sports and festive days

FUTURE SCOPE OF THE STUDY

The present study refers primarily to the conceptual base of the theme for the study i.e., Employee Acquisition, Retention and Engagement. This paper adds to the existing literature pertaining to the theme of the study. The primary data approach in this paper is limited to the Interviews & Observations by the authors. The next leap for such intent would be extensive primary data collection, gathered from the Organisations with live survey on the Acquisition patterns across the months in a year, Retention efforts across the months in a year and the year long engagement activities. This experimental study shall fetch further results than just conceptual clarity and Organisational examples. Academia & Organisations at large will be major beneficiaries of such projects.

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A STUDY ON FUNDAMENTAL ANALYSIS WITH REFERENCE TO FILATEX INDIA LIMITED

Khadiza Khan[1] and Natasha Nunes[2]
Student[1] and Assistant Professor[2], SSR IMR, Silvassa

ABSTRACT
Fundamental analysis is a method of evaluating a security in an attempt to assess its intrinsic value, by examining related economic, financial, and other qualitative and quantitative factors. Fundamental analysts study anything that can affect the security's value, including macroeconomic factors (e.g. economy and industry conditions) and microeconomic factors (e.g. financial conditions and company management).

The major objective was to study the effect of current economic and industry situations on the future prospects for the organisation and to estimate the intrinsic value of the company. This analysis is based on the EIC framework, ratio analysis. The study is based on analytical research method. The research is done with the help of primary and secondary data where primary data was limited to the interactions with the officials at the company and the secondary data includes balance sheet, profit and loss account, and company website.The paper of Fundamental Analysis is based on the period from 2014 to September 2018.

INTRODUCTION
Fundamental analysis is a method of evaluating a security in an attempt to assess its intrinsic value, by examining related economic, financial, and other qualitative and quantitative factors. Fundamental analysts study anything that can affect the security's value, including macroeconomic factors (e.g. economy and industry conditions) and microeconomic factors (e.g. financial conditions and company management). The end goal of fundamental analysis is to produce a quantitative value that an investor can compare with a security's current price, thus indicating whether the security is undervalued or overvalued. To determine the intrinsic value of an equity stock, the security analyst must forecast the earnings expected from the stock and choose a discount rate which reflects the riskiness of the stock. This is what is involved in a fundamental analysis, perhaps the most popular method used by the investment professionals. The prospects of various industries, in turn, are largely influenced by the developments in the macro economy. Researchers have found that stock price changes can be attributed to the various factors, viz., Economy-wide factors: 30-35%, Industry factors: 15-20%, Company factors: 30-35% and other factors: 15-25%. Based on the above evidence, a commonly advocated procedure of fundamental analysis, which is a three-step examination, calls for: a) Understanding the macro-economic environment and developments. B) Analyzing the prospects of the industry to which the firm belongs c) Assessing the projected performance of the company.

FUNDAMENTAL ANALYSIS DEFINITION
Fundamental analysis is a stock valuation method that uses financial and economic analysis to predict the movement of stock prices. The fundamental information that is analyzed can include a company's financial reports, and non-financial information such as estimates of the growth of demand for products sold by the company, industry comparisons, and economy-wide changes in government policies, etc.

GENERAL STRATEGY
To a fundamentalist, the market price of a stock tends to move towards its "real value" or "intrinsic value". If the "intrinsic/real value" of a stock is above the current market price, the investor would purchase the stock because he knows that the stock price would rise and move towards its intrinsic value. If the intrinsic value of a stock was below the market price, the investor would sell the stock because he knows that the stock price is going to fall and come closer to its intrinsic value. All this seems simple. Now, the next obvious question is how to find out what the intrinsic value of a company is? Once we know this, we will be able compare this price to the market price of the company and decide whether we want to buy the stock or sell. To start finding out the intrinsic value, the fundamentalist analyzer makes an examination of the current and future overall health of the economy as a whole.

STATEMENT OF THE PROBLEM
EIC framework consists of the economic-industry-company analysis where company analysis is the last leg in the sequence. It may be organized into two parts: A) A study of financials; B) A study of other factors. However, the researcher has focused on both the factors in the study.

There are two principal methods of equity valuation, viz., the dividend discount model and the earnings multiplier model. In practice, the earnings multiplier method is the most popular method. The key questions to be addressed in applying the earnings multiplier approach are: What is the expected EPS for the forthcoming

year? What is the reasonable P/E ratio given the growth prospects, risk exposure, and other characteristics of the firm?

To answer these questions, investment analysts starts with a historical analysis of earnings, growth, risk and valuation and use this as a foundation for developing the forecasts required for estimating the intrinsic value. While earnings are important, by themselves, they don't tell us anything about how the market values the stock. To begin building a picture of how the stock is valued, one need to use some fundamental analysis tool.

OBJECTIVES OF THE STUDY

1. To study the current economic and industry scenario of textile industry.

2. To conduct the company analysis & find out the intrinsic value of the company using earnings multiplier method.

RESEARCH METHODOLOGY

Research Design: In view of the objectives of the study listed above, the researcher has selected the Descriptive and Analytical research design.

Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual or of a group. Studies often involve the description of the extent of association between two or more variables. It is often helpful for predictive purpose.

In analytical research, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

Sources of Data: To achieve aforesaid objective, the information for this report has been collected through the primary and secondary sources. The collection of the Primary Data was limited to the interactions with the officials at the company. The secondary source explored for this research includes; Reference books, Company website, Annual reports, Journals, Balance sheet of the Filatex India Ltd., Profit and loss account.

Tools of Analysis: Various tools used for analyzing Fundamental decisions are bifurcated as:

- **Financial Tools:**The EIC framework**,** Ratios Analysis

- **Statistical Tools:**Compound annual growth rate (CAGR), Average mean

Scope of the Study: Scope means the defined area in which the study is conducted. The research is based on fundamental analysis by using tools like EIC framework or analysis which includes Ratio analysis were used to measure profitability and market price of the share and also to arrive at various objectives of the study. Thus, on the whole, the purpose of the research is to analyze the past and present performance of Filatex India Ltd. on various financial areas like return on equity, book value of the share, growth rate in various business factors, and the intrinsic value of the share, etc.

Period of the study: The study is based for a period of March 2014 to September 2018

Limitations of the Study: The study was confined to the limitation that analysis is done on the basis of data available as per the company's disclosure policy.

SECTION 1: ECONOMIC ANALYSIS

Chart No-1: GDP   Source: www.tradingeconomics.com

The Indian economy grew 8.2 percent year-on-year in the first quarter of 2018-19 financial year ending June 30, above 7.7 percent in the previous three months and beating market expectations of 7.6 percent. It is the strongest growth rate since the first quarter of 2016. GDP Annual Growth Rate in India averaged 6.16 percent from 1951 until 2018, reaching an all time high of 11.40 percent in the first quarter of 2010 and a record low of -5.20 percent in the fourth quarter of 1979.

Chart No-2: Inflation rate   Source: www.tradingeconomics.com

India' annual inflation rate eased to 4.17 percent in July 2018 from a downwardly revised 4.92 percent in the previous month, and below market expectations of 4.51 percent. Still, inflation remained above the central bank's medium-term target of 4 percent for nine consecutive months. Inflation Rate in India averaged 6.52 percent from 2012 until 2018, reaching an all time high of 12.17 percent in November of 2013 and a record low of 1.54 percent in June of 2017.

Interest Rate in India is expected to be 6.50 percent by the end of this quarter, according to Trading Economics global macro models and analysts expectations. Looking forward, we estimate Interest Rate in India to stand at 6.75 in 12 months time.

Chart No-3: **Interest rate**   Source: www.tradingeconomics.com

SECTION 2: INDUSTRY ANALYSIS

Chart No-4: CAGR of Indian textile industry.   Source: www.ibef.com

Textile plays a major role in the Indian Economy

The size of India's textile market as of July 2017 was around US$ 150 billion, which is expected to touch US$ 250 billion market by 2019, growing at a CAGR of 13.58 per cent between 2009-2019.

Government Policies

The Cabinet Committee on Economic Affairs (CCEA), Government of India has approved a new skill development scheme named 'Scheme for Capacity Building in Textile Sector (SCBTS)' with an outlay of Rs 1,300 crore (US$ 202.9 million) from 2017-18 to 2019-20.

Table No-1: SWOT ANALYSIS

STRENGTHS	WEAKNESSES
- Availability of low cost labour. - Abundant availability of raw material in India. - Skilled manpower at very low prices. - Self-reliant industry. - Rich Heritage. - Flourishing domestic market. - Remarkable performance in spinning sector. - Increasing export of cotton yarns to other countries. - Large varieties of cotton fibres.	- Less attention on man power training. - Very low investment on R&D. - More dependence on cotton. - Rigid or inflexible labour laws. - Technology obsolescence. - More average time for the supply chain as compared to other nations. - Expenses like indirect taxes, power and interests are comparatively higher in India.
OPPORTUNITIES	THREATS
- Growing industry. - Product development. - Diversification. - Opportunity in High Value Items. - Specialized and smart fabrics to be introduced, Integration of Information Technology. - Elimination of quotas. - Improving brand value. - Investment in design centres and investment labs. - Maintaining the present current growth.	- Threat of increase in sales of products by Chinese Companies in the global market. - Threat from low cost producing countries. - Decreasing Fashion Cycle. - Phasing out of Quotas. - Geographical distance from major global markets. - Many big players are entering into the textile industry. - Losing share in global textile market.

SECTION 3: COMPANY ANALYSIS

a. RETURN ON EQUITY

Table No: - 2 : Return on equity						
Year	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**Mar 18 – Sep18**
Profit/Loss For The Period (Rs. In crore)	8.09	9.60	26.27	41.20	59.78	40.39
Total Shareholders' Funds (Rs. In Crore)	154.42	170.33	209.54	289.55	385.50	382.98
Return on Equity(%)	**5.24**	**5.64**	**12.54**	**14.23**	**15.51**	**10.55**

✓ The table shows the increasing trend of return on equity.

✓ From the above table, it is seen that the return on equity was 5.24% in the year 2014, further it increased to 5.64% in the year 2015. In the year 2016 it increased to 12.54%. Following the increasing trend it was recorded at 14.23% in 2017 and then 15.51% in the year 2018 and in September 2018 it is recorded at 10.55%.

Source: Compiled and calculated from the financial statement

b. BOOK VALUE PER SHARE

Table No: - 3 : Book Value Per Share						
Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mar 18 - Sep 18
Total Shareholders' Funds (Rs. In crore)	154.42	170.33	209.54	289.55	385.50	382.98
No. of shares outstanding (Rs. In crore)	2.82	3.20	3.20	4.35	4.35	4.35
Book Value Per Share(Rs.)	**54.68**	**53.23**	**65.48**	**66.56**	**88.62**	**88.04**

Source: Compiled and calculated from the financial statement

- ✓ The table shows the fluctuations of book value per share.
- ✓ In the year 2014 book value per share was 54.68 Rs. per share, further in the year 2015 it decreased to 53.23 Rs. After 2015, it followed the increasing trend and was reported at the rate of Rs. 88.62 per share in the year

c. EARNINGS PER SHARE

Table No: - 4 : Earnings Per Share						
Year	2013-14	2014-15	2015-16	2016-17	2017-18	Mar 18 - Sep 18
Profit/Loss For The Period (Rs. In crore)	8.09	9.60	26.27	41.20	59.78	40.39
No. of shares outstanding (Rs. In crore)	2.82	3.20	3.20	4.35	4.35	4.35
Earnings Per Share (Rs.)	**2.86**	**3.00**	**8.21**	**9.47**	**13.74**	**9.29**

Source: Compiled and calculated from the financial statement

- ✓ The table shows the increasing trend of earnings per share.
- ✓ From the table, it is seen that the earnings per share was Rs. 2.86 in the year 2014, further it increased to 3 Rs. per share in the year 2015. In the year 2016 it increased to Rs. 8.21 which is high in comparison to the previous years. Further it increased uptoRs. 13.74 per share in 2018 and in September 2018 it reached to Rs. 9.29.

d. GROWTH PERFORMANCE

Table No: - 5 : Growth Performance			
Year	Return On Equity(%)	Book-Value Per Share (Rs)	Earnings Per Share (Rs)
2013-14	5.24	54.68	2.86
2014-15	5.64	53.23	3.00
2015-16	12.54	65.48	8.21
2016-17	14.23	66.56	9.47
2017-18	15.51	88.62	13.74
Mar 18 - Sep 18	10.55	88.04	9.29

Source: Compiled on the basis of table no: 6,7 and 8

Interpretation

- The return on equity was recorded to be increasing consistently over the period of study, which shows that the company is using the investments well to generate earnings growth.

- The book value per share of the company is also in a growing phase.

- The earnings per share are also in increasing trend of the company, which indicates that the company is generating profit and so it is doing well financially.

e. COMPOUND ANNUAL GROWTH RATE

NO.	FACTOR	CAGR	CAGR (%)
Table No: - 6 : CAGR OF VARIOUS FACTORS		
1	**CAGR of Sales**	-0.0440	**-4.40**
2	**CAGR of Earnings per share**	0.2653	**26.53**
3	**CAGR of Book value per share**	0.0999	**9.99**
4	**CAGR of Net worth**	0.1503	**15.03**

Source: Compiled and calculated from the financial statement

Interpretation

1. The compound annual growth rate in sales was recorded at -4.40%

2. The compound annual growth rate in EPS was recorded at 26.53 percent, which shows the better growth and stability of the company over the financial years starting from 2013-14 to September 2018, which also suggests that the company has products or services in strong demand.

3. Book value per share grew at the CAGR of 9.99 percent.

4. The net worth of the company grew at the CAGR of 15.03 in September 2018 from the base year 2014, which indicates that the company is performing well.

f. Calculation of Average Retention Ratio & Average Return on Equity and sustainable growth rate

Table No: - 7 Average Retention Ratio & Average Return on Equity

Year	Retention Ratio	Return On Equity
2013-14	1.00	5.24
2014-15	1.00	5.64
2015-16	1.00	12.54
2016-17	1.00	14.23
2017-18	1.00	15.51
Mar 18 - Sep 18	1.00	10.55
Average	**1.00**	**10.62**

Table No: - 8: Sustainable Growth Rate	
Average Retention Ratio	1.00
Average Return On Equity	10.62
Sustainable Growth Rate	10.62

The average retention ratio of the company was at 1.00 (100 percent) for the period starting from 2014 to September 2018, which refers that the 100% of net income is retained to grow the business.

Source: Compiled and calculated from the financial statement

RISK EXPOSURE

g. BETA

Table No: - 9 : Beta	
Co-Variance	11.41
Variance	6.67
BETA	**1.71**

- ✓ The risk of a stock is denoted by its beta, which measures how sensitive are the returns on the stock to variations in the market return. According to the above calculation, the beta of Filatex India Ltd. was 1.71.
- ✓ Since the beta of the company comes out to be greater than 1, it indicates that the portfolio will move in the same direction as the market, with a higher magnitude, and is very sensitive to systematic risk.

Source: Compiled and calculated from company ledger.

h. VOLATILITY

Table No: - 10 : Calculation Of Volatility	
Range Of Return On Equity	10.27 percent
Average Return On Equity	10.62 percent
VOLATILITY	**0.97**

Source: Compiled and calculated on the basis of table no: 11

Interpretation

The volatility of return of equity of Filatex India Ltd. was 0.97, which means that the price of the security can change dramatically over a short time period in either direction.

VALUATION MULTIPLES
i. PRICE TO EARNINGS RATIO

Table No: - 11 : Price To Earnings Ratio (Prospective)			
Year	Price Per Share At The Beginning Of The Year (Rs)	Earnings Per Share (Rs)	P/E Ratio
2013-14	2.60	2.86	0.91
2014-15	5.82	3.00	1.94
2015-16	7.80	8.21	0.95
2016-17	24.32	9.47	2.57
2017-18	36.08	13.74	2.63
Mar 18 - Sep 18	32.57	1.86	17.51

Source: Compiled and calculated from the financial statement

Interpretation

The data provided in the above table relating to the price-earnings ratios shows that the price-earnings multiple of the company rose from 0.91 times in 2014 to 1.94 times in 2015. Further, it declined to 0.95 times in 2016 and again increased in 2016 to 2.57 times. Finally, it was recorded at 2.63 times in 2018 and increased to 17.51 times in September 2018.

Table No: - 12 : Price To Earnings Ratio (Retrospective)			
Year	Price Per Share At The End Of The Year (Rs)	Earnings Per Share (Rs)	P/E Ratio
2013-14	2.69	2.86	0.94
2014-15	5.00	3.00	1.67
2015-16	7.86	8.21	0.96
2016-17	23.80	9.47	2.51
2017-18	32.57	13.74	2.37
Sep 18	43.55	1.86	23.41

Source: Compiled and calculated from the financial statement

Interpretation

The data provided in the above table relating to the price-earnings ratios shows that the price-earnings multiple of the company rose from 0.94 times in 2014 to 1.67 times in 2015. Further, it declined to 0.96 times in 2016 and again increased in 2016 to 2.51 times. Finally, it was recorded at 2.37 times in 2018 and increased to 23.41 times in September 2018.

j. PRICE TO BOOK VALUE RATIO

Table 13 : Price To Book Value Ratio (Prospective)			
Year	Price Per Share At The Beginning Of The Year (Rs)	Book Value Per Share (Rs)	P/B Ratio
2014	2.60	54.68	0.05
2015	5.82	53.23	0.11
2016	7.80	65.48	0.12
2017	24.32	66.56	0.37
2018	36.08	88.62	0.41
Sep 2018	32.57	88.04	0.37

Source: Compiled and calculated from the financial statement

Interpretation

The data provided in the above table relating to the price to the book value ratio is saying that the price-to-value multiple of the company rose from 0.05 times in 2014 to 0.11 times in 2015. Finally, it was recorded at 0.41 times in 2018 and decreased to 0.37 times in September 2018.

Table 14 : Price To Book Value Ratio (Retrospective)			
Year	Price Per Share At The End Of The Year (Rs)	Book Value Per Share (Rs)	P/B Ratio
2014	2.69	54.68	0.05
2015	5.00	53.23	0.09
2016	7.86	65.48	0.12
2017	23.80	66.56	0.36
2018	32.57	88.62	0.37
Sep 18	43.55	88.04	0.49

Source: Compiled and calculated from the financial statement

Interpretation

The data provided in the above table relating to the price to the book value ratio is saying that the price-to-value multiple of the company rose from 0.05 times in 2014 to 0.09 times in 2015. Further, it increased to 0.12 times in 2015 which again increased to 0.36 in 2017. Finally, it was recorded at 0.37 times in 2018 and in September 2018 it further increased to 0.49 times.

k. ESTIMATION OF EPS FOR THE YEAR 2018-19

Table No-15: Estimated increase for 2019

Particulars	2017-18	Estimated Increase for 2019	2018-19 (Projected)
Net Sales	1422.54	341.41	1763.95
Less. Operating Expenses	1323.24	360.98	1684.22
Profit Before Taxation	61.78	-	79.73
Less. Taxes	21.39	4.77	26.16
Profit After Taxes	40.39		53.57
No. Of Equity Shares	4.35	-	4.35
Earnings Per Share	9.29	-	12.31

Source: Compiled and calculated from the financial statement

Interpretation

- The data analysis provided in the above table shows that the projected Earnings per share for 2019 is Rs. 12.31

- It was calculated on the basis of certain assumptions, viz., net sales were expected to increase by 24 percent, operating expenses were expected to increase by 22 percent and taxes were expected to increase by 18 percent in the current financial year as per the estimates of the company.

l. REQUIRED RETURN ON EQUITY

Required return on equity = risk-free return + (beta of equity) * (expected market   premium risk)

Table No:- 16 : Required Return on Equity	
Risk Free Return	6.25
Beta Of Equity	1.71
Expected Market Risk Premium	9.00
Required Return On Equity	**21.64**

Source: Compiled and calculated from company ledger.

Interpretation

- The risk free rate of return is 6.25 percent. It is the risk free rate of return of 364 days Government T-bills.

- The beta of Filatex India Ltd. is 1.71; and the expected market risk premium is 9 percent.

- Given these information/assumptions by the organization, the required return on equity stock of Filatex India Ltd., is 21.64 percent.

m. EXPECTED GROWTH RATE

Table No: - 17 : Expected Growth Rate	
Retention Ratio	1.00
Required Return On Equity	21.64
Expected Growth Rate	21.64

Source: Compiled and calculated on the basis of table no: 21

Interpretation

The expected growth rate may be set equal to the product of retention ratio and the return on equity for the study period starting from the year 2014 to September 2018, works out to be 21.64%

n. Historical Analysis

- **Average P/E Ratio**

Table 18 : Historical Analysis	
YEAR	P/E ratio
2013-14	0.91
2014-15	1.94
2015-16	0.95
2016-17	2.57
2017-18	2.63
Mar 18 - Sep 18	18.49
AVERAGE P/E RATIO	**4.58**

- ✓ The table shows the fluctuating trend of PE ratio.
- ✓ The average PE ratio of the company comes out to be 4.58 times for the financial year 2013-14 to September-18.

Source: Compiled and calculated on the basis of table no: 15

o. Determination Of Intrinsic Value

$$= \text{Projected EPS} * \text{Average P/E Ratio}$$

$$= 15.58 * 4.42$$

$$= Rs. 56.41$$

Interpretation

- In the present study, the intrinsic value of Rs. 56.41 was estimated, and intrinsic value range of Rs. 32.32 to 64.10 was identified.

- The investing community follows the following decision rule:

If the share price is less than Rs. 32.32 – Buy the stocks of this company, if the share price is in between 32.32 Rs. and 64.10 Rs. – Hold the stocks, and if the share price is more than Rs. 64.10 – Sell the stocks.

FINDINGS

According to the Economic and Industry analysis:

- The Indian economy grew at an impressive 8.2 percent in the first quarter of 2018-19. India's annual inflation rate eased to 4.17 percent in July 2018. Stock prices react favorably to the low inflation and increasing GDP.

- The Indian Textile industry adds 14% to the industrial production and 8% to the GDP of India with a CAGR of 13.58%. It provides employment to 38 million people.

- The government's focused and favorable policies and schemes support the steady growth of the sector. Through the systematic SWOT analysis of the textile industry, it indicates that the strength and opportunities are better and stronger and hence the company has the potential to grow more in the near future.

According to the company analysis

- The return on equity is in the increasing trend over the study period i.e, from 2013-14 to Sept 18, where it was minimum in the base year 2014 at 5.24% and it was recorded the maximum in the year 2018 at 15.51%.

- The fluctuating trend of book value per share was analyzed, where the book value per share of the company was lowest in the year 2015 at Rs. 53.23 and it was increased in the further years and it was maximum in the year 2018 at the rate of Rs. 88.62.

- Earnings per share of the company were increasing over the years. It was at the lowest rate in the base year 2014 at Rs. 2.86 and it was at the highest rate in the year 2018 at Rs. 13.74.

- The compound annual growth rate of sales is -4.40% for the 5 year. The compound annual growth rate in Earnings per share is 26.53%. The compound annual growth rate in book value per share is 9.99% and the compound annual growth rate of net worth is 15.30%.

- The sustainable growth rate of the company, calculated on the basis of retention ratio and return on equity, was recorded at 10.62 percent, which means that the company can safely grow at a rate of 10.62% using its own revenue and remain self-sustaining.

- The projected Earnings per share for 2019 is Rs. 12.31. It was calculated on the basis of certain assumptions, viz., net sales were expected to increase by 21 percent, operating expenses were expected to increase by 15 percent and taxes were expected to increase by 14 percent in the current financial year.

- The risk free rate of return is 6.25 percent. The beta of Filatex India Ltd. is 1.71; and the expected market risk premium is 9 percent. Given these information/assumptions by the organization, the required return on equity stock of Filatex India Ltd., is 21.64 percent.

- The expected growth rate for the study period starting from the year 2014 to Sept 2018, works out to be 21.64.

- The P/E ratio of the company was in the fluctuating trend, where the average P/E ratio of the company comes out to be 4.58 over the study period of financial year 2013-14 to Sept 18.

- In the present study, the intrinsic value of Rs. 56.41 was estimated, and intrinsic value range of Rs. 32.32 to 64.10 was identified.

CONCLUSION

An economy-industry-company analysis approach has been followed under Fundamental Analysis which covers the impact of inflation, interest rates, GDP etc. on Textile Industry. The Industry Analysis has been done with the help of SWOT analysis of Textile Sector. By analyzing the Textile Industry with the help of fundamental analysis, it has been revealed that this industry has a lot of potential to grow. Wherein Filatex India Limited can also take the benefit of growing market.

For Company Analysis as a part of Fundamental tools researcher have undergone with the analysis of Filatex India Ltd. along with the help of ratio analysis, estimation of the growth performance, determining P/E ratio, the intrinsic value and value range of the company. The fundamental aspect consists of financial and Non-Financial analysis of the company.

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A STUDY ON GOODS AND SERVICE TAX (GST) THE MOST PROMINENT REFORM IN INDIAN TAX REGIME

Prof. Ankit Gunvantrai Joshi

Lecturer, Department of Business Administration, Shree G. K. & C. K. Bosamia College, Jetpur

ABSTRACT

GST also known as the Goods and Services Tax is defined as the giant indirect tax structure designed to support and enhances the economic growth of a country. More than 150 countries have already implemented GST. However, the idea of GST in India was suggested by Vajpayee Government in 2000 and the constitutional amendment for the same was passed by the Loksabha on 6th May 2015 and was to be ratified by the Rajyasabha. The introduction of the Goods and Services Tax will be the most remarkable step in the field of indirect tax reforms in India. By integrating a large number of Central and State taxes into a single tax, GST is expected to considerably ease double taxation and make taxation overall easy for the industries. Ultimately, most significant benefit to customer in terms of reduction in the overall tax burden on goods and services. Introduction of GST will also make Indian products competitive in the domestic and international markets. Last but not least, the GST, because of its transparent character, will be easier to administer. However, there had been a huge hue and cry against its implementation. After the enactment of various GST laws, finally GST - Goods and Services Tax was launched all over India with effect from 1 July 2017. An effort has been made in this article to study the brief history, implementation of GST Bill and advantages and limitations of GST bill in context of Indian Economy.

Keywords: CGST, GST Bill, IGST, SGST, Tax

INTRODUCTION

The Goods and Services Tax (GST) is defined as the giant tax structure by supporting and enhancing the economic growth of a country. GST is a comprehensive tax levy on manufacturing, sale and consumption of goods and services at a national level. The Goods and Services Tax Bill or GST Bill, also referred to as The Constitution (One Hundred and Twenty-Second Amendment) Bill, 2014, initiates a Value added Tax to be implemented on a national level in India. GST will be an indirect tax at all the stages of production to bring about uniformity in the system.

On bringing GST into practice, there would be integration of Central and State taxes into a single tax payment. It would also enhance the position of India in both, domestic as well as international market. At the consumer level, GST would reduce the overall tax burden, which is currently estimated at 25-30%. Under this system, the consumer pays the final tax but an efficient input tax credit system ensures that there is no cascading of taxes-tax on tax paid on inputs that go into manufacture of goods One of the main objective of Goods & Service Tax(GST) would be to eliminate the doubly taxation i.e. cascading effects of taxes on production and distribution cost of goods and services. The exclusion of cascading effects i.e. tax on tax till the level of final consumers will significantly improve the competitiveness of original goods and services in market which leads to beneficial impact to the GDP growth of the country. Introduction of a GST to replace the existing multiple tax structures of Centre and State taxes are not only desirable but also imperative. Integration of various taxes into a GST system would make it possible to give full credit for inputs taxes collected. GST, being a destination-based consumption tax based on VAT principle.

OBJECTIVES OF THE STUDY:

- To study the brief history of GST worldwide and in India.

- To understand the concept of GST and components of GST Bill in context of Indian economy.

- To understand main advantages and limitations of GST Bill.

- To assess the impacts of GST on different sector.

SCOPE OF STUDY

- This study will be helpful to business men in knowing the GST Bill in India economy.

- This study provide the base to researchers and scholars who want know GST Bill, its impacts on Indian economy and who wants to conduct the further research in this area.

- This study will be helpful to those who want to know the impacts of GST Bill on different sectors so they can assess impacts on their sectors and can compare it.

- Readers can get idea about not only the advantages and limitations of GST but also can compare the old tax regime and new tax regime.

- Common man can also check how they are affected by GST.

METHODOLOGY

The study is a descriptive type in nature. Secondary data has used for the study. Secondary data is collected from library, text books, and journals, articles from news papers and from relevant websites available on internet. By using that information I am trying to come up with some assumptions and recommendations.

BRIEF HISTORY

France was the first country to introduce GST in 1954. Almost 150 countries have introduced GST in one or the other form since now. Most of the countries have a unified GST system. Brazil and Canada follow a dual system with reference to India is going to introduce. In China, GST applies only to goods and the provision of repairs, replacement and processing services. GST rates of some countries are as follows:

Country	Rate of GST
Australia	10%
France	19.6%
Canada	5%
Germany	19%
Japan	5%
Singapore	7%
New Zealand	15%

Now let's have a quick look on brief history of GST Bill implementation. Following points will highlight the brief history of GST Bill in India:

- 1999: A single common "Goods and Services Tax (GST)" was proposed and given a go-ahead in 1999 during a meeting between the Prime Minister Atal Bihari Vajpayee and his economic advisory panel, which included three former RBI governors IG Patel, Bimal Jalan and C Rangrajan.

- 2000: PM Vajpayee set up a committee headed by the Finance Minister of West Bengal, Asim Dasgupta to draft GST law.

- 2004: A task force concludes GST must be implemented to improve the current tax structure.

- 2006: Finance Minister P Chidambaram proposes GST introduction from April 1 2010.

- 2007: CST to phase out. Rates reduced from 4% to 3%.

- 2008: EC finalises dual GST structure to have separate levy, legislation.

- 2010: Project to computerise commercial taxes launched but GST implementation postponed.

- 2011: Constitution amendment bill to enable GST law introduced.

- 2012: Standing committee begins discussion on GST but stalled it over clause 279B.

- 2013: Standing committee tables its reports on GST

- 2014: GST Bill reintroduced in Parliament by Finance Minister.

- 2015: GST Bill passed in Lok Sabha but not in Rajya Sabha.

- 2016: Amended Model GST law passed in both houses. President Pranab Mukherjee gave assent, paving way for GST.

- 2017: Four supplementary GST Bill passed in Lok Sabha and approved by Cabinet. Rajya Sabha passed four supplementary GST Bills. And Final GST was launched in July 1st 2017.

What is GST?

'G' – Goods

'S' – Services

'T' – Tax

"Goods and Service Tax (GST) is a comprehensive tax **levy on manufacture, sale and consumption of goods and service** at a national level under which no distinction is made between goods and services for levying of tax. It will mostly **substitute all indirect taxes** levied on goods and services by the Central and State governments in India.

GST is a tax on goods and services under which every person is liable to pay tax on his output and is entitled to get input tax credit (ITC) on the tax paid on its inputs(therefore a tax on value addition only) and ultimately the final consumer shall bear the tax".

GST or Goods and Service Tax is common tax system proposed by the government. As the name suggest it is a common tax for Goods and Services. In simple words today we are paying multiple taxes such as excise duty, custom duty, value added tax, octroi, service tax etc. After implementation of GST all these taxes will be substituted by a single tax which is called as GST. GST rate is expected to be 18-20% which is lesser than tax burden of indirect taxes.
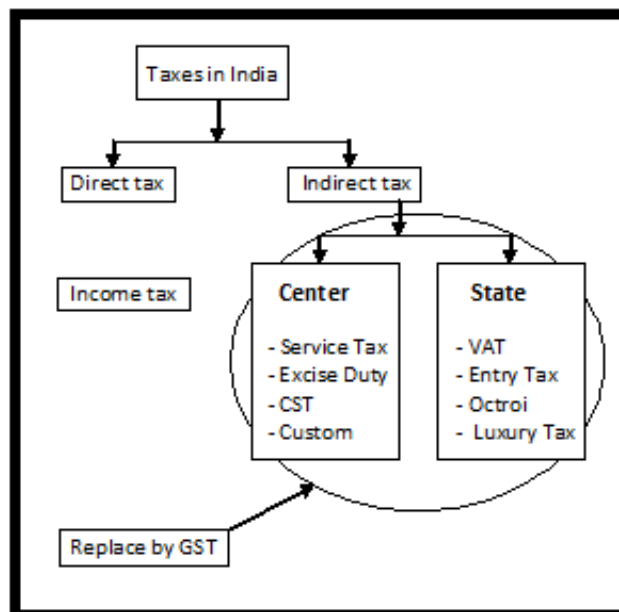
Major components of GST:
There are 3 taxes applicable under this system: CGST, SGST & IGST.

- CGST: Collected by the Central Government on an intra-state sale (Eg: transaction happening within Gujarat)

- SGST: Collected by the State Government on an intra-state sale (Eg: transaction happening within Gujarat)

- IGST: Collected by the Central Government for inter-state sale (Eg: Gujarat to Maharashtra)

In most cases, the tax structure under the new regime will be as follows:

Transaction	Old Regime	New regime	
Sale within the state	VAT + Central Excise/Service tax	CGST+SGST	Revenue will be shared equally between the Centre and the State
Sale to another state	Central sales tax + Excise/Service tax	IGST	There will only be one type of tax (central) in case of inter-state sales. The Centre will then share the IGST revenue based on the destination of goods.

Example
Suppose, a dealer sells goods to consumer in Gujarat worth Rs. 100000. The GST rate on the good is 12%. This rate comprises of CGST at 6% and SGST at 6%. The dealer has to collect Rs. 12000 as GST. Rs. 6000 will go to the Central Government and Rs. 6000 will go to the Gujarat government as the sale is within the state.

Now assume for a while, if the same dealer in Gujarat sells the good to a dealer in Punjab worth Rs. 100000. The rate is 18% comprising of only IGST. In such cases, the dealer has to charge Rs. 18000 as IGST. This revenue will go the Central Government.

Advantages

Removal of numerous Taxes

The biggest benefit of GST is an removal of numerous indirect taxes. All taxes like excise, octroi, sales tax, CENVAT, Service tax, turnover tax etc will be replaced by GST and all that will fall under common tax called as GST.

Tax Credit Benefit

GST will be applicable at all stages from manufacturing to consumption. GST will provide tax credit benefit at every stage in chain. In past at every stage margin was added and tax was paid on whole amount, in GST you will have tax credit benefit and tax will be paid on margin amount only. For example if there is a tax paid on Rs 50000 at 15% at the first stage then the tax will be Rs 7500. During the next stage when the same goods are sold by adding margin of Rs 20,000 at Rs 70000 then the tax would be Rs 10500 but here tax credit of Rs 7500 available so the actual tax at that stage will come to just Rs 3000.

Removal of Cascading Effect (i.e., tax on tax)

GST will be applicable at all stages from manufacturing to consumption. GST will provide tax credit benefit at every stage in chain. Today at every stage margin is added and tax is paid on whole amount, in GST you will have tax credit benefit and tax will be paid on margin amount only. It will reduce cascading effect of tax thereby reducing cost of product.

Cascading tax effect can be best described as 'Tax on Tax'. Let us take this example to understand what Tax on Tax is:

Old tax regime

A consultant offering services for say, Rs 50,000 and charged a service tax of 15% (Rs 15% of 50,000 is Rs 7,500).

Then say, he would buy office supplies for Rs. 20,000 paying 5% as VAT (Rs 20,000 *5% = Rs 1,000).

He had to pay Rs 7,500 output service tax without getting any deduction of Rs 1,000 VAT already paid on stationery. His total outflow is Rs 8,500.

GST regime

GST on service of Rs. 50000 @ 18%	9000
Less: GST on office supplies (5% 20000)	1000
Net GST to pay	8000

Saving more Money

For a common man, GST applicability means the removal of double charging in the system. This will reduce the price of goods and services & help common man will be able to save more money. It is expected that price of FMCG products, small cars, cinema tickets, electrical wires etc is expected to reduce.

Ease of doing business

GST will bring one country one tax concept. This will prevent unhealthy competition among states. It will be beneficial to do interstate business.

Documentations and Return Filing will be Easy

For a businessman, GST will be a boon. No multiple taxes means compliance and documentation will be easy. Return filing, tax payment, and refund process will easy and hassle free.

Increase in Employment

As GST will reduce cost of product it is expected that demand of product will increase and to meet the demand, supply has to go up. The requirement of more supply will be addressed by only increasing employment.

Increase in GDP

As demand will grow naturally production will grow and hence it will increase gross domestic product. It was estimated that GDP will grow by 1-2% due to GST.

Decline in Tax Evasion, Transparent and Corruption Free

GST is a single tax which will include various taxes, making the system efficient, transparent so there will be fewer incidences of Tax Evasion and corruption.

Increase competitiveness

The retail price of the manufactured goods and services in India reveals that the total tax component is around 25-30% of the cost of the product. After implementation of GST, the prices have gone down, as the burden of paying taxes has been reduced to the final consumer of such goods and services. Resultantly, production increases and competition too.

Increase in Tax Revenue for state and central government

GST will replace all 17 indirect taxes with single tax. Increase in product demand will ultimately more tax revenue to the treasury of state and central government. Goods and service tax is a boon for the Indian economy and the common man. It is a welcome step taken by the government.

Easy to implement and follow

GST will be paid only at point of sale. In past different taxes were payable at different stages like excise, octrio, sales tax. Under GST all these will be eliminated which will be easy to implement and follow.

Limitations

Buying or up gradation of Software/ERP will increase the cost:

For the smooth functioning of Business either they will have to update their existing accounting or ERP software to GST-compliant one or buy GST software. But both the options lead to increased cost of software purchase and training of employees for an efficient utilization of the new billing software.

Being GST-compliant

It was difficult for Small and medium-sized enterprises (SME) to keep pace with GST tax regime. They will have to issue GST-complaint invoices, be compliant to digital record-keeping, and of course, file timely returns. This means that the GST-complaint invoice issued must have mandatory details such as GSTIN, place of supply, HSN codes, and others. So it took longer time for SME.

Increase in operational costs

As we have already established that GST is changing the way how tax is paid, businesses will now have to employ tax professionals to be GST-complaint. This will gradually increase costs for small businesses as they will have to bear the additional cost of hiring experts.

Also, businesses will need to train their employees in GST compliance, further increasing their overhead expenses.

Confusion and Compliance Issue as GST came into effect in the middle of the financial year

As GST was implemented on the 1st of July 2017, businesses followed the old tax structure for the first 3 months (April, May, and June), and GST for the rest of the financial year.

Businesses may find it hard to get adjusted to the new tax regime, resulted in confusion and compliance issues.

It will be difficult to adopt GST as an online taxation system

Unlike earlier, businesses are now switching from pen and paper invoicing and filing to online return filing and making payments. This might be tough for some smaller businesses to adapt to.

Higher tax burden on SMEs:

Smaller businesses, especially in the manufacturing sector will face difficulties under GST. Earlier, only businesses whose turnover exceeded Rs 1.5 crore had to pay excise duty. But now any business whose turnover exceeds Rs 20 lakh will have to pay GST.

However, SMEs with a turnover upto Rs 75 lakh can opt for the composition scheme and pay only 1% tax on turnover in lieu of GST and enjoy lesser compliances. The catch though is these businesses will then not be able to claim any input tax credit. The decision to choose between higher taxes or the composition scheme (and thereby no ITC) will be a tough one for many SMEs.

Lack of IT infrastructure:

There are still a few states in India which lack IT Infrastructure so it will be difficult for them to adopt GST.

Impact of GST on Different Sectors:

Affordable Housing
Purchase of houses is non-taxable, however under construction house will carry a GST tax rate. The GST rates for homes purchased under CLSS, EWS, LIG, MIG1/11 will be 8%, after deducting cost of land. However, those doesn't qualify CLSS, etc, will have to pay 12% GST on constructed houses.

Alcohol Industry
There is no GST on alcohol, instead there is an increase in the price of alcohol. Price of a beer is going to raise by 15% and wine and other hard drinks will be increasing by 4%.

Automobile Industry
GST absorbed indirect tax regime, which attracted several duties and taxes on the sale of vehicles and spares and accessories.

Aviation Sector
The industry has mixed feelings about the introduction of GST, especially the GST rates for airline fuel.

Cement Industry
GST will not affect this industry drastically, the tax rates imposed will get absorbed in the cost of cement production.

Chemical Industry
Implementation of GST is believed to be positive to the chemical industry, especially in the long term.

Coal Sector
After the GST implementation, the coal transportation rates have done down to 5% through trains, and thus the logistics costs has been decreased.

Consumer Goods & Services
The GST rates for the FMCG industry is set at 18-20%. While most are happy with the introduction of GST, the ones who are heavily affected are opposed.

Digital Advertising Industry
This industry which is fast growing is a cheaper method for companies as GST will have less effect in this sector, as compared to traditional marketing.

Domestic appliances and Electrical Machinery
There is not a huge impact in this industry as the new GST rates around 25%, which is similar to the rates pre-GST.

E-Commerce
Post GST, e-commerce operators collect 1% of the net value of the taxable supplies, which is called Tax Collected at Source (TCS).

Entertainment & Hospitality Sector
This sector was affected as this sector falls in the 28% category. Movie tickets, hotel rates will now be costlier.

Export of Goods & Services:
At all stages of the supply chain there is no tax, post GST. Moreover, the availability of input credits is welcomed.

Exports
In the pre-GST tax system, import of the goods carried several import duties, however, after GST, IGST has replaced the indirect taxes that was earlier imposed on import of goods and services.

Financial Products and Services
The financial services such as funds and insurances, (Non-Banking Financial Company) are most impacted.

Gold and Gold Jewellery Prices
Post GST the tax rate was set to 18% initially then brought down to 5% tax rate

Handicraft Sector
One of the largest sector of the country, which is most affected by GST. Therefore, GST is not welcomed by the artisans.

Hospitality Industry
This is another industry that has benefited as the previous tax regime levied up to 27% tax. Post GST, the tax rates have been reduced.

Inflation and Economic Activity
GST is a Inflationary measure. However, the rise in the tax rate on services to 18% is expected to raise inflation.

Job works
Special provisions exist for removal of goods for job-work and receiving back goods after processing from the job-worker carry no GST. The benefit of these provisions is extended both to the principal and the job-worker.

Logistics
The rate pre-GST was above 26% and post the implementation of GST there was reduction to 18-21%, which was good news for the sector.

Manufacturing Industry
GST, demands businesses to set-up mechanism for meeting the requirements of GST. Therefore, once the companies adapt the requirements, the compliance costs will go down drastically.

Pharmaceutical Industry
This industry will see an increase in costs after GST implementation as the cost of medicines will rise by 2.3% in the 12% bracket and medicines with 5% will see no increase in MRP.

Power Sector
Overall impact of GST on power sector is positive. Domestic coal, is in the 5% tax slab. The impact of GST will be positive for the electrical and the lighting sectors as the rate is now 18%.

Real Estate Sector
This sector has mostly benefitted from the introduction of GST, as much of this sector is becoming more transparent.

Rent
Since the implementation of GST the exemption limit for renting out commercial property is Rs. 20 lakhs and there is no GST on house rent.

SEZ
Under GST regime, SEZ's have benefitted from a zero-tax rate.

Transportation
The rates for cabs has been lowered to 5% and for air travel also. So, this is a welcome move for those in this sector.

Start-Ups
GST has a positive influence towards start-ups. It had got both advantages and disadvantages for start-ups. However, as a start-up, already facing the stress of a new business, the question of how the new GST will impact your business, must be difficult for you.

Stainless Steel Industry
GST had made a very good impact on steel industry. After issuing new tax rates, it has become more favourable to steel industry. The GST rate for primary steel industries is imposed at 18%, which is helpful for them to grow.

Stock Transfer
Post the introduction of GST, tax is levied on branch transfers and input tax can be claimed later.

Sweet makers
They are trying to figure out if they need to pay 28% tax on it as many of our chocolate variations have more than 5% cocoa content. Badam milk, basundi and rasmalai are also a concern as we aren't sure if they are sweets (5% tax) or beverages (12% tax).

Textile Industry
Despite some changes under the GST regime, the textile sector benefitted with the implementation of the regime.

Tobacco Industry
The new GST rates are less than the combined taxes during pre-GST regime.

Various segments of Indian Railways
The impact of GST in this sector is very minimal as the rate is kept at the lowest tax rate of 5% to ensure passengers benefit the most.

CONCLUSION

Change is definitely never easy. The government has been trying to smoothen the road to GST. It is important to take a leaf from global economies that have implemented GST before us, and who changed their tax structure and avail the advantages of having a unified tax system and easy input credits. I personally appreciate the structural changed in our current tax regime in form of GST Bill. Different states and people will no doubt take time to understand the GST and its importance in changing environment but whenever they understand, they will surely appreciate this bold step of government which changed our old tax regime.

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A STUDY ON LABOUR COMPLIANCE WITH SPECIAL REFERENCE TO SELECTED COMPANIES OF SILVASSA

Diksha Swaroop[1] and Shweta Jha[2]
Assistant Professor[1] and Student[2], SSR IMR, Silvassa

It is only through labor and painful effort, by grim energy and resolute courage that we move on to better things.   *Theodore Roosevelt*

Labour compliance is all the statutory norms which govern at the organization and protecting the interest of both employee and employer. During the time of British rule the seed of labour laws were originated with the advent of first factories act in 1881, gradually and slowly the various laws were also enacted in India. The major objective of these compliance are protections to workers, peace and harmony at the organizations, better productivity, high moral and commitment as well as national growth. This paper envisages the perception of nearby organizations regarding Labour compliances. In our country laws has been classified as central and state laws and their proper execution lies in the hands of organizations. Researches with the help of structured questionnaire got the opinion of various HR Managers about the importance and implementation of laws governing this area. The finding of this paper will open up avenues to the organization how seriously and what safeguard companies has to take care in respect of labour compliances.

Keywords: Labour Compliance, Laws, Government, workers

INTRODUCTION
Labour compliance is an important parameter in international business today, and buyer from major global markets, are increasingly insisting on adherence to labour compliance norms. Social Accountability is the measure of an organization's state of being mindful of emerging social concerns of internal and external stakeholder (community, employees, government and non-government organizations, management, and owner). It reflects in the organization's verifiable commitment to certain factor such as willing compliances with employment, health and hygiene, safety, and environment laws, respect for basic civil and human rights, and betterment of community and surroundings.

LABOUR LAWS IN INDIA
✓ Minimum Wages Act, 1948

✓ Payment of Wages Act, 1936

✓ Payment of Bonus Act, 1965

✓ Factories Act, 1948

✓ Minimum Wages Act, 1948-

✓ Contract Labour (Regulation & Abolition) Act, 1970

✓ The Apprentices Act, 1961-

✓ Employee's provident fund and misc. Provisions act, 1952

✓ Employees' State Insurance Act, 1948

LITERATURE REVIEW
P.L. Malik (2009) - The author explained the Environment (Protection) Act, 1986 an act provide for the protection and improvement of environment and for matters connected therewith. The increasing in the environment problems and declining the quality of environment Due to increasing pollution loss of vegetal covers and biology diversity, harmful chemicals in atmosphere growing risk of environmental accidents and threats to life support system. The world community resolves to protect and enhance the environmental problems. The Government of India participated in the United Nation Conference on the Human Environment held in Stockholm in June 1972 strongly voiced the concern and said that there is the need of general legislation though there are laws but still some major areas are not covered and also creation of the regulation and actionable authority with adequate power and responsibility.

Debi S. Saini January (2009)-This research attempts to analyze the structure of Indian labour law in the overall context of the notion of social and economic justice as enshrined in the Constitution of India. It also focuses on the working of the labour law framework in terms of its stated goals as also the changing needs of a globalizing

economy. It deals with the constitutional context of labour law; the structure and functioning of different branches of labour law i.e. law of working conditions, labour relations law, law of wages and monetary benefits, law of social security; and a review of the working of these laws. While discussing the working of these laws in the last part, focuses on the implementation of labour laws and the role being played in this regard by the state and its agencies. The concluding part discusses how the realization of labour law objectives can be made more realistic from the view point of the constitutional promise of socioeconomic justice, as also the changing context of the employer and employees' power position.

S.P. Jain (2011)- The author explained the factory act, 1948 in the first chapter of his book Industrial and labour law. It includes the evolution of act its scope important definition related to act. In short, this is a labour regulation measures designed primarily for health safety and welfare of the factory worker.   The author explained the Employees Provident Funds and Miscellaneous Provision act, 1952 in the fifth chapter of his book Industrial and labour law with a provision made for retiring benefits.   The author explained the Child Labour act, 1986 in the sixth chapter of his book Industrial and labour law. The object of the act is to regulate the conditions of work of children in employments where they are not prohibited from working;

Mahesh Chandra(2015)- Although India has a rich and long history of environmental laws dating back to the 1970s, it still ranks very low on air and water pollution levels compared to the rest of the world resulting in. higher rates of infant mortality and lower life expectancy rates. Poor sanitation conditions and sewage problems compound the problem affecting the health of ordinary citizens in India. The reasons for this disconnect between enlightened environmental laws and high levels of pollution could be traced to lax enforcement of existing environmental laws, discrepancies in the environmental guidelines for businesses to follow between the central government and at the state levels.

Dr. Bina Rai(2016)- Human rights are the fundamental inherent rights of all human beings to which people are entitled simply by virtue of being born into the human family. From a legal standpoint, human rights are the individual and collective rights recognized by States and enshrined in their constitutions and in international law. A functional protection system requires not only the ratification of the relevant human rights treaties but, arguably, also their constitutional protection and further implementation, as necessary, through the enactment of appropriate legislation.

S.I.A. Muhammed Yasir Assistant Professor Of History Jamal Mohamed College (Autonomous) Tiruchirappalli-20 April-2016-The aim of the researcher is to study evolution of the labour legislation in India. The Indian Labour Legislations owe its existence to the British Raj. Most of the labour legislations were enacted prior to India's independence. The post independence enactment of important legislations in the areas of employee security and welfare derive their origin partly from the vision of independent.India's leaders and partly from the provisions in the Indian Constitution and international conventions like the International Labour Organization (ILO). The labour legislations were also enacted keeping in mind the international standards on Human Rights and United Nations Protocols.

Mohammad Nurul Alam1, Mohammad Tahlil Azim2, Dr. Rosima Bte. Alias3 August 14, 2017- The purpose of the researcher is to explore the challenges faced by Human Resources personnel in ensuring compliance in Ready Made Garments industry in Bangladesh. The concern of labor standard and workplace safety have received prime attention from the government, ILO, international NGOs, trade unions, global buyers and consumers. Future prospect of this sector largely depends on the successful implementation of the compliance issues. The present study shows that so far Bangladesh could achieve conclusive success in eliminating child labor only. The most prominent challenge for the HR people is the lack of top management support, followed by lack of awareness of the workers about their rights, lack of government intervention and poor literacy of workers. The findings imply that the owners of the garments need to change their mind-sets. They should shift their view of short term gain through reduced cost of production to a sustainable business based on fairness, and efficiency. They should feel an urge from inside that ensuring better working environment including labor standard, occupational health and safety and other issues of concern they will harvest the economic benefits in the long run. Government, NGOs and trade unions should play their role to educate the workers about their rights. Finally, it is the government that has to enforce the laws through training, dialog, and fair and frequent inspection.

Mohammad Nurul Alam1, Mohammad Tahlil Azim2, Dr. Rosima Bte. Alias3 August 14, 2017 Compliance implies conformity to standards. In the case of garments Industry, the standards comprise of the relevant law of the respective country, ILO conventions regarding labor standards and labor rights, fair labor practices, working conditions, building standards, worker's safety and health measures,

environmental protection issues and buyers' Code of Conduct (COC). Broader issues of compliance are sometimes categorized into social compliance, Environmental compliance, occupational compliance, physical compliance, etc. Social compliance includes wages and benefits, hazards and safety, health and sanitations, human rights, etc. Environmental compliance comprises pollution control, wastage management, complying with the environmental laws, etc. Occupational compliance includes reliability regarding product quality, design, and other specifications, ensuring delivery lead time, etc. Physical compliance incorporates building-structure, factory get-up, etc. Compliance represents a useful and relevant set of guidelines for ensuring that the business ventures play an ethical and vital role in business. For the attainment of these standards, buyers, sometimes, put pressure on their suppliers to implement their COC standards as a prerequisite for their current and future purchase.

Avtar Singh and Harpreet Kaur (2017)- The author explained the employees' state insurance act 1948, in the part 9 of the book Introduction to labour and industrial laws. The object of the act is summed up in the Preamble which says that it is an act to provide for certain benefits to employees in case of sickness, maternity and employment injury and to make provisions for certain other matters in relation thereto.

Ajay Garg(2017)- The author explained the Minimum Wages act, 1948 in the eighteenth chapter of his book labour law the objective of the act is to provide minimum statutory wages for scheduled employments The Minimum Wages Act, 1948 envisages providing minimum statutory wages for scheduled employments with a view to obviate the chances of exploitation of labour through payment of very low and sweating wages. The Payment of Bonus Act, 1965 aims at providing for the payment of bonus (linked with profits or productivity) to the employees. The Payment of Gratuity Act, 1972 envisages providing retirement benefit to the workmen who have rendered long ago unblemished service to the employer, and have thus contributed tn. prosperity of the employer. Gratuity is a reward for long an. meritorious service.' The significance of this Act lies in the acceptance of the principle of gratuity as a compulsory, statutory retrial benefit. The Payment of Wages Act, 1936 was enacted with the object of ensures payment of wages in a particular form at regular intervals without unauthorized deductions. The Trade Unions Act

1926 provides for registration of trade unions. The Employees' Compensation Act, 19231, aims to provide employees and/or their dependents some relief in case of accidents arising out of and in the course of employment and causing either death or disablement of employees.

Mohibullah ATM1 *, Takebira UM1 , Moni KN2 and Rahman M3, 2018, The aim of the researchers are to analysis the present scenario of compliances practice in Bangladesh. The research was identified the causes and effects of occupational hazards and recommendations that can promote greater occupational safety in Bangladesh RMG sector. The study was intended to confine the current status of compliance practices in low categories factory of Bangladesh in order to develop research hypotheses. A primary research was conducted to collect qualitative data which was being analysed using multivariate analysis. The survey was designed to collect information about awareness and compliances practice in the factory directly from worker and also from management. The social dimensions of the RMG industry are getting more attention from consumers, social workers, welfare organizations and international buyers. Now international buyers are demanding green factory..

RESEARCH DESIGN & METHODOLOGY
Research Design: Exploratory research, Descriptive research:

Sources of Data: Primary & Secondary

Sampling Techniques: Purposive

Sample size: Seven organizations namely

- Universal Healthcare ltd
- TCPL ltd
- Atul ltd
- Nilkamal ltd
- Beekaylon Synthetics Pvt. ltd.
- Mars Patrochem Pvt ltd
- IPPL ltd

Objective of labour law

Value of Labour Law

Awareness of labour law

Benefits of labour law

Reason for not implementing labour law

Essential element of labour law
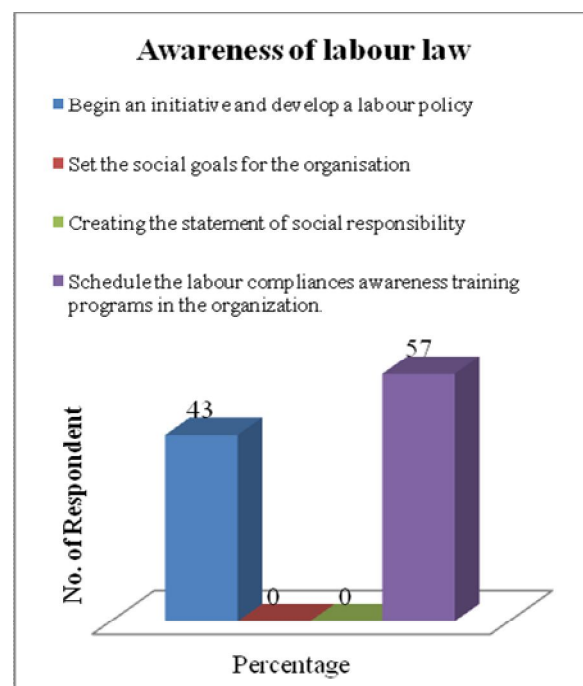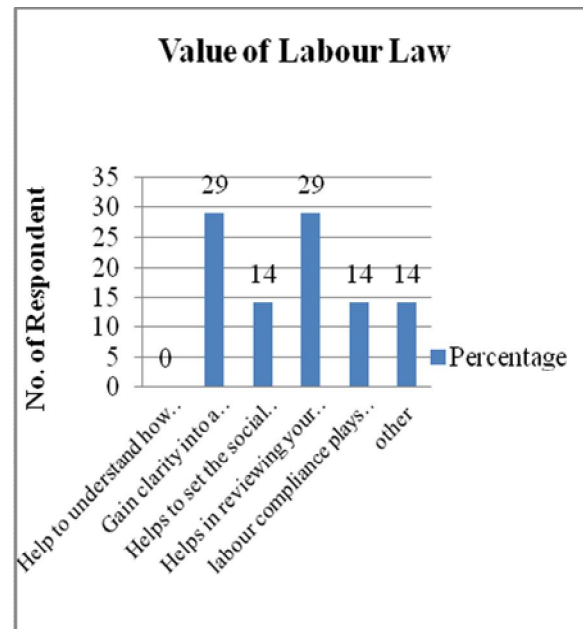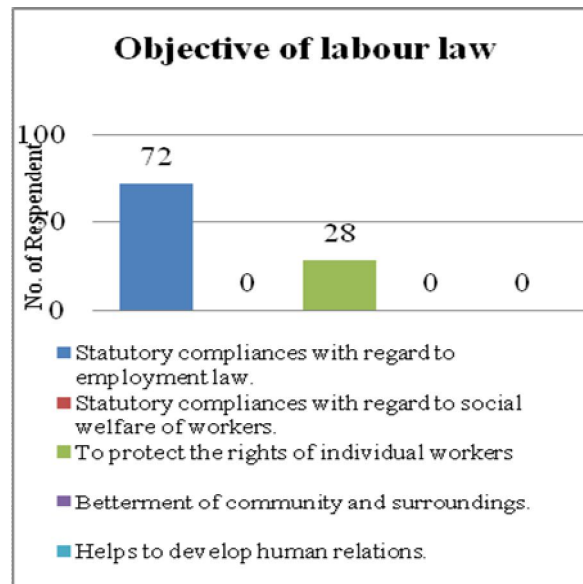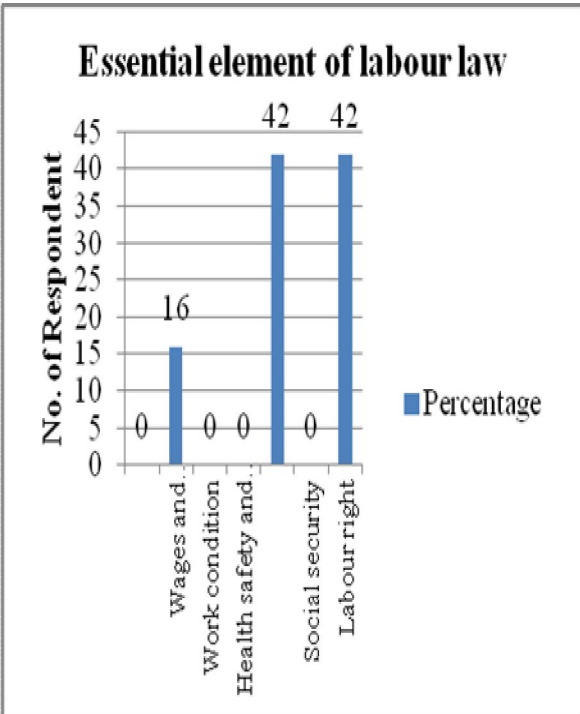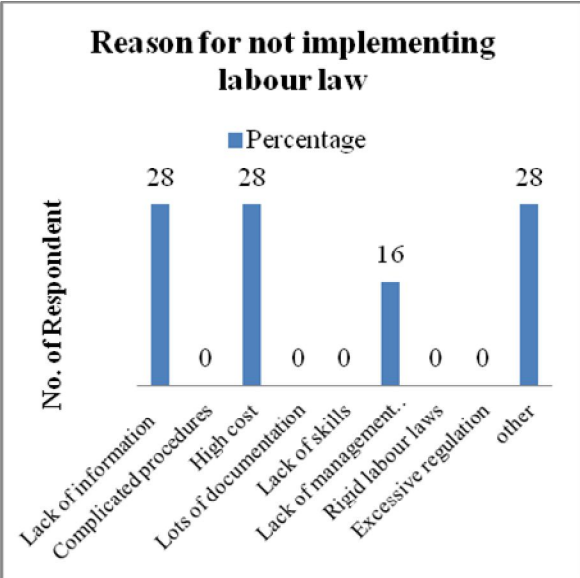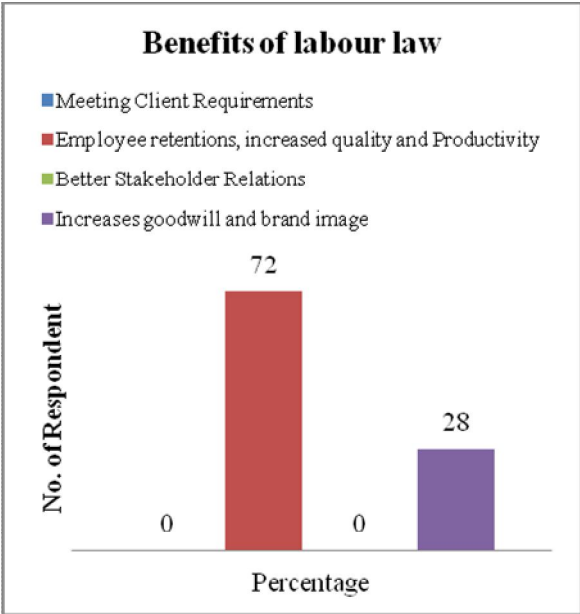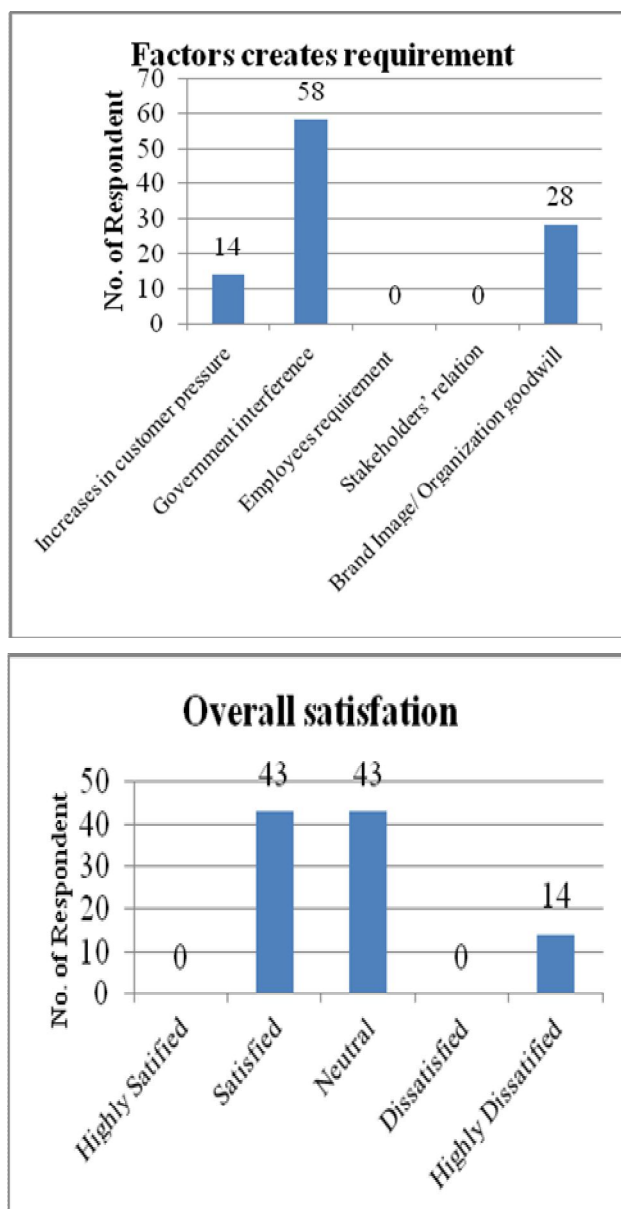
FINDINGS

➢ 72% of the respondent is in the opinion that the objective of the labour law is Statutory compliances while 28% perceive it as protection of the rights of individual worker (Table 1)

➢ 29% respondent said that labour laws helps in gain clarity into business and reviewing business code of conduct. (Table 2)

➢ 57% respondent said that to create the labour compliances awareness to the employers the organisation should schedule the labour compliances training programs in the organisation while 45 % said that begin the labour compliances initiatives and policy. (Table 3)

➢ 72% respondent said that labour law benefit for employee retention, productivity, and increases quality while 28% said that it helps to increase brand image and goodwill.(Table 4)

➢ 28% respondent said that that lack of information, High cost is the reason for not implementing while 16% said that that lack of management support is the reason for not implementing labour compliances (Table 5)

➢ 42% respondent said that labour right and administration is the essential element of labour law whereas 16% said that wage and remuneration is essential element.(Table 6)

➢ 58% respondent said that Government initiatives and interference is a factor creates requirement for labour law and 14% said increases in customer pressure responsible factor for creating requirement for labour law.(Table 7)

➢ 43% respondent said that they are overall satisfied and 14% said that they are highly dissatisfied.(Table 8)

CONCLUSION

Labour compliance is very vital for any organisation to succeed and survive. Labour compliance fulfill both individual and organization objective. In order to have fruitful implementation employer and employee both has to cooperate and support each other. To strengthen labor compliance proper information and guidance will be provided by Government. Lot of initiative took place by Government like EPFO portal which streamline the functions of provident fund likewise many more reforms are expected by the Government of India.

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A STUDY ON MARKETING MIX OF SUDHIR POWER LIMITED

Nitish Singh
Student, SSR IMR, Silvassa

ABSTRACT
Marketing Mix has undergone a sea change in last few decades. A combination of factors that can be controlled by a company to influence consumers to purchase its product. The way a product is priced should reflect the value it delivers, keeping the competitors pricing structure in mind. Promotion helps a company create awareness and build recognition for itself and its product in the target market though advertising, sales promotion. A company can gain higher profits if it can choose the right place in terms of distribution channel like distributers, wholesalers, and retailers to sell its product.

An overview of Marketing Mix of Sudhir Power Ltd. The main objective of the research was to understand the Marketing Mix concept and significance of Sudhir Power Ltd. The Research design selected was Exploratory and Descriptive research. The Researcher has used personal interview as well as telephonic interview and structured questionnaire and analysis of the data is done by using various statistical tool. The Product strategy of Sudhir Power Ltd was found to be appealing as it was of heavy quality with competitive price. The Price strategy of Sudhir Power Ltd was found to be aligning with the competitors thus not giving a price benefits for edging the competition. The place strategy of the organization as marketing mix is effective as majority of customers finds it convenient to reach the company. The promotional strategy needs further aggressive approach to beat its competitors. The Researcher faced a few limitations while executing the research in the form of hesitation from the respondents. Also the overall study is pertaining to the Research on Marketing Mix of One selected company hence the results gathered will be indicative in nature for the Industry at large rather exhaustive.

Keywords: Marketing Mix, Marketing Mix Factors

INTRODUCTION
"Marketing is a contest for people's attention."

- **Seth Godin**

The marketing mix (also known as the marketing mix has been defined as the " pursue its marketing objectives in the target broad levels of marketing decision, namely: product, price, promotion, and place. Marketing practice has been occurring for millennia, but marketing theory emerged in the early twentieth century. The contemporary marketing mix, or the 4 Ps, which has become the dominant frame was first published in 1960. Typically comprising 7 Ps and physical evidence. Occasionally service these 7 Ps plus performance.

Product: refers to the item actually being sold. The product must deliver a minimum level of performance; otherwise even the best work on the other elements of the marketing mix won't do any good.

Price: refers to the value that is put for a product. It depends on costs of production, segment targeted, ability of the market to pay, supply direct and indirect factors. There can be several types of pricing in with an overall business plan. Pricing can also be used a demarcation, to differentiate and enhance the image of a product.

Place: refers to the point of sale. In every industry, catching the eye of the consumer and making it easy for her to buy it is the main aim of a good distribution or 'place' strategy.

Promotion: this refers to all the activities undertaken to make the product or service known to the user and trade. This can include advertising, word of mouth, press reports, incentives, commissions and awards to the trade. It can also include consumer schemes, direct marketing, contests and prizes.

OBJECTIVES OF THE STUDY
- To understand the concept and significance of marketing mix.

- To analyze the Marketing mix of Sudhir power Ltd. through a survey among existing clients of the company.

LITERATURE REVIEW
Marketing is essence of every Organisations success. There is a paradigm shift experienced today in the approach of the Organisations towards the Marketing efforts. Massively the Marketers focus on the four P's of Marketing i.e., Product, Price, Promotion & Place. Further it was extended to People, Physical Evidence & Process. Every Marketing strategy revolve around these essential 'P's' of Marketing. "Productivity is the next

"P" getting discussed in this context. The literature on Marketing Mix has been in abundance and the researcher had good scope of reviewing the same in order to generate further understanding on the Marketing Mix.

Philip Kotler (2016). Marketing Management as explained in the book states that given the breadth, complexity and richness of marketing, however- as exemplified by holistic marketing –clearly these four Ps are not the whole story anymore. If we update them to reflect the holistic marketing concept, we arrive at a more representative set that encompasses modern marketing realities: people, processes, program, and performance. In his book explained about marketing management. He discussed about The Evolution of Marketing Management. People reflect, in part, internal marketing and the fact that employees are critical to marketing success. Marketing will only be as good as the people inside the organization. It also reflects the fact that marketers must view consumers as people to understand their lives more broadly, and not just as shoppers who consume products and services. Processes reflect all the creativity, discipline, and structure brought to marketing management. Marketers must avoid ad hoc planning and decision making and ensure that state-of-the-art marketing ideas and concepts play an appropriate role in all they do, including creating mutually beneficial long term relationship and imaginatively generating insights and breakthrough product, service, and marketing activities.. We define performance as in holistic marketing, to capture the range of possible outcome measures that have financial and nonfinancial implications (profitability as well as brand and customer equity) and implications beyond the company itself (social responsibility, legal, ethical, and environment).Finally, these new fours Ps actually apply to all disciplines within the company and thinking this way mangers more closely align themselves with the rest of the company.

V S Ramaswamy, S Namakumari, (2002) in the book on Marketing Management planning implementation and control explained that since marketing is essentially an interaction between the marketing mix and the environmental variables and since the latter are non-controllable, marketing becomes synonymous with assembling and managing the marketing mix. Of course, while assembling the marketing mix, the marketing manager will take due note the environmental variables. Not only will he take due note of them, he will ensure that his marketing mix suits the environmental variables. And, it is this factor that renders the task much complex.

- What should be the price structure?
- Which channel has to be selected?
- What is the right promotion strategy?
- How should the total marketing effort and resources of the firms be apportioned among the four Ps?
- How to balance the impact of an increase or decrease in the allocations to a particular element on the other elements?

Change in Customer Preference
In many businesses, the customer is perhaps, the most fluctuating of all the environmental variables. Often, customer tastes and preference change very fast; today, he may want a cheaper version of the product; tomorrow he may be bothered more about quality or after- sales service. Brand loyalty also changes; customer's purchasing power too changes over time. Appropriate modification of the marketing mix.

Change within the Firm
There is yet another reason why the marketing mix needs to be juggled frequently. Besides the change in the external environment, change taking place within the firm too, necessitate modification in the marketing mix. For Example- Changes in the corporate/competitive strategy of the firm, change in the product lines of the firm, changes in the organisation or resource level of the firm, will all lead to changes in the marketing mix for a given product/brand.

3) Philip Kotler, Kevin Lane Keller, (2007) in his book explored the fact that companies such as Apple, Sony and TAG Heuer for achieving exponential sales growth despite being in established, but stagnant, markets. The explanation offered for these success stories was that these companies adopted a clear vision of the proper direction in which to take their brands and challenged marketing convention through product innovation, advertising or some other aspect of marketing. Another recent book entitled Radical Marketing spotlights companies such as Harley-Davidson, Virgin Atlantic Airways, and Boston Beer for adopting a different approach to marketing that focuses on stretching limited resources, staying in close contact with customers, and creating more satisfying solutions to customer need.

Changing Technology

The digital revolution has created an information Age. The industrial Age was characterized by mass production and mass consumption, stores stuffed with inventory, ads everywhere, and rampant discounting. The Information age promises to lead to more accurate levels of production, more targeted communications, and more relevant pricing. Moreover, much of today's business is carried on over electronic networks: intranet, extranets and the internet.

Globalization

Technological advances in transportation, shipping and communication have made it easier for companies to market in other countries and easier for consumers to buy products and services from marketers in other countries.

Privatization

Many countries have converted public companies to private ownership and management to increase their efficiency, such as British Airways and British telecom in the United Kingdom.

Customization

The company is able to product individually differentiated good whether ordered in persons, on the phone or online. By going online, companies, essentially enable consumers to design their own goods. The company also has the capacity to interact with each customer personally, to personalize messages, services and the relationship.

Kevin Wongleedee (2015) stated in the article that discovering the differences of purchasing behavior of consumers at traditional markets in Bangkok by gender, age, marital status, ducational level, occupation and monthly income. [i] Investigating a correlation between marketing mix determinants and consumers' purchasing behavior [ii] Investigating a correlation between product mix determinants and consumers' purchasing behavior. [iii] Examining a correlation between consumers' purchasing behavior and their likelihood of future purchasing. The goal was to identify the marketing mix of Bangkok traditional markets that determined the purchasing behavior of consumers. A total of 400 samples were selected from the population of consumers who visited and shopped at traditional markets, in Bangkok. The findings provided more understanding of viewpoints towards the community marketing mix determinants on consumers' purchasing behavior. The findings revealed a significant correlation between the consumers' attitudes towards the marketing mix determinants of price, sellers and place and buying behavior in terms of the buying frequency. Moreover, a higher purchasing frequency level also determined the likelihood of revisiting to shop at traditional markets, positive recommendations and more frequent shopping in case of receiving a higher income.

Dr. B.R. Londhe (2014) in the article threw light on the fact that Marketing mix has under gone a sea change in last few decades. Every stake holder involved in the marketing process looks for 'Value'. The customer enters in the marketing process for better `value` for his money through 'Value to Customer'. The marketers would like to concentrate on the 'valued customer'. The prime objective of any business is to sought value from the business 'value to the marketer'. The marketer and customer would like to keep society`s interest intact through 'Value to society'. The new marketing mix model even though is at conceptual level but it certainly answers many questions of modern marketers which are not answered by traditional theories of marketing mix.

Norsyaheera Abd Wahaba, Lailatul Faizah Abu Hassanb, Siti Asiah Md Shahidc, Siti Noorsuriani Maond (2015) stated in their article that in today's business market, there are so many new entrants in the same industry, selling and providing the same products and services. Therefore, business providers need to compete with one another in order to survive in the industry as there are so many competitors. Business providers need to focus on the customers' needs and preferences to maintain and retain the long term relationship. In order to make customer satisfied, business providers must know the elements in the marketing mix that they need to practice in order to attract customers especially through their buying behavior. Thus, the objective of this study is to examine the relationship between marketing mix and customer loyalty, and the mediating effect of customer satisfaction in hijab industry. The study setting focused on female customers who are wearing and buying any hijab products at Shah Alam outlets. Questionnaires adapted from prior studies were distributed and 234 usable questionnaires were collected from this study. It is expected that findings from this study will contribute to the existing literature to both theoretical and managerial approaches in order to better understand the pattern of the marketing mix, customer satisfaction and customer loyalty, especially in hijab industry settings.

Chai Lee Goi (2009) in the article threw light on the main objective of this study is to review the present marketing mix applies particularly to the marketing. This study provides an idea to the marketers and can be

used as tools to assist them in pursuing their marketing objectives. Borden (1965) claims to be the first to have used the term marketing mix and that it was suggested to him by Culliton's (1948). McCarthy (1964) offered marketing mix, often referred to as the 4Ps, as a means of translating marketing planning into practice (Bennett, 1997). Marketing mix is originating from the single P (price) of microeconomic theory (Chong, 2003). New Ps was introduced into the marketing scene in order to face up into a highly competitively charged environment (Low and Tan, 1995). Even, Moller (2006) presents an up-to-date picture of the current standing in the debate around the Mix as marketing paradigm and predominant marketing management tool by reviewing academic views from five marketing management sub-disciplines (consumer marketing, relationship marketing, services marketing, retail marketing and industrial marketing) and an emerging marketing (E-Commerce). The concept of 4Ps has been criticized by number of studies, Examples Lauterborn (1990), Moller (2006), Popovic (2006) and Fakeideas (2008). However, in spite of its deficiencies, the 4Ps remain a staple of the marketing mix. The subsequent Ps have yet to overcome a consensus about eligibility and agreement over the practical application (Kent and Brown, 2006).

Bahman Saeidi Pour, Kamran Nazari and Mustafa Emami (2012) investigated the impact of marketing mix in attracting customers to Saderat Bank in Kermanshah Province. Questionnaire which included 30 questions was used to collect information in this research. The reliability of the questionnaire was calculated using Cronbach's alpha, and a value of 0.882 was obtained, greater than 0.7 which is the reliability of the questionnaire. The population used in this study is the customers of Saderat Bank in Kermanshah Province, with at least one account, interest free loans and savings. 250 questionnaires were collected by stratified random sampling. The work has one main hypothesis and 5 sub- hypotheses. Pearson correlation test was used to test the hypotheses. It was established that factors in the marketing mix have a significant positive effect in absorbing customers. That means the bank has a significant positive effect.

Anusha KS (2016) examines the importance of branding and marketing mix. The article has estimated the ways to promote the product and how the product gains the brand name based on the written points by the authors it has been estimated that the marketing strategy have directly or indirectly helped in gaining brand image with the few aspects which emphasis on the promotion and marketing mix to gain the brand name.

Granthaalayah (2016) in the article analyzed marketing mix theoretical aspects. The article discuses that marketing mix is one of the main objectives of the marketing mix elements for setting objectives and marketing budget measures. The importance of each element depends not only on the company and its activities, but also on the competition and time. All marketing elements are interrelated and should be seen in the whole of their actions. Some items may have greater importance than others; it depends mainly on the company's strategy and its activities. Companies that provide services- the provision of service will be key elements. Article arises research questions is marketing mix create added value for enterprises. There are used scientific literature and analyses methods in article. An analysis of the scientific literature, it can be said that marketing mix measures are the actions and measures necessary to achieve marketing goals. Marketing elements; product, place, price, promotion are used for marketing goals. These instruments operate most efficiently when all the elements are combined and working together.

RESEARCH METHODOLOGY
A study *"A Study on Marketing Mix Of Sudhir Power Ltd" Experienced by the Customers* is a exploratory and descriptive study done with the data collection from both the sources i.e. Primary and Secondary data. The research was done onto the customers of Electrical industries with a sample size of 96 respondents. The sampling technique used was simple random sampling. The tool for analysis was questionnaire which includes 22 Question and were used both the close & open ended Question where the researcher is free to answer in their own words too. The study aims to understand the Marketing Mix Of Sudhir Power Ltd.

ANALYSIS
The author has conducted the following analysis based on the survey conducted among 96 Existing clients. The massive area of enquiry through the survey was Marketing mix of Sudhir Power Limited.

- Internet was found to be the most influential medium in promotional activities of Sudhir power Ltd.
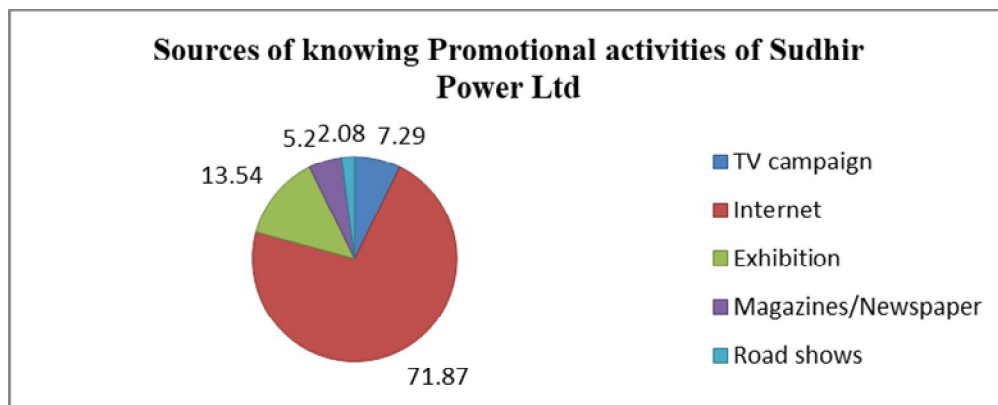
Graph No-1

- The product of Sudhir power ltd was found to be competitive when it comes to its competitors.
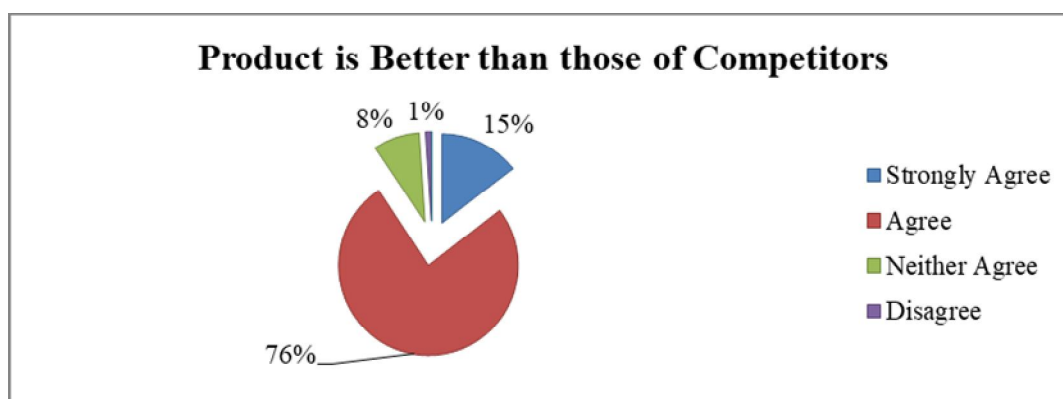
Graph No-2

- Quality of product influences the purchase decision the most followed by Brand and then the price of the product.
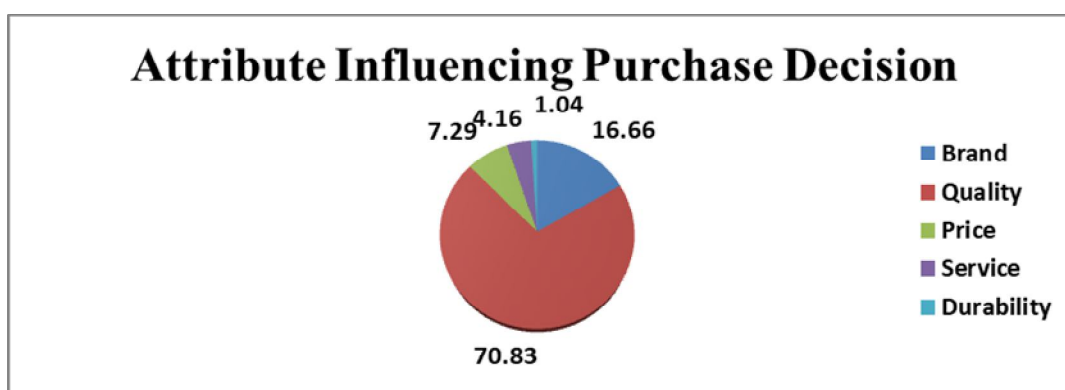
Graph No-3

- The business place of Sudhir Power Ltd is convenient to reach for majority of customers which makes the organisation better reachable.
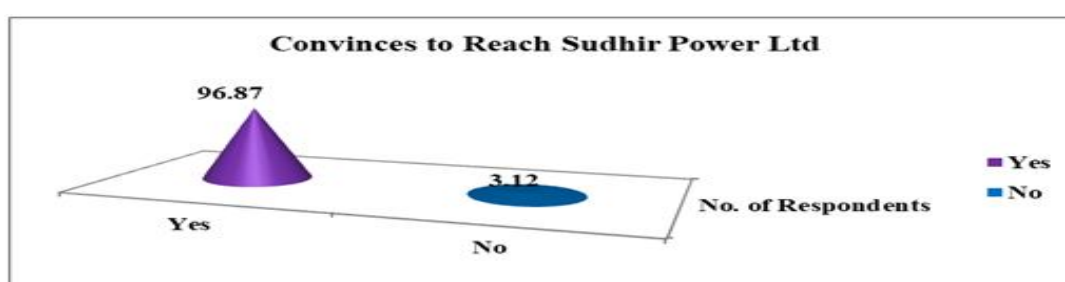
Graph No-4

- **Dealer and manufacturer are most preferred sources to buy the product.**
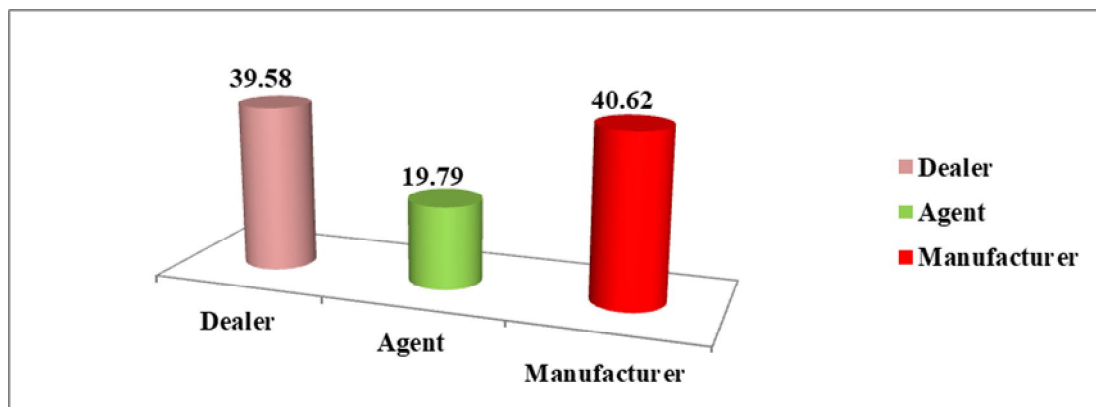
Graph No-5

- **Direct marketing tool was found to be more effective promotional tool used by the company.**
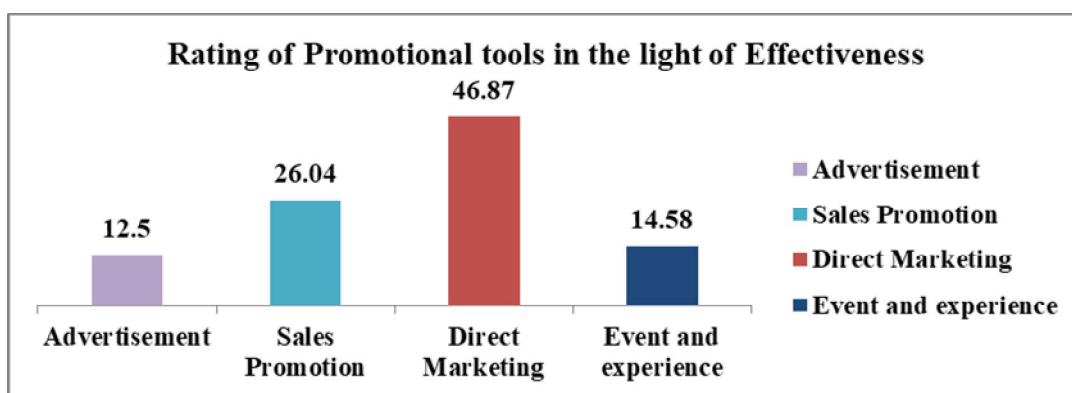
Graph No-6

- **Online mode was the first to be used to get information about the product. Existing client were of second choice of source of information about the product**
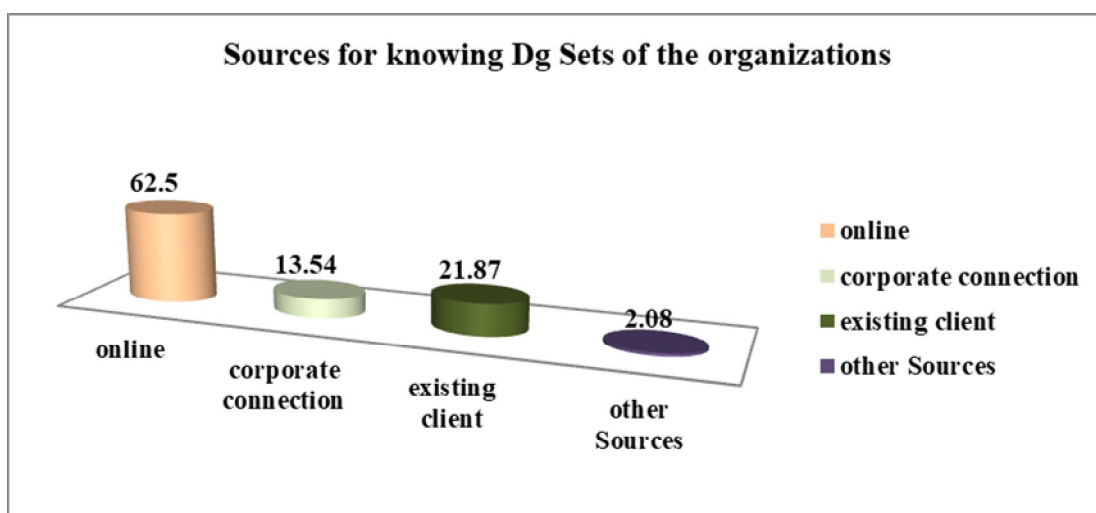
Graph No-7

FINDINGS

The Author based on the analysis has come up with the following findings:

➢ The Author gathers that Internet was the most influential medium in promotional activities of Sudhir power ltd. Also the Direct marketing tool was found to be more effective promotional tool used by the company. Online mode was the first to be used to get information about the product. Existing client were of second choice of source of information about the product.

➢ The study leads to the understanding that the product of Sudhir Power ltd was competitive as against its competitors.

- ➢ The Analysis states that massively the Quality of product influences the purchase decision as against the other factors like Brand value, the price, service & durability of the product. Further the study enumerates that Price of the company's product do not affect the purchase decision as the customers were quality oriented and not price sensitive.

- ➢ The survey reveals that the business place of Sudhir Power Ltd is convenient to reach for majority of customers which makes the organisation better reachable.

- ➢ The Researcher understands that Dealers and Manufacturers are most preferred sources to buy the product.

CONCLUSION

The Marketing Mix studies always entail an in-depth study on the factors governing the marketing efforts of the company. The product strategy of Sudhir Power Ltd was found to be appealing as it had heavy Quality with competitive price. The price strategy of Sudhir Power Ltd was found to be aligning with the competitors thus not giving a price benefit for edging the competition. The place strategy of the organisation as marketing mix is effective as majority of customers finds it convenient to reach the company. The promotional strategy is on an average and need aggressive approach to beat its competitors.

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A STUDY ON SERVICE QUALITY OF CORPORATE NETWORK HOSPITALS IN COIMBATORE DISTRICT

Maria Alexina Vinotha Rajan[1] and Dr. A. Megala[2]
Research Scholar[1], Department of Commerce, Periyar E. V. R. College (Autonomous), (Affiliated to Bharathidasan University), Tiruchirappalli
Associate Professor[2] & Research Supervisor, Government Arts and Science College, Kadaladi Ramanathapuram

ABSTRACT
Quality of service of hospitals has supreme significance in guaranteeing health care to patients and managing brand name, they have a task of progress and responsible for healthiness of society. Tangibility, assurance, empathy, reliability and responsiveness are dimensions of service quality of corporate network hospitals. Significant difference is prevailing among profile of patients and quality of corporate network hospitals. The service quality of corporate network hospitals has significant, positive and moderate relation with satisfaction of patients. To improve service quality and satisfaction of patients, corporate network hospitals should sanitize bathrooms and toilets properly and regularly and must ensure precise lab reports.

Keywords: Corporate Network Hospital, Patients, Service Quality

1. INTRODUCTION
As India have different states, the state Government has responsibility of providing better healthcare service to people. Government healthcare organizations have little competency to cater the needs of poor. On the other side, health service of private healthcare organizations is very expensive that are not utilized by large portion of people in India. Thus, the Government of India implements the strategy for increasing quality of services of healthcare sector through various plans and programmes and it collaborates with the state Government for the purpose (Kavitha, 2012).

Quality of service of hospitals has supreme significance in guaranteeing health care to patients and managing brand name, they have a task of progress and responsible for healthiness of society. Furthermore, the exponential growth of private hospitals emphasizes the quality of service as the regular concern in providing healthcare services (Kalepu, 2014). Hence, the continuous improvement quality of health services is required to compete with others in the healthcare sector. Majority of hospitals give similar services but vary in quality of service which is an index to get competitive advantage in healthcare business (Youssef, 1996).

At present, there are different kinds of hospitals available in the public domain and patients have choices to select the hospital which serves best to them at affordable price and corporate network hospital is one among them. The patients have ability to assess quality of services provided by hospitals and it affects significantly experiences and satisfaction of patients (Zineldin, 2006). Hence, in the healthcare sector, satisfaction of patients has a significant role in evaluating quality of services (Grogan et al 2000). Therefore, the present research is made to study service quality of corporate network hospitals.

2. REVIEW OF LITERATURE
Brahmbhatt et al (2011) found that private hospitals had better quality of service than public hospitals in terms of physical facilities, policy and procedures and meeting needs of patients, whereas public hospitals had better reliability in compare with private hospitals. Kumar et al (2012) concluded that Apollo hospital had better tangibility, reliability, empathy and responsiveness to patients and these were affecting satisfaction and loyalty of patients.

Phommavong and Khanophet (2013) revealed that assurance, tangibility, empathy, responsiveness and reliability were important dimensions of service quality of metropolitan public hospitals and these affected satisfaction of patients. Ramez (2014) indicated that among elements of service quality of hospitals, empathy, responsiveness and tangibility had higher level of impact on overall quality of services and service quality had positive and significant relation with satisfaction and behavioural intention of patients.

Martins et al (2015) stated that assurance was the most significant component and tangibility had least significance in service quality of hospitals and satisfaction of patient was significantly and positively related with overall quality of services of hospitals. Pillai and Kumari (2016) found that caring, efficiency, amenities, communication and courtesy of doctors and nurses were important elements of quality of services as viewed by patients. Kalutharawithana and Jayawardena (2017) concluded that reliability, physical aspects and policy of privates hospitals were positively and significantly impacting satisfaction of patients.

3. OBJECTIVES OF THE STUDY

1. To study service quality of corporate network hospitals.

2. To scrutinize difference in service quality of corporate network hospitals among profile of patients.

3. To study relation among service quality of corporate network hospitals and satisfaction of patients.

4. HYPOTHESES OF THE STUDY

1. There is no significant difference in service quality of corporate network hospitals among profile of patients.

2. There is no significant relation among service quality of corporate network hospitals and satisfaction of patients.

5. METHODOLOGY

The present study is carried out in Coimbatore district and the patients of corporate network hospitals are chosen by using random sampling method. The questionnaire method is used to receive data from 180 patients of corporate network hospitals. Percentages are calculated for knowing profile of patients and mean and standard deviation are computed for dimensions of service quality of corporate network hospitals. The t-test and F-test are done to scrutinize difference in service quality of corporate network hospitals among profile of patients. The correlation analysis is used to study relation among service quality of corporate network hospitals and satisfaction of patients.

6. RESULTS AND DISCUSSION

6.1. PROFILE OF PATIENTS

The profile of patients is given in Table-1. The findings disclose 58.89 per cent of patients are males, whilst, 41.11 per cent of them are females and 42.22 per cent of them are falling under age category of 31 – 40 years, whilst, 13.33 per cent of them are falling under age category of 21 – 30 years. The findings exhibit 39.44 per cent of patients are under graduates, whilst, 10.56 per cent of them are having secondary education and 38.33 per cent of patients are having monthly income of Rs.30,001 – Rs.40,000, whilst, 16.11 per cent of them are having monthly income of above Rs.50,000. And 73.89 per cent of them are married, whilst, 26.11 per cent of them are unmarried.

Table-1: Profile of Patients

Profile	Number of Patients	Percentage
Gender		
Male	106	58.89
Female	74	41.11
Age Category		
21 – 30 years	24	13.33
31 – 40 years	76	42.22
41 – 50years	53	29.45
51 – 60 years	27	15.00
Education		
Secondary	19	10.56
Higher Secondary	30	16.67
Under Graduation	71	39.44
Post Graduation	60	33.33
Monthly Income		
Below Rs.30,000	32	17.78
Rs.30,001 – Rs.40,000	69	38.33
Rs.40,001 – Rs.50,000	50	27.78
Above Rs.50,000	29	16.11
Marital Status		
Married	133	73.89
Unmarried	47	26.11

6.2. SERVICE QUALITY OF CORPORATE NETWORK HOSPITALS

The views of patients on service quality of corporate network hospitals are given below as.

6.2.1. TANGIBILITY

The view of patients on tangibility of corporate network hospitals is given in Table-2.

Table-2: Tangibility

Tangibility	Mean	Standard Deviation
The hospital is clean	3.84	0.76
The atmosphere in the hospital is good	3.73	0.83
The employees of hospitals have professional appearance	3.77	0.75
The bathrooms are sanitized properly	3.32	0.98
Medical shop and lab facilities are available in the premise of hospital	3.86	0.81

The patients are agreed with the hospital is clean, the atmosphere in the hospital is good, the employees of hospitals have professional appearance and medical shop and lab facilities are available in the premise of hospital, while, they are neutral with the bathrooms are sanitized properly.

6.2.2. ASSURANCE

The view of patients on assurance of corporate network hospitals is given in Table-3.

Table-3: Assurance

Assurance	Mean	Standard Deviation
Doctors have very good knowledge	3.88	0.69
Lab provides accurate reports	3.35	0.71
Doctors are giving correct treatments	3.80	0.80
Doctors get opinion of experts in critical situations	3.78	0.84
Individual care is given to emergency cases	3.72	0.79

The patients are agreed with doctors have very good knowledge, doctors are giving correct treatments, doctors get opinion of experts in critical situations and individual care is given to emergency cases, while, they are neutral with lab provides accurate reports.

6.2.3. EMPATHY

The view of patients on empathy of corporate network hospitals is given in Table-4.

Table-4: Empathy

Empathy	Mean	Standard Deviation
Doctors have real concern on their patients	3.81	0.91
Doctors are taking care of their patients	3.79	0.85
Nurses are taking care of their patients	3.75	0.77
Hospitals provide very good comforts to their patients	3.40	0.89
Operating hours of hospital are comfortable to all patients	3.70	0.73

The patients are agreed with doctors have real concern on their patients, doctors are taking care of their patients, nurses are taking care of their patients and operating hours of hospital are comfortable to all patients, while, they are neutral with hospitals provide very good comforts to their patients.

6.2.4. RELIABILITY

The view of patients on reliability of corporate network hospitals is given in Table-5.

Table-5: Reliability

Reliability	Mean	Standard Deviation
The hospital has excellent medical facilities	3.39	1.01
Specialists are available in the hospital	3.83	0.99
Ambulance is available for 24 x 7	3.85	0.95
Doctors are doing their duties perfectly	3.37	1.03
The hospital has blood bank	3.87	0.88

The patients are agreed with specialists are available in the hospital, ambulance is available for 24 x 7 and the hospital has blood bank, while, they are neutral with the hospital has excellent medical facilities and doctors are doing their duties perfectly.

6.2.5. RESPONSIVENESS

The view of patients on responsiveness of corporate network hospitals is given in Table-6.

Table-6: Responsiveness

Responsiveness	Mean	Standard Deviation
Doctors are responding to their patients effectively	3.90	0.97
Nurses are always ready to respond patients	3.30	1.02
Hospital has very simple procedure	3.91	0.98
Doctors are checking patients in regular manner	3.74	1.04
Doctors are giving treatment immediately for accidental cases	3.93	0.92

The patients are agreed with doctors are responding to their patients effectively, hospital has very simple procedure, doctors are checking patients in regular manner and doctors are giving treatment immediately for accidental cases, while, they are neutral with nurses are always ready to respond patients.

6.3. PROFILE OF PATIENTS AND SERVICE QUALITY OF CORPORATE NETWORK HOSPITALS

To inspect difference between profile of patients and service quality of corporate network hospitals, t-test and ANOVA (Analysis of Variance) test are used and the results are given inTable-7.

Table-7: Difference between Profile of Patients and Service Quality of Corporate Network Hospitals

Particulars	t-Value / F-Value	Sig.
Gender and Service Quality of Corporate Network Hospitals	4.652[**] (t-value)	.000
Age Category and Service Quality of Corporate Network Hospitals	5.706[**]	.000
Education and Service Quality of Corporate Network Hospitals	6.035[**]	.000
Monthly Income and Service Quality of Corporate Network Hospitals	5.948[**]	.000
Marital Status and Service Quality of Corporate Network Hospitals	4.114[**] (t-value)	.000

[**] Significant at 1 % level

The t-values and F-values are explaining significant difference is there in service quality of corporate network hospitals among profile of patients at one cent level. As a result, the null hypothesis is not accepted.

6.4. RELATION AMONG SERVICE QUALITY OF CORPORATE NETWORK HOSPITALS AND SATISFACTION OF PATIENTS

The relation among service quality of corporate network hospitals and satisfaction of patients was studied through correlation analysis and the results are given in Table-8.

Table-8: Relation among Service Quality of Corporate Network Hospitals and Satisfaction of Patients

Particulars	Correlation Co-efficient
Service Quality of Corporate Network Hospitals and Satisfaction of Patients	0.51[**]

[**] Significant at 1 % level

The correlation coefficient between service quality of corporate network hospitals and satisfaction of patients is 0.51, it is positively and moderately related at one per cent level of significant. As a result, the null hypothesis is not accepted.

7. CONCLUSION

The findings of this study elucidate that tangibility, assurance, empathy, reliability and responsiveness are dimensions of service quality of corporate network hospitals. Significant difference is prevailing among profile of patients and quality of corporate network hospitals. The service quality of corporate network hospitals has significant, positive and moderate relation with satisfaction of patients. To improve service quality and satisfaction of patients, corporate network hospitals should sanitize bathrooms and toilets properly and regularly and must ensure precise lab reports. Additionally, corporate network hospitals should give really nice comforts to patients and must provide superior medical facilities and doctors should perform their duties flawlessly and nurses must respond well to their patients.

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A STUDY ON THE PERCEPTION OF INDUSTRIES ABOUT INDUSTRIAL ASSOCIATION IN DADRA AND NAGAR HAVELI

Parimal Solanki
Student, SSR IMR, Silvassa

ABSTRACT

The first Industrial association was established in the year 1965 and in the early 1970's, all sectors of industry were managed through industrial associations. In present there are 146 industrial associations in India according to the national centre for trade information working within the various sectors like manufacturing, textile, rubber, steel, textile and many more industries the whole industry consists of industrial enterprises, scientific research organizations, design organizations, planning and design organizations.

The main objective of the research was to analyze the Perception of Industries about Industrial Association at Dadra & Nagar Haveli. The Research design selected was Exploratory and Descriptive research. The Researcher has collected the primary data by the help of techniques like personal interview, E-mail as well as telephonic interview. A structured questionnaire was prepared and Analysis of the data is attempted by the help of bar charts. The problem statement states that the industrial association was not getting new members and the existing members were not ready to continue their services. This signifies the rationale behind the study.

Keywords: Perception, Industries, Industrial association

INTRODUCTION

An Industrial association is a single production and economic complex consisting of industrial enterprises, scientific research organizations, design organizations, planning and design organizations, technological organizations, and other units. It may also include production associations and combines. The first industrial associations were formed in 1965. Beginning in the early 1970's, whole sectors of industry were managed through industrial associations, including the instrumentation, chemical, petroleum, and lumber industries. In present there are 146 industrial associations in India according to the national centre for trade information working within the various sectors like manufacturing, textile, rubber, steel, textile and many more industries.

As India is growing Very fast in the industrial sectors, the industries association will play an important role for the growth by providing various services to the industries. as the industries will grow there are chances of more industrial association coming up in India.

OBJECTIVES OF THE STUDY

- To Study about the working and services of selected 5 Industrial Associations of India.

- To analyze the perception of industries about industrial association at Dadra & Nagar Haveli.

- To suggest model for effective working of Silvassa industries association.

LITERATURE REVIEW

1) Perception By William Epstein, Louis Jolyon West, William N. Dember

The process in which the sensory stimulation is translated into organised experience in human being is perception. Perception simply means that by looking someone's we make a image of that person in mind. Academic awareness in perception deals largely from questions about the sources and validity of what is called human knowledge. People asked whether all the experience originate through contact with the physical world. People who studies perception from scientific perspective take these for granted.

2) Customer Perception of Service by Emma Aspfors

First the high quality of service is considered and then the element of service quality that is technical, functional and relational quality. Customer's perception of service quality is divided into perception of consistency, openness, assurance, understanding and tangibles. The concept of customer satisfaction is form with the product, price, quality and service quality forms. Whenever customer's experiences exceed their expectations, customer satisfaction will result in customer loyalty. It is very important to win customer loyalty especially for smaller businesses. As a small business does not have the same budget as larger companies, so keeping existing customer is much cheaper than finding new ones. By satisfying customers with the service provided to them will lead to customer loyalty. Due to these the small firm can retain their customer and will give smaller firms a competitive advantage against larger companies. The customer look forward to services according to store type, customers expect a wide range of service in specialty stores compared to discount stores.

Quality is another way of explaining the concept of perceived quality is by looking at the quality dimensions. What customers obtain and how they obtain it, or in other words the technical and functional quality. Every time an interaction between a customer and a seller occurs, the outcome of the interaction will affect the customer's perceptions.

3) All India Association of Industries
80 percent of the total employments in India are generated by the small and medium scale enterprises (SMEs). 480 million jobs were created by small and medium scale enterprises where as organized sectors have created 29 million jobs in India.

In the year 1956 Shri Babubhai M. Chinai established the all India association of industries in the region of Mumbai and has over 1500 members and it represent over 50000 industries. 70 percent members are from SME sector. The core functions are it represents its members on various national and regional level panels and with the financial institutions on economic, trade and fiscal issues. Activities like organizing seminars, workshops, trade fairs, business meetings, trade delegations are carried out. It help business forum to provide information and also to promote domestic and international trade Business meetings with international dignitaries, senior government officials, bankers and high ranking business delegations from overseas are organised by association. It has also signed over 200 agreements with international trade promotion bodies and chamber of commerce from over 50 countries. The association constantly promotes large, medium and small scale industries involved in all manufacturing and service sectors.

4) Confederation of Indian Industries (CII)
The Confederation of Indian Industry (CII) was established in the year 1895 which has 9000 members which include both the private as well as public sectors. It also includes SMEs, MNCs member and has an indirect membership of 300,000 enterprises from more than 200 national and regional sectoral industry bodies. The main aim is to create an environment which is helpful to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.CII is a non-government organisation playing a role in India's development process. CII has more than 60 offices, 9 Centers of Excellence, in India. It also has overseas offices in various countries as well as institutional partnerships in more than 120 countries; CII serves as a suggestion point for Indian industry and the international business community. The role of CII is to spot and build up industry's role in the economic development of the country, to act as a channel in bringing about the growth and development of Indian Industry.

5) Federation of Association of Small Industry of India.
The Federation of Associations of Small Industries of India (FASII) was founded in the year 1959 and was sponsor by the Government of India and at the instance of Pandit Jawaharlal Nehru and Shri Manubhai Shah, Former Union Industries Minister. FASII's Building was inaugurated by the then President of India Late Dr. S. Radhakrishnan in the year 1963. The Headquarter is situated in New Delhi.

The Federation comprises, predominantly, associations of micro and small enterprises as members with their membership ranging from a few hundreds to thousands. FASII covers the entire range of micro and small enterprises like spinning, chemicals, plastics, agro, food-processing, textile, engineering, electronics, electrical, handlooms, handicrafts, etc. Many numbers of individual members also occupy the rolls of FASII Membership.

6) Association of Chamber Of Commerce and Industry In India
It was established in 1920 representing all regions of India. It represents the interests of more than 4, 50,000 direct and indirect members across the country. Through its mixed membership, it combines the industrial spirit and owners of business with management skills and expertise of professionals to set itself apart as a Chamber with a difference.

Currently, it has more than 100 National Councils covering the entire economic activities in India. It has been especially recognized as a important voice of Indian industry in the field of Corporate Social Responsibility, Environment & Safety, HR & Labour Affairs, Corporate Governance, Information Technology, Biotechnology, Telecom, Banking & Finance, Company Law, Corporate Finance, Economic and International Affairs, Mergers & Acquisitions, Tourism, Civil Aviation, Infrastructure, Energy & Power, Education, Legal Reforms, Real Estate and Rural Development, Competency Building & Skill Development to mention a few.

7) All India Management Association (AIMA)
The first industrialization policy was formed in year 1956 and after that in the year 1957 the All India Management Association (AIMA) was established. The president is T. V. Mohandas Pai for the year 2018. AIMA conducts the Management Aptitude Test which is used by 600 business schools across India. Various

exams organized by All India Management Association include the Research Management Aptitude Test, Under Graduate Aptitude Test, Accredited Management Teacher certification and other customized tests. All India Management Association is based on a union of 67 Local Management Associations which include Qatar Indian Management Association and Mauritius Management Association It represent in nationwide forums and organizations and annual awards.

RESEARCH METHODOLOGY

A Study "A Study on the perception of Industries about Industrial Association In Dadra and Nagar Haveli" is a study done on with the data collection from both the sources i.e. Primary and Secondary data. The research was done onto the members of industrial association with a sample size of 30 respondents. The sampling technique used was random sampling. **The tool for analysis was questionnaire which includes 8 Question.** The study aims to understand the perception of industries about industrial association and their services.

ANALYSIS

The analysis is based on the survey conducted among 30 Existing clients.

- **Silvassa Industries Association has more members associated with them compared to other.**

Chart no-1
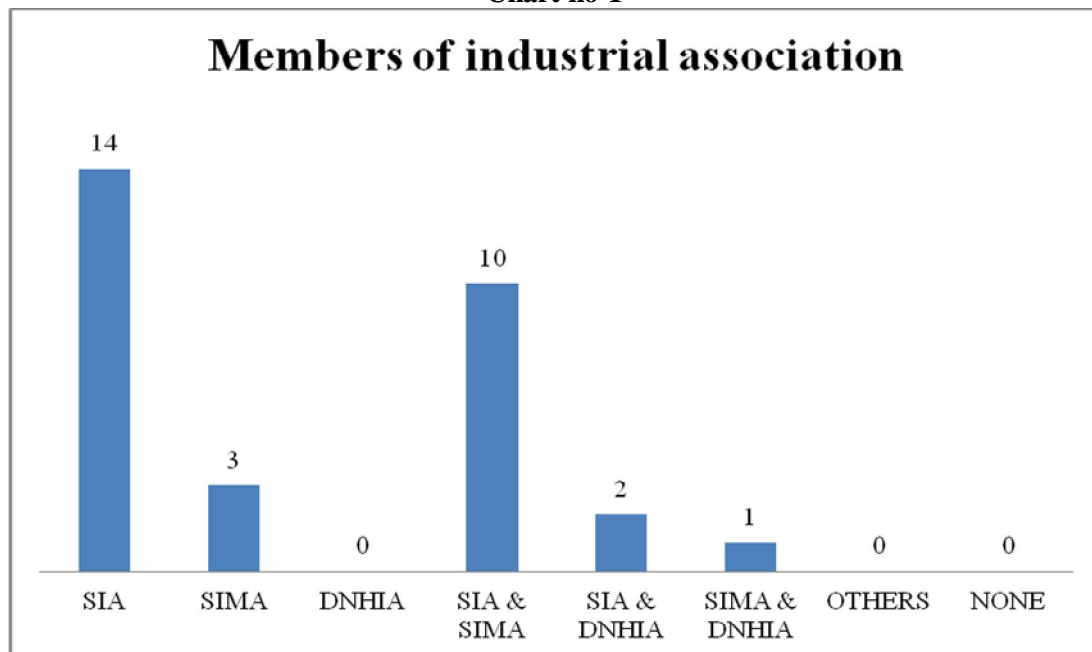
Source: Primary data

- **Major services received from the industrial association to their members are legal, training and support in the CSR activities.**

Chart no-2
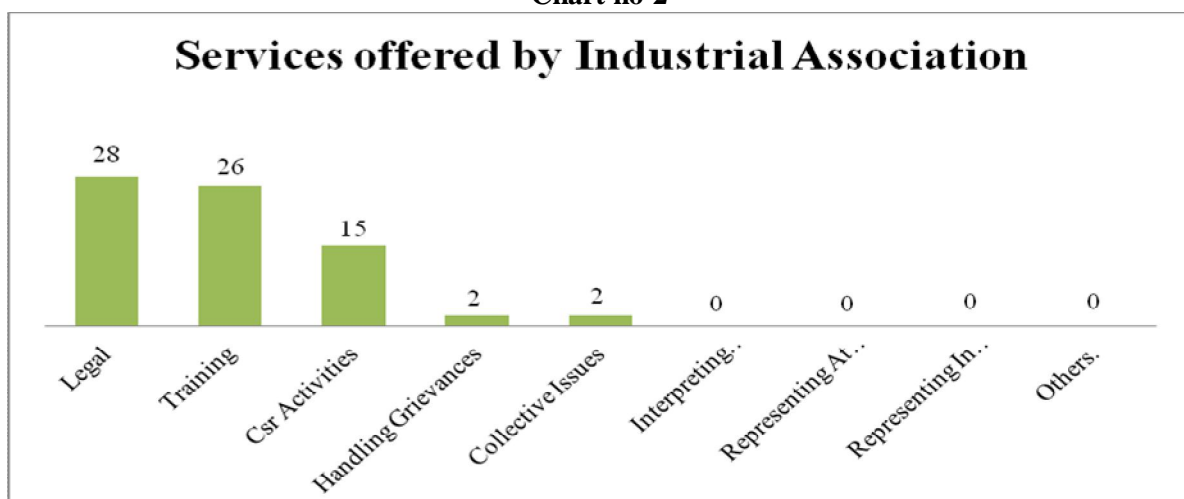
Source: Primary data

- **Timely Meetings of the Representatives and Creating Awareness about New Policies are the Success factors of any industrial association.**

Table no-1

Sr No	Factors	Weight-age (out of 10)
1	Frequent Activities.	5.27
2	Less Membership Fees	5.77
3	Timely Meetings Of The Representatives	6.47
4	Creating Awareness About New Policies	6.30
5	Effective Representation	5.90

Source: Primary data

- **Increase in indoor trainings, less membership fees and unity of industries are the improvement areas of industrial association.**

Chart no-3
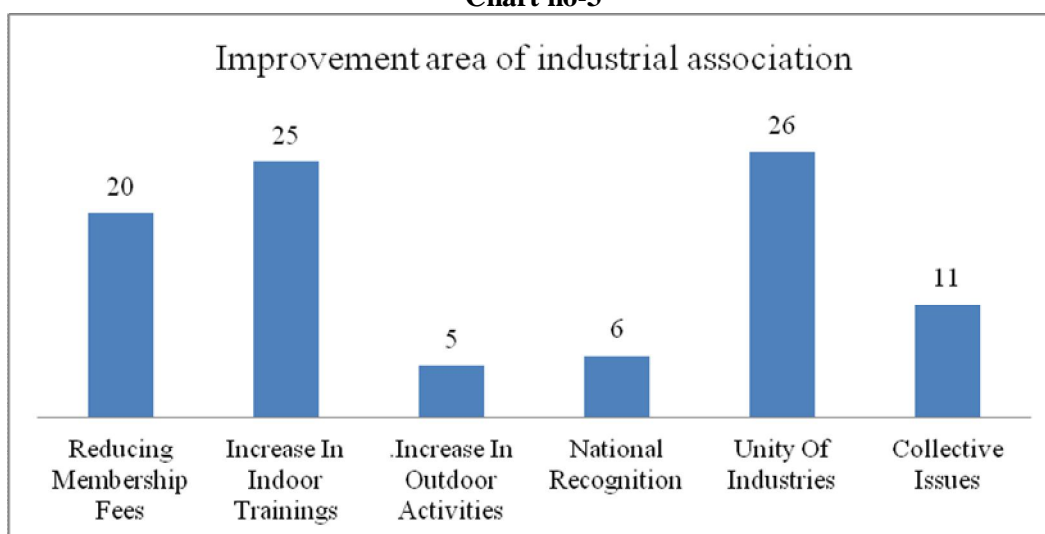
Source: Primary data

- **Major Services needed by association are trade fairs, exhibitions and industrial trainings.**

Chart no-4
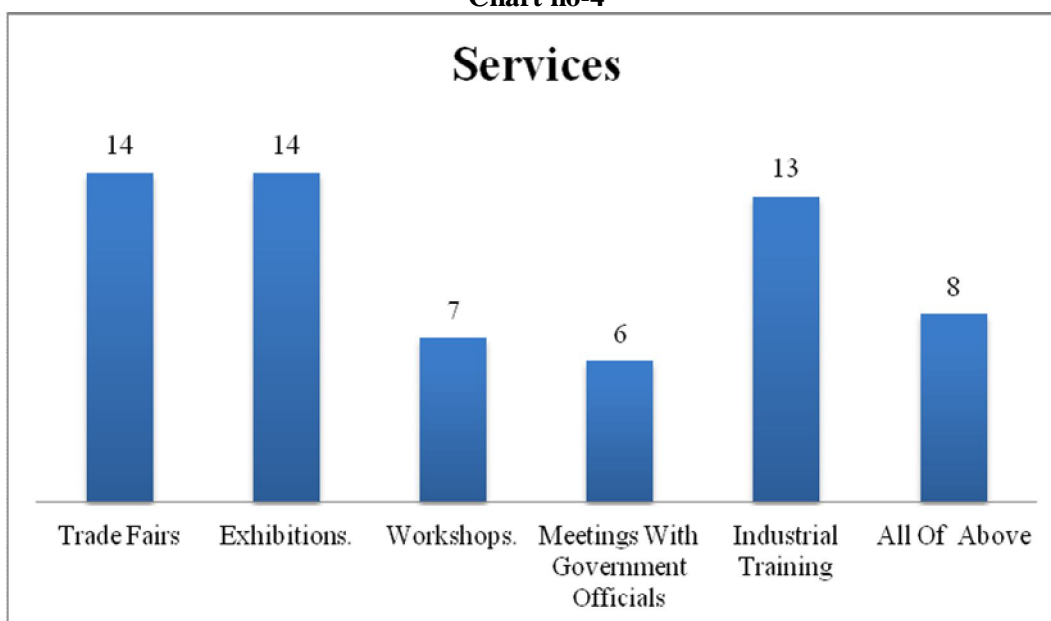
Source: Primary data

- **Limitation of industrial association**

The responses were taken from the industries person from their busy schedules. Out of the 30 respondent 26 were of SIA and hence it does not specify the entire association of India

Table no-2

Ratings	1	2	3	4	5	6	7	8	9	10	**WAR**
Responses	0	0	0	1	4	3	8	8	6	0	**7.2**

- **Recommendation of Model For Effective Working**

Chart no-5
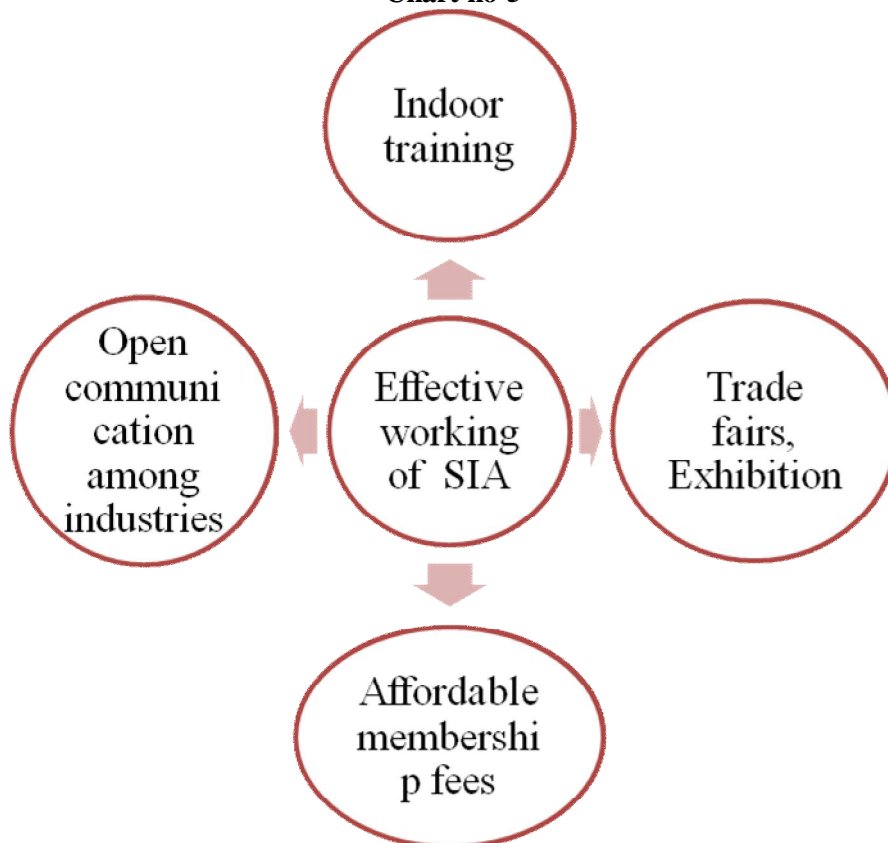
Source: Author's contribution

Details

1. Indoor Training: Its means the industrial association needs to provide the indoor training within the member of industrial association.

2. Trade fairs & Exhibition: The industrial association should regularly organise the trade fairs and exhibition to support the industries. The exhibitions which are organised help the industries to make new customer as well as expand the reach of business.

3. Affordable membership fees: Money is considered the most important factor in the organisation and every organisation try to reduce their cost. The industrial association subscription fees should be minimal and also affordable by all scale of industries

4. Open communication among industries: If any organisation needs help they should openly communicate to industrial association or to the other industries and there should be open communication between them if there is any function or exhibitions.

GLOSSARY

Sr No.	Short form	Full form
1	CII	Confederation of Indian Industry
2	FASII	Federation of Associations of Small Industries of India
3	AIMA	All India Management Association
4	SIA	Silvassa industries association
5	SIMA	Silvassa Industries And Manufacturers Association
6	DNHIA	Dadra & Nagar Haveli Industries Association

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ACCORDING, TO THE EQUIVALENT MASS-SPRING MODEL, STUDY THE TRANSIENT EFFECT ON THE UNDAMPED & DAMPED MULTI-STOREY BUILDING STRUCTURE.

Dinesh Sen[1] and Anosh Kujur[2]

Assistant Professor & HOD[1] and Student[2], Department of Civil Engineering, VEC, Lakhanpur

ABSTRACT

The carried work has based on transient vibration response of multiple degrees of freedom (MDOF) system. By this work study of Time–history analysis and prediction of the displacement for excitation has done. For the MDOF system, we have taken the four-storey building to done transient vibration. We establish the equivalent spring-mass system. Transient analysis has done for both Undamped and Damped of the forced system of multiple degrees of freedom (MDOF) system. In the case of the Damped system, we have done three stages of damping, i.e., (1) Underdamped system, (2) Critically damped system, (3) Overdamped system. The time-history graph obtained for two different time stages i.e. 0.001 sec & 0.01 sec with initial time 0.000001 sec. The natural frequency has determined by both theoretical calculation and ANSYS. The whole study of transient vibration makes it possible to predict the damping values that oppose any kind of sudden impact or force vibration, such as blasts, earthquakes and tsunamis. The ANSYS is the modelling and simulation software is used to perform the transient vibration response. The Mode Superposition method is used by ANSYS to calculate the structure response, This Software based on Finite Element Analysis.

Keywords: Transient vibration response, MDOF, Time-history graph, Excitation, Spring-mass system, Undamped of forced system, Damped of forced system, Underdamped system, Critically damped system, Overdamped system, Natural frequency, , ANSYS, Mode superposition method, Modelling and Simulation.

(1) INTRODUCTION

In this experiment Transient response analysis is done and compute the forced dynamic response. The purpose of a transient response analysis is to compute the behaviour of a structure subjected to time-varying excitation. The transient vibration makes the highly sudden impact which causes our structures is the collapse. The transient response analysis provides sufficient damping result for structures which resist various manmade or natural forces like earthquakes, blast and machine vibrations. In any structure, if there is no dynamic force is applied in this condition the structure vibrates in steady state form this is called steady state vibration. And if the dynamic force is applied to the structure is vibrated due to the effect of dynamic force this stage is called transient state and the vibration is called transient vibration. After the effect of the dynamic force is over the structure is went back to the form of steady-state vibration. A multi-degree of freedom system (MDOF) may be a multi-storey building, a Bridge including its superstructure and sub-structure, a flexural member, a machine foundation, an underground metro station etc. We have taken four storey frames with the mass is lumped at each floor; therefore, the structure possesses four degrees of freedom.

(2) DETERMINATION OF NATURAL FREQUENCY

A four storey building masses of floor m1 =m2 = m3 = 55500 kg and m4 = 27750 kg building height of each floor is 3m, Forced applied in the 1st, 2nd, 3rd, storey i.e. F_1 = 3500000 N, F_2 = 2500000 N, F_3 = 1500000 N and F_4 = 500000 N, stiffness provided in each storey is 4×10^6 N/m.
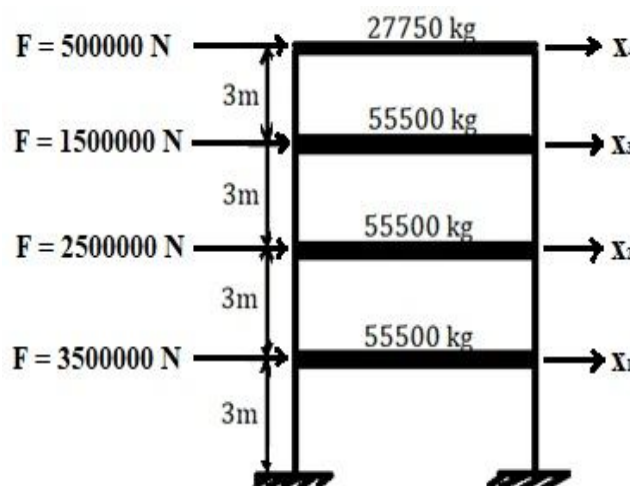
Fig (2.1):- 4- story building

(2.1) Determine Natural Frequencies by the Matrix Method:-
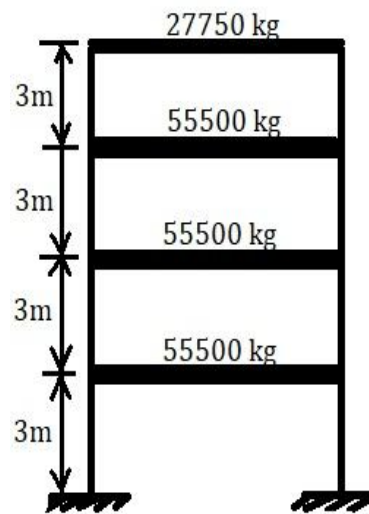
Fig (2.2):- 4-storey building
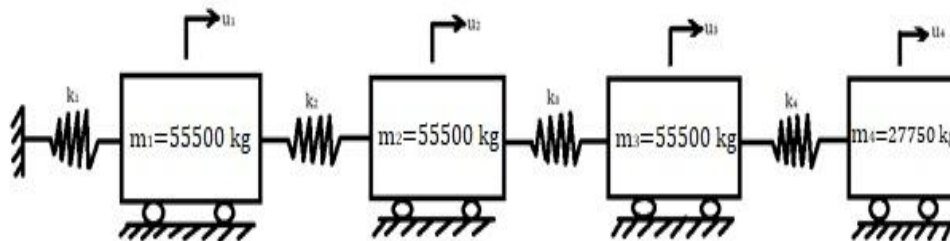
Fig (2.3):- Equivalent mass-spring system
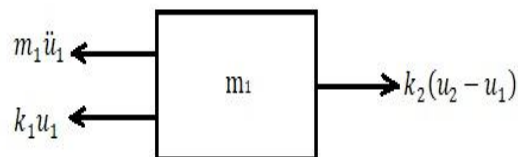
Fig (2.4):- Free body diagram of mass 1
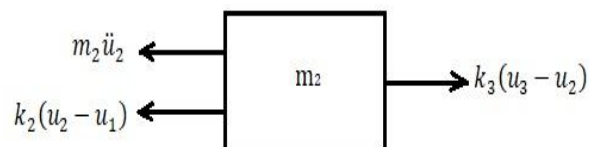
Fig (2.5):- Free body diagram for mass 2
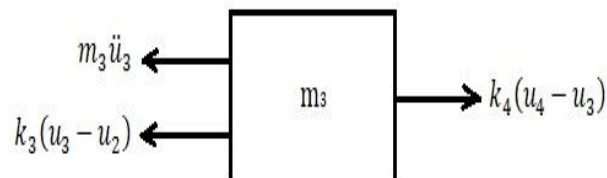
Fig (2.6):- Free body diagram for mass 3
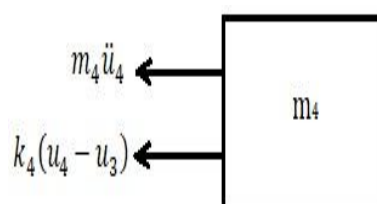
Fig (2.7):- Free body diagram for mass m 4

Masses is given as $m_1 = 55500$ kg, $m_2 = 55500$ kg, $m_3 = 55500$ kg, $m_4 = 27750$ kg

$$K_1 = k_2 = k_3 = k_4 = 2 \times \frac{12EI}{L} = \frac{2 \times 12 \times 4.5 \times 10^6}{3^3} = 4 \times 10^6 \text{ N/m}$$

The following equation obtained from free body diagram

$$m_1 \ddot{u}_1 + (k_1 + k_2)u_1 - k_2 u_2 = 0 \qquad \text{------ (1)}$$

$$m_2 \ddot{u}_2 - k_2 u_1 + (k_2 + k_3)u_2 - k_3 u_3 = 0 \qquad \text{------- (2)}$$

$$m_3 \ddot{u}_3 - k_3 u_2 + (k_3 + k_4)u_3 - k_4 u_4 = 0 \qquad \text{------- (3)}$$

$$m_4 \ddot{u}_4 - k_4 u_3 + k_4 u_4 = 0 \qquad \text{------- (4)}$$

Write the equations (1), (2), (3) & (4) into the equation of motion of an MDOF system subjected to undamped free vibration is given as

$$[m]\{\ddot{u}\} + [k]\{u\} = \{0\} \qquad \text{-------- (5)}$$

$$\begin{bmatrix} m_1 & 0 & 0 & 0 \\ 0 & m_2 & 0 & 0 \\ 0 & 0 & m_3 & 0 \\ 0 & 0 & 0 & m_4 \end{bmatrix} \begin{Bmatrix} \ddot{u}_1 \\ \ddot{u}_2 \\ \ddot{u}_3 \\ \ddot{u}_4 \end{Bmatrix} + \begin{bmatrix} (k_1+k_2) & -k_2 & 0 & 0 \\ -k_2 & (k_2+k_3) & -k_3 & 0 \\ 0 & -k_3 & (k_3+k_4) & -k_4 \\ 0 & 0 & -k_4 & k_4 \end{bmatrix} \begin{Bmatrix} u_1 \\ u_2 \\ u_3 \\ u_4 \end{Bmatrix} = 0 \qquad \text{------ (6)}$$

$$1000 \begin{bmatrix} 55.5 & 0 & 0 & 0 \\ 0 & 55.5 & 0 & 0 \\ 0 & 0 & 55.5 & 0 \\ 0 & 0 & 0 & 27.75 \end{bmatrix} \begin{Bmatrix} \ddot{u}_1 \\ \ddot{u}_2 \\ \ddot{u}_3 \\ \ddot{u}_4 \end{Bmatrix} + 4 \times 10^6 \begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 1 \end{bmatrix} \begin{Bmatrix} u_1 \\ u_2 \\ u_3 \\ u_3 \end{Bmatrix} = 0 \qquad \text{------ (7)}$$

The characteristic equation is $|(k) - (m)\omega_n^2| = 0$

$$\left| 4 \times 10^2 \begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 1 \end{bmatrix} - 1000\omega_n^2 \begin{bmatrix} 55.5 & 0 & 0 & 0 \\ 0 & 55.5 & 0 & 0 \\ 0 & 0 & 55.5 & 0 \\ 0 & 0 & 0 & 27.75 \end{bmatrix} \right| = 0 \qquad \text{------ (8)}$$

$$\left| \begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 1 \end{bmatrix} - 2.5 \times 10^{-4} \omega_n^2 \begin{bmatrix} 55.5 & 0 & 0 & 0 \\ 0 & 55.5 & 0 & 0 \\ 0 & 0 & 55.5 & 0 \\ 0 & 0 & 0 & 27.75 \end{bmatrix} \right| = 0 \qquad \text{------- (9)}$$

Let $2.5 \times 10^{-4} \omega_n^2 = \lambda$ we get

$$\left| \begin{bmatrix} (2-55.5\lambda) & -1 & 0 & 0 \\ -1 & (2-55.5\lambda) & -1 & 0 \\ 0 & -1 & (2-55.5\lambda) & -1 \\ 0 & 0 & -1 & (1-27.75\lambda) \end{bmatrix} \right| = 0 \qquad \text{------- (10)}$$

Expanding the determinant, we get

$$4743970.031\lambda^4 - 683815.5\lambda^3 + 30802.5\lambda^2 - 444\lambda + 1 = 0 \qquad \text{------- (11)}$$

Solving the above equation, we get

$$\lambda_1 = 0.00274308 = \lambda_2 = 0.0222456 = \lambda_3 = 0.0498264 = \lambda_4 = 0.069329$$

We know that $2.5 \times 10^{-4} \omega_n^2 = \lambda$

Thus $\quad 2.5 \times 10^{-4} \omega_1^2 = \lambda_1 = 0.00274308$

$$\omega_1^2 = \frac{0.00274308}{2.5 \times 10^{-4}} = \omega_1 = 3.3125 \frac{rad}{s} = 0.53 \, Hz$$

$$\omega_2^2 = \frac{0.0222456}{2.5 \times 10^{-4}} = \omega_2 = 9.433 \frac{rad}{s} = 1.5 \, Hz$$

$$\omega_3^2 = \frac{0.0498264}{2.5 \times 10^{-4}} = \omega_3 = 14.12 \frac{rad}{s} = 2.25 \, Hz$$

$$\omega_4^2 = \frac{0.069329}{2.5 \times 10^{-4}} = \omega_4 = 16.6528 \frac{rad}{s} = 2.65 \, Hz$$

The Natural frequencies (or) Eigen values are

$\omega_1 = 0.53 \, Hz$

$\omega_2 = 1.5 \, Hz$

$\omega_3 = 2.25 \, Hz$

$\omega_4 = 2.65 \, Hz$

(2.2) Determination of Natural Frequencies by ANSYS
(2.2.1) Material and Geometry
Structural steel used for making masses m1,m2,m3 and m4 with density 7850 kg/m^3 and young modulus and Poisson's ratio of steel is $2 \times [10]^{11}$Pa and 0.3 after that draw geometry by open Model dialog box from analysis systems of the toolbox and attach springs and provide stiffness value to all as $4 \times [10]^6$N/m.

(2.2.2) Meshing: -.Meshing divides the whole components into many small elements to distribute applied load uniformly to whole components. All faces were selected for mesh generation and the total number of nodes and elements were observed at 4431 and 773 respectively.
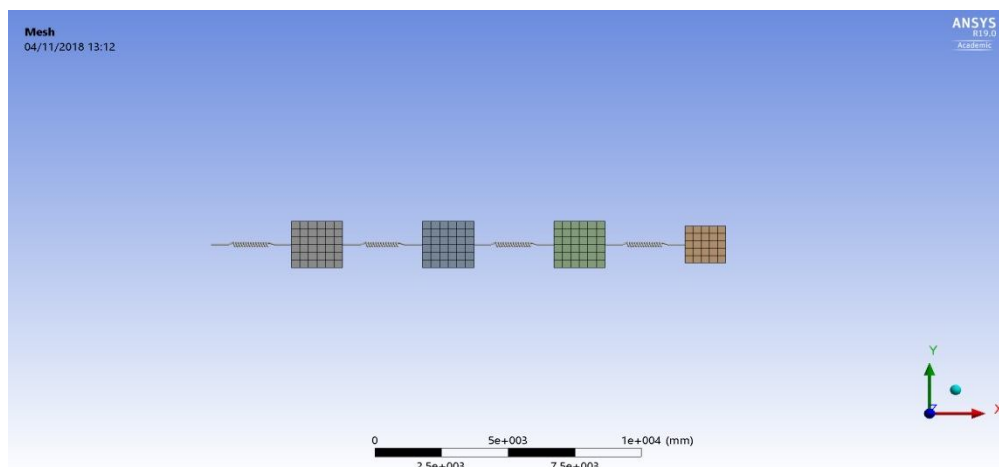
Fig (2.8):- Meshed model of mass-spring system

(2.2.3) Frequencies obtained by ANSYS
The obtained frequency results are shown below in Table (1) Mode and Frequency

Mode	Frequencies
1	0.52719
2	1.5013
3	2.2469
4	2.6504

(2.2.4) Comparison of Theoretical calculation and ANSYS:-

	Theoretical result	ANSYS
Frequency 1 (Hz)	0.53	0.52719
Frequency 2 (Hz)	1.5	1.5013
Frequency 3 (Hz)	2.25	2.2469
Frequency 4 (Hz)	2.65	2.6504

The theoretical solved result almost matched with ANSYS results. Hence solution from theoretical solved results is valid and acceptable.

1. TRANSIENT VIBRATION RESPONSE OF UNDAMPED OF FORCED SYSTEM USING ANSYS

The 4-storey undamped of the forced system shown below in fig (3.1)
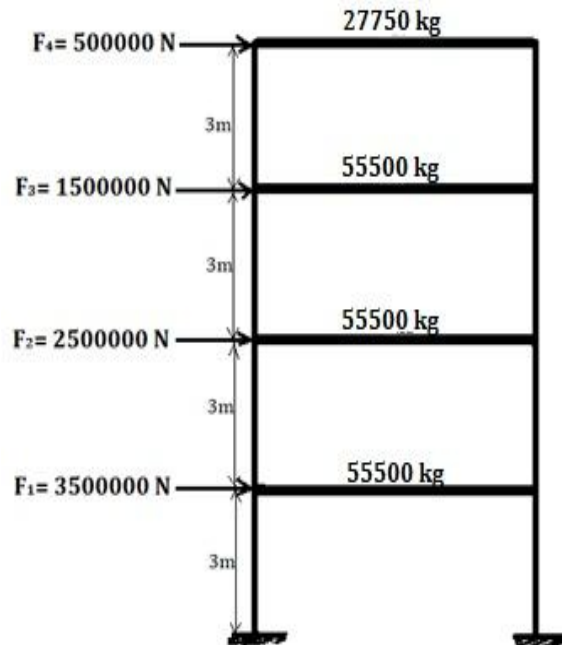
Fig (3.1):- Undamped 4-storey building

(3.1) Equivalent undamped Spring-Mass system of 4-storey building with external applied force:-
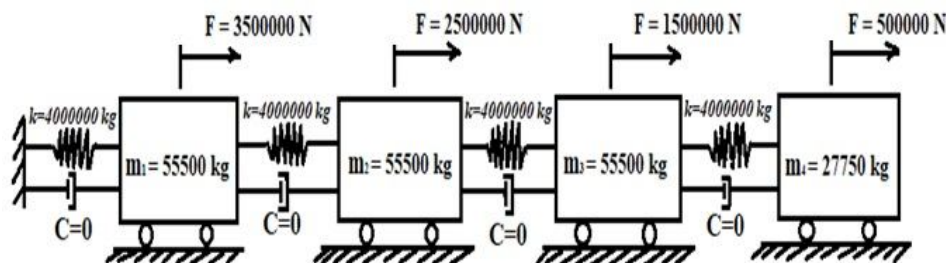
Fig (3.2):- equivalent Undamped spring-mass system

(3.2) Equivalent Spring-mass model in ANSYS for 4-DOF Undamped of Forced System:-
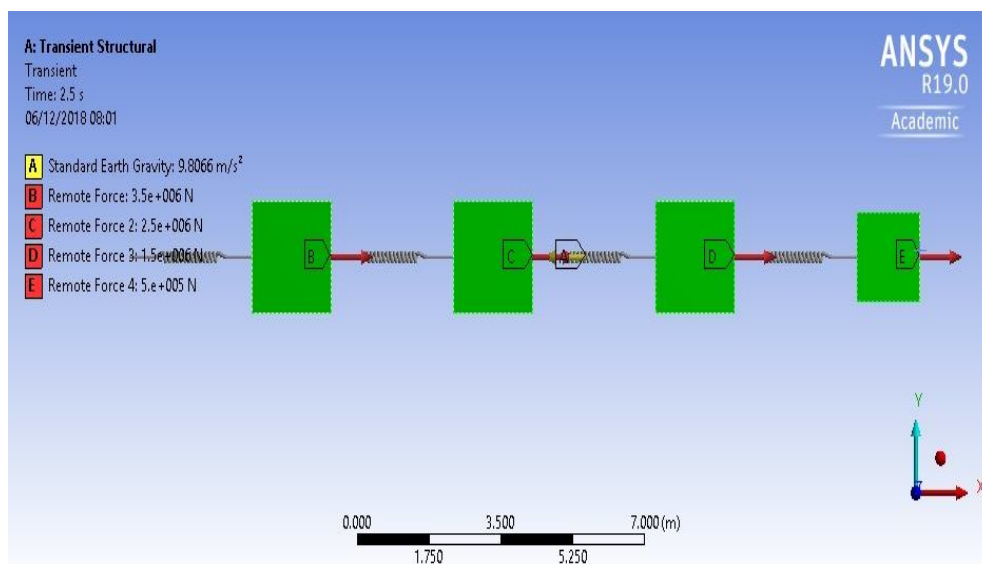
Fig (3.3):- Undamped spring-mass Model by ANSYS for Undamped of Forced system

(3.3) 4-DOF Transient Vibration Response graph for Undamped of Forced System obtained by ANSYS:-

The 4-DOF Transient Vibration Response for (t) = 0.001 sec, (t) = 0.01 sec, initial time has taken 0.000001 sec.

(3.3.1) Graph for undamped system at the time (t) = 0.001 sec:-The Transient Vibration Response for 4-DOF Undamped system obtained by ANSYS has shown below.
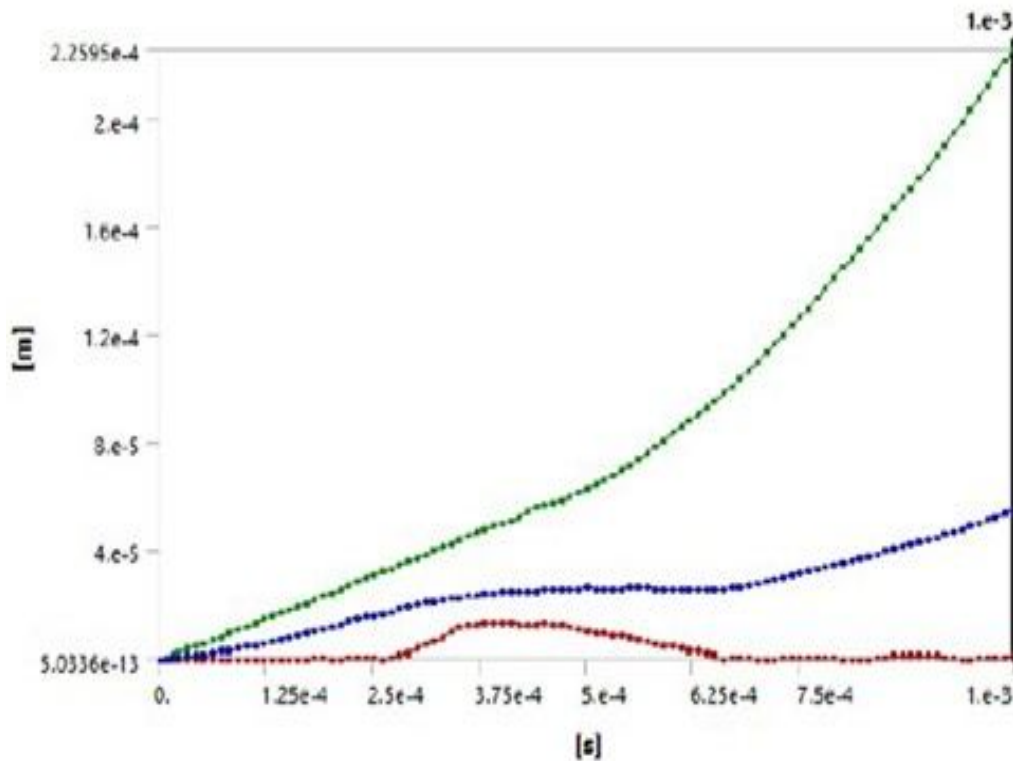
Fig (3.4):- 4-DOF Undamped Transient Vibration Response at Time (t) = 0.001 sec

(3.3.2) Graph for undamped system at time (t) =0.01 sec:-
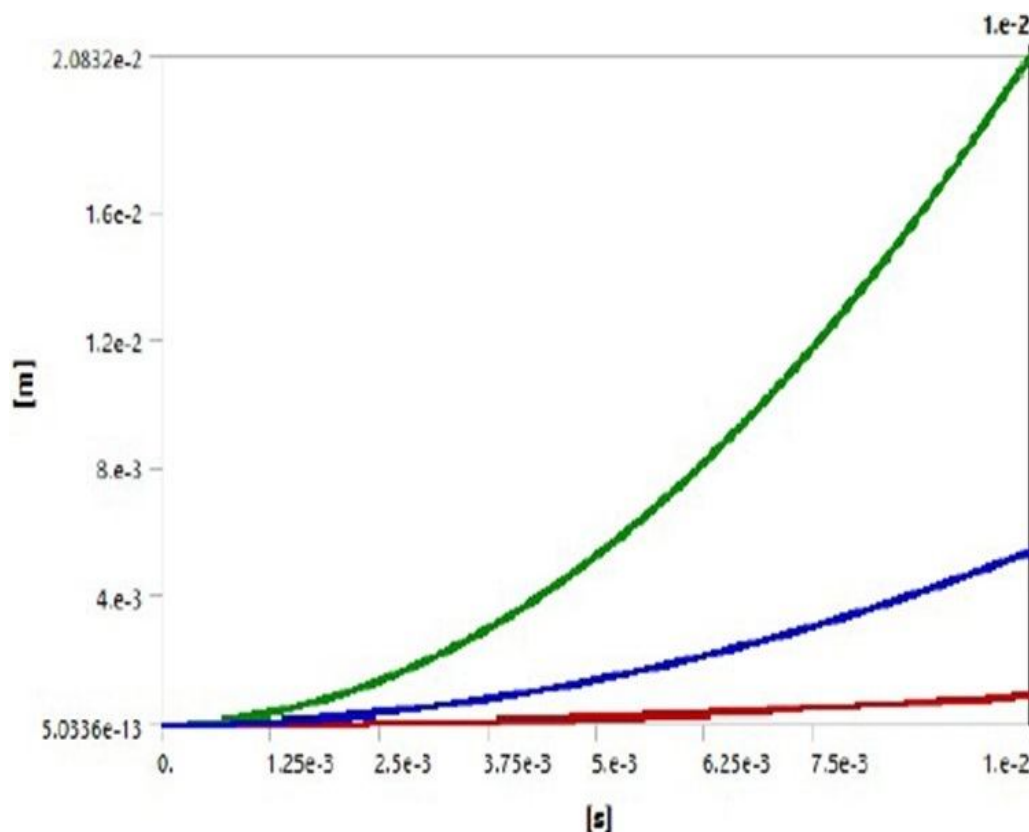
Fig (3.5):- 4- DOF Undamped Transient Response at Time (t) = 0.01 sec

(3.3.3) Graph for undamped system at time (t) =0.1 sec:-
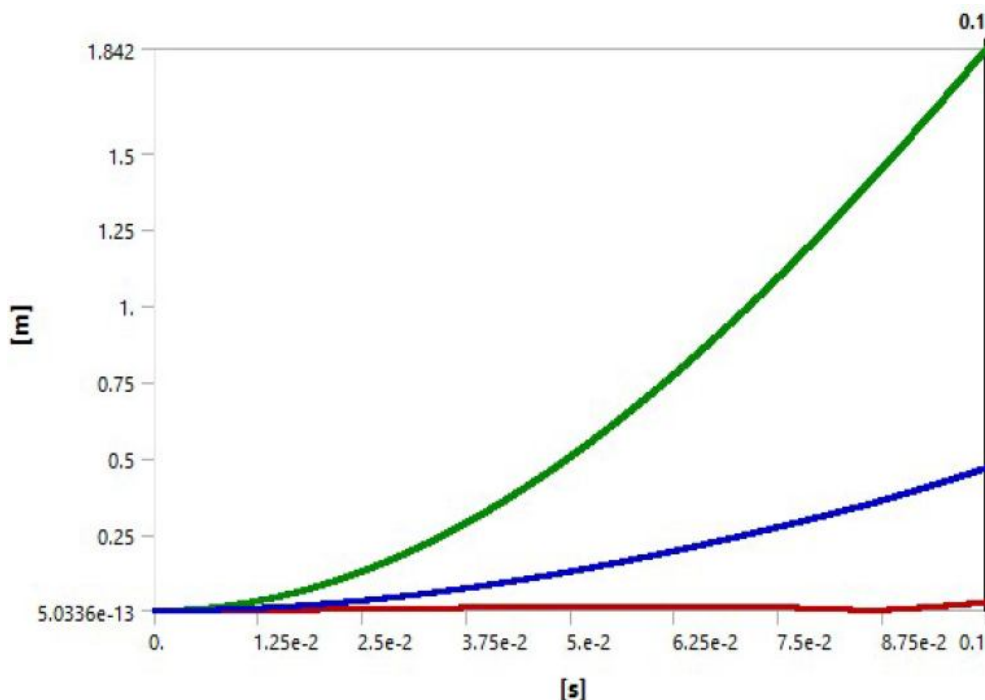
Fig (3.6):- 4- DOF Undamped Transient Response at Time (t) = 0.1 sec

(3.4) ANALYSIS RESULT FOR MDOF FORCED VIBRATION OF UNDAMPED SYSTEM

• Result for Min. & Avg. Transient Response of MDOF forced vibration of Undamped system at three different time stages i.e. $(t)_1 = 0.001$ sec, $(t)_2 = 0.01$ sec, $(t)_3 = 0.1$ sec are presented in Table 3.1

• Maximum displacement overtime (t) = 0.1 sec presented in Table 3.2

Table-3.1: Min. & Avg. Transient Response of MDOF forced vibration of Undamped system.

Time(t)	Minimum	Average
0.001 sec	0.0000012076 m	0.000054574 m
0.01 sec	0.00084015 m	0.005345 m
0.1 sec	0.027184 m	0.4673 m

Table 3.2 MDOF forced vibration of Undamped system Maximum displacement overtime (t) = 0.1 sec.

Time(t)	Maximum
0.1 sec	1.842 m

(4) TRANSIENT VIBRATION RESPONSE FOR DAMPED OF FORCED SYSTEM USING ANSYS

(4.1) 4-DOF TRANSIENT VIBRATION RESPONSE FOR DAMPED OF FORCED SYSTEM

(4.1.1) for Underdamped system

If the damping ratio $(\rho) = \frac{c}{2m\omega_n} < 1.0$ it is called underdamped system.

Where c = damping & ω_n = natural damping in rad/sec

Provide damping for maximum frequency i.e. ω_n=2.65Hz =16.65 rad/sec.

Taking Damping value $c_1 = c_2 = c_3$ = 924075 N-s/m for 1st, 2nd, and 3rd storey & c_4=462037.5 N-s/m for 4th storey.

Check 1st, 2nd, & 3rd storey damping:-

Damping ratio $(\rho) = \frac{c}{2m\omega_n} = \frac{924075}{2 \times 55500 \times 16.65} = 0.5 < 1$ Hence 1st, 2nd, & 3rd storey is underdamped.

Check 3rd storey damping:-

Damping ratio $(\rho) = \frac{c}{2m\omega_\eta} = \frac{462037.5}{2 \times 27750 \times 16.65} = 0.5 < 1$ Hence 3rd storey is underdamped.
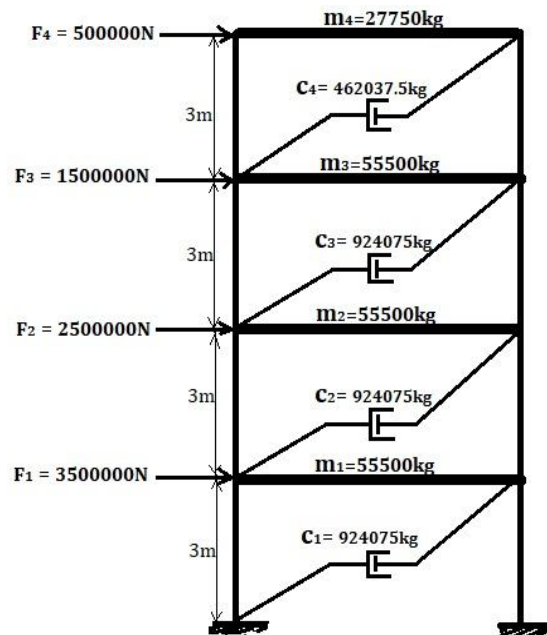
Fig (4.1):-4-storey underdamped of forced system

(4.1.2) Equivalent Spring-mass system for underdamped of forced system:-Equivalent spring-mass system for 4-storey building in the underdamped condition.
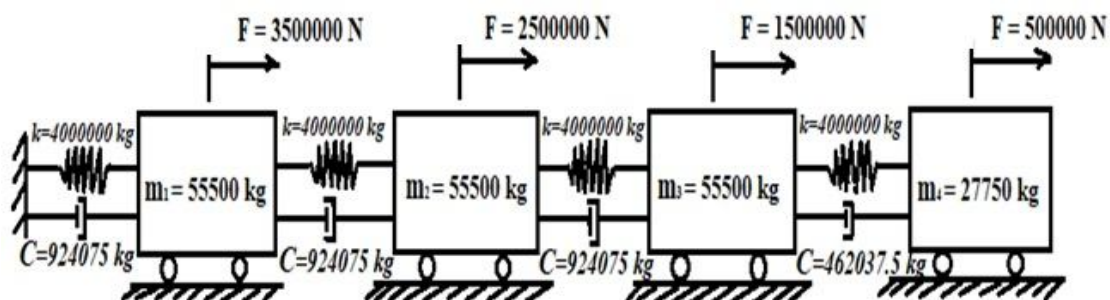
Fig (4.2):- Equivalent Spring-mass system for 4-storey building underdamped system

(4.1.3) 4-DOF Transient Vibration Response graph for underdamped of Forced System obtained by ANSYS:-The 4-DOF Transient Vibration Response for (t) = 0.001 sec, (t) = 0.01 sec, initial time is 0.000001 sec.

(4.1.3.1) Graph for underdamped system at time (t) = 0.001 sec
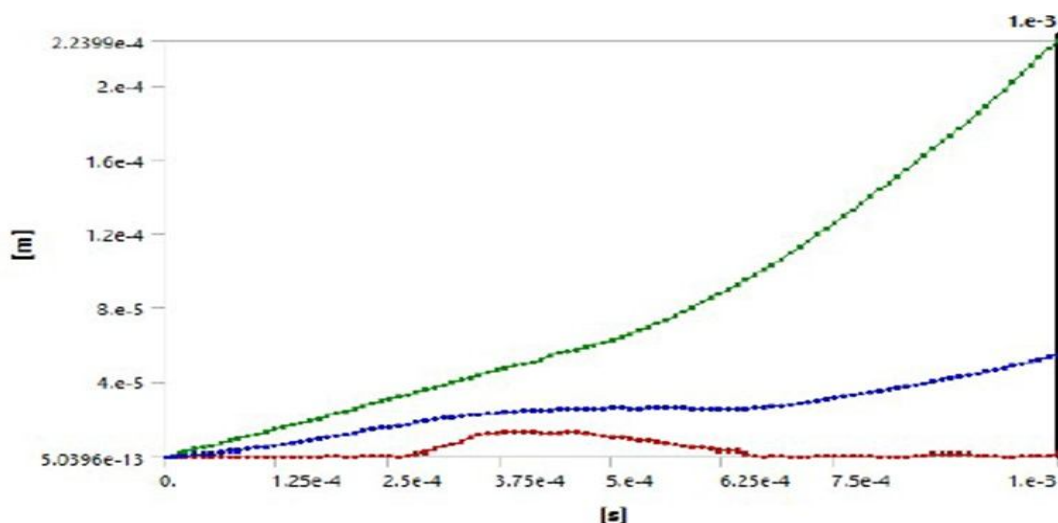
Fig (4.3):- graph for 4-DOF underdamped Transient Response at time (t) = 0.001 sec

(4.1.3.2) Graph for underdamped system at time (t) = 0.01 sec
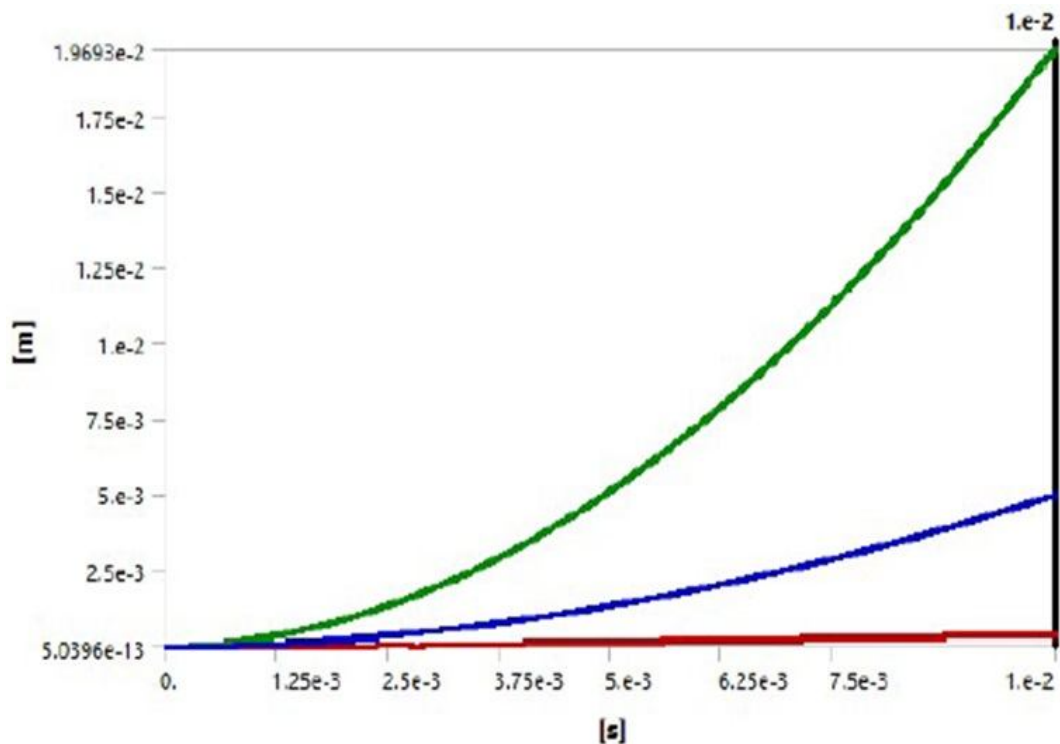
Fig (4.4):- graph for 4-DOF underdamped Transient Response system at (t) = 0.01sec

(4.1.3.3) Graph for underdamped system at time (t) = 0.1 sec
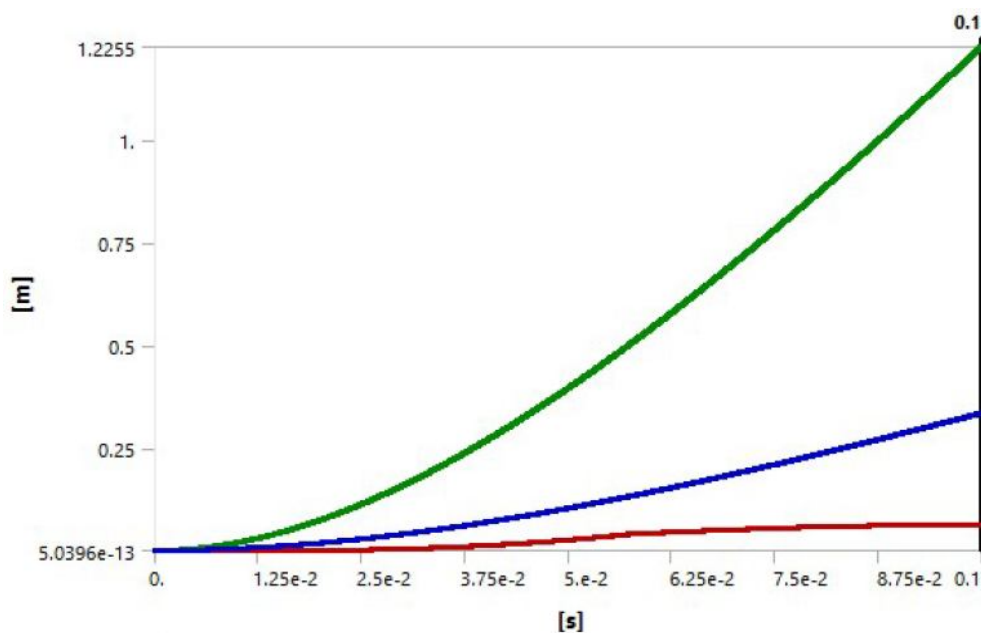
Fig (4.5):- 4-DOF underdamped Transient Response system at (t) = 0.1sec

(4.1.4) Result for MDOF Underdamped Transient Response

• Result for Min. & Avg. Underdamped Transient Response of MDOF forced vibration of damped system at three different time stages i.e. $(t)_1 = 0.001$sec, $(t)_2 = 0.01$ sec, $(t)_3 = 0.1$ sec are presented in Table 4.1

• Underdamped Maximum displacement overtime (t) = 0.1 sec presented in Table 4.2

Table 4.1 Min. & Avg. Underdamped Transient Response of MDOF forced vibration of damped system.

Time(t)	Minimum	Average
0.001 sec	0.0000011683 m	0.000054081 m
0.01 sec	0.00034632 m	0.0049398 m
0.1 sec	0.062767 m	0.33469 m

Table 4.2 MDOF forced vibration of Underdamped system Maximum displacement overtime (t) = 0.1 sec

Time(t)	Maximum
0.1 sec	1.2255 m

(4.2) FOR CRITICALLY DAMPED OF FORCED VIBRATION SYSTEM

Provide damping for maximum frequency i.e. ω_n=2.65Hz =16.65 rad/sec

If the damping ratio $(\rho) = \frac{c}{c_c} = \frac{c}{2m\omega_n} = 1.0$ then it is called critically damped system

Take Damping for 1st, 2nd, 3rd storey $c_1 = c_2 = c_3 = 1848150$ N-s/m

Damping ratio $(\rho) = \frac{c}{c_c} = \frac{c}{2m\omega_n} = \frac{1848150}{2 \times 55500 \times 16.65} = 1$

Hence it is critically damped

Take damping for 4th storey $c_4 = 924075$ N-s/m

Damping ratio $(\rho) = \frac{c}{c_c} = \frac{c}{2m\omega_n} = \frac{924075}{2 \times 27750 \times 16.65} = 1$

Hence it is critically damped.
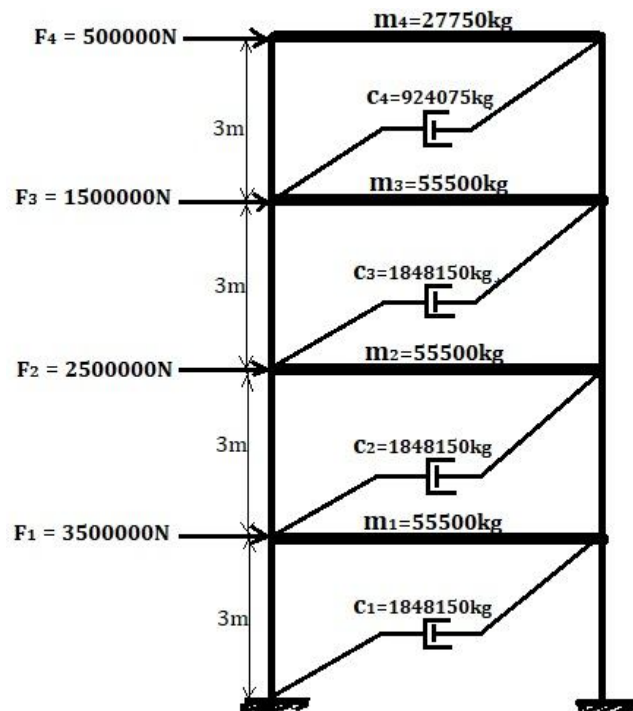
Fig (4.6):-4-storey critically damped system

(4.2.1) Equivalent Critically damped spring-mass system

Equivalent critically damped spring-mass system for 4-storey building without any external force shown below.
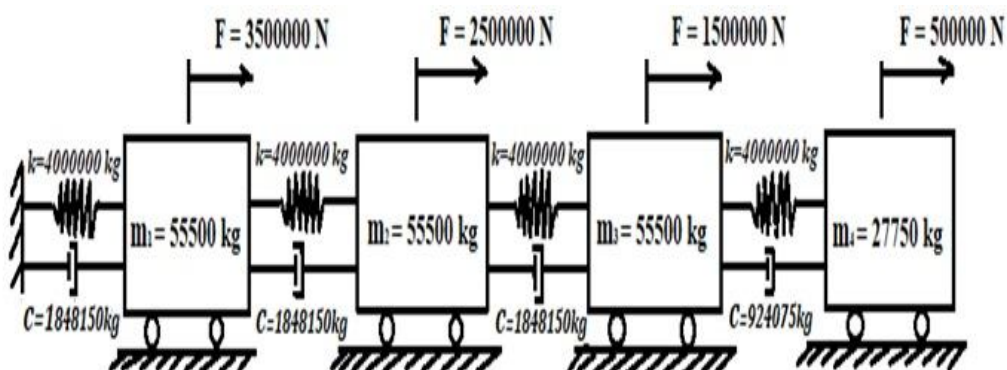
Fig (4.7):- Equivalent critically damped spring-mass system with external force

(4.2.2) Transient Vibration Response graph for critically damped of Forced vibration System:-
Initial time is 0.000001 sec.

(4.2.2.1) Graph for critically damped system at time (t) = 0.001 sec
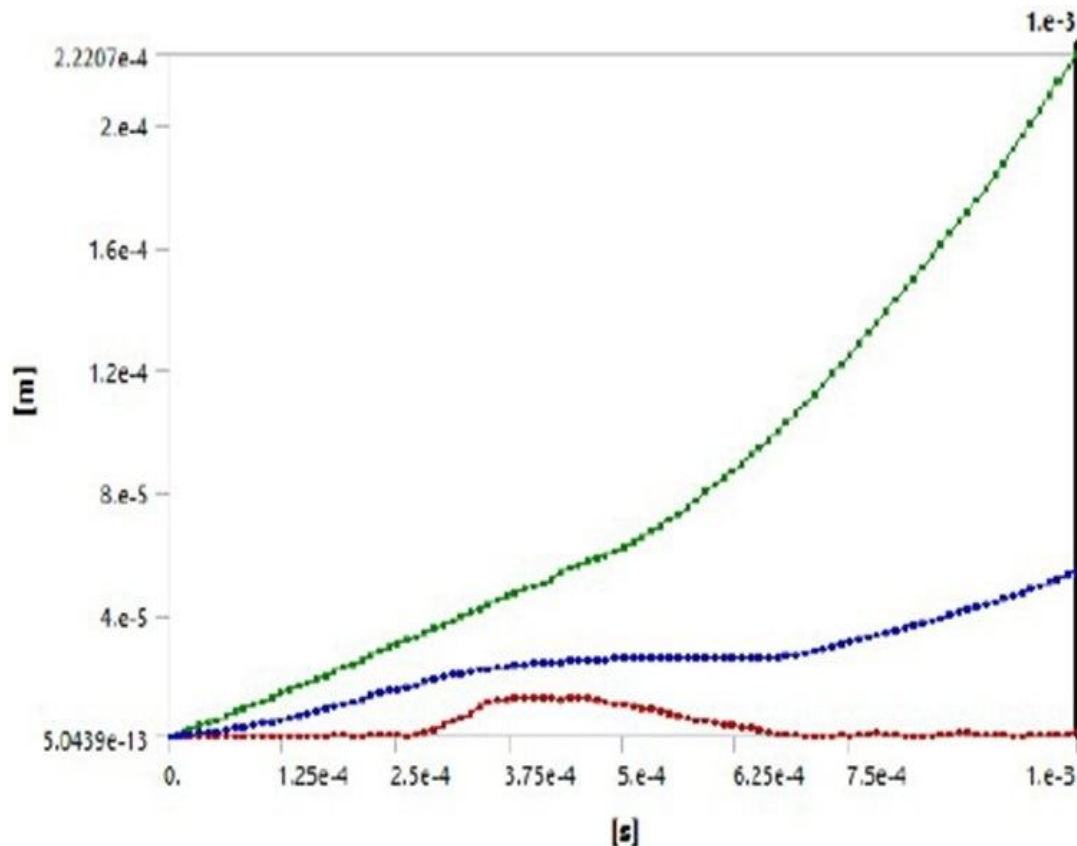
Fig (4.8):- 4-DOF critically damped Transient response at time (t) = 0.001 sec

(4.2.2.2) Graph for critically damped at time (t) = 0.01 sec
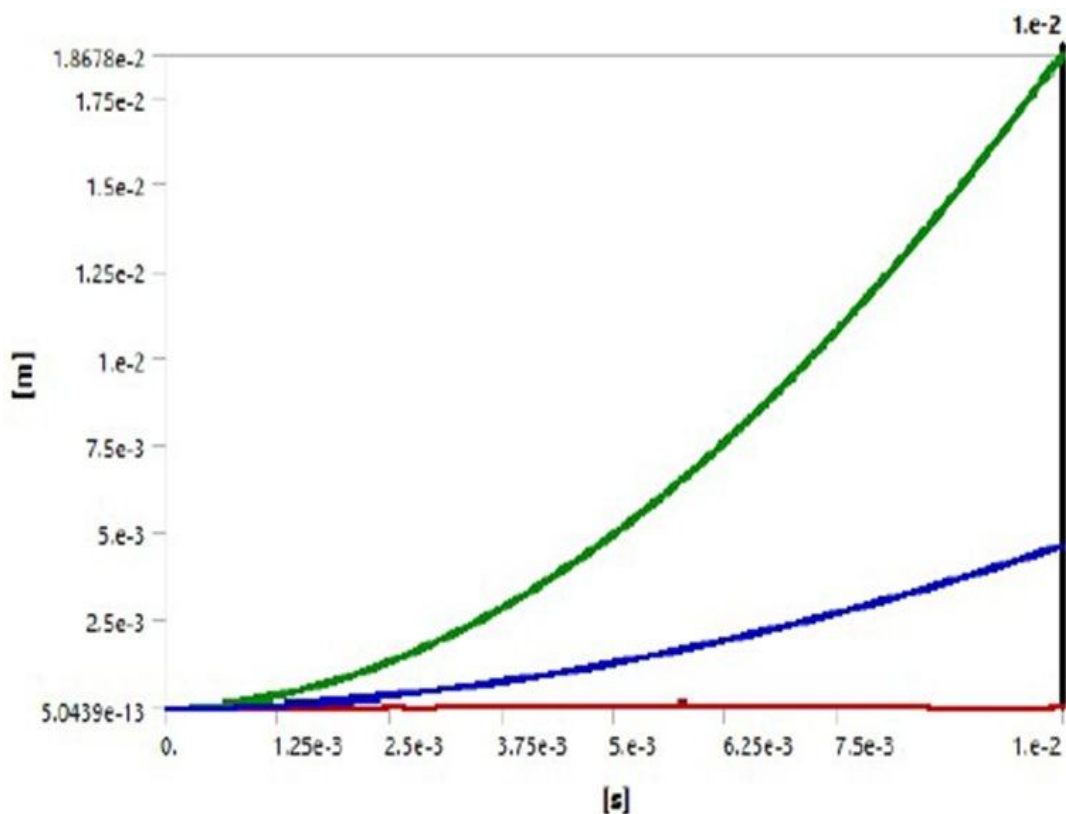
Fig (4.9):- 4-DOF critically damped Transient vibration response at (t) = 0.01 sec

(4.2.2.3) Graph for Critically Damped system at time (t) = 0.1 sec
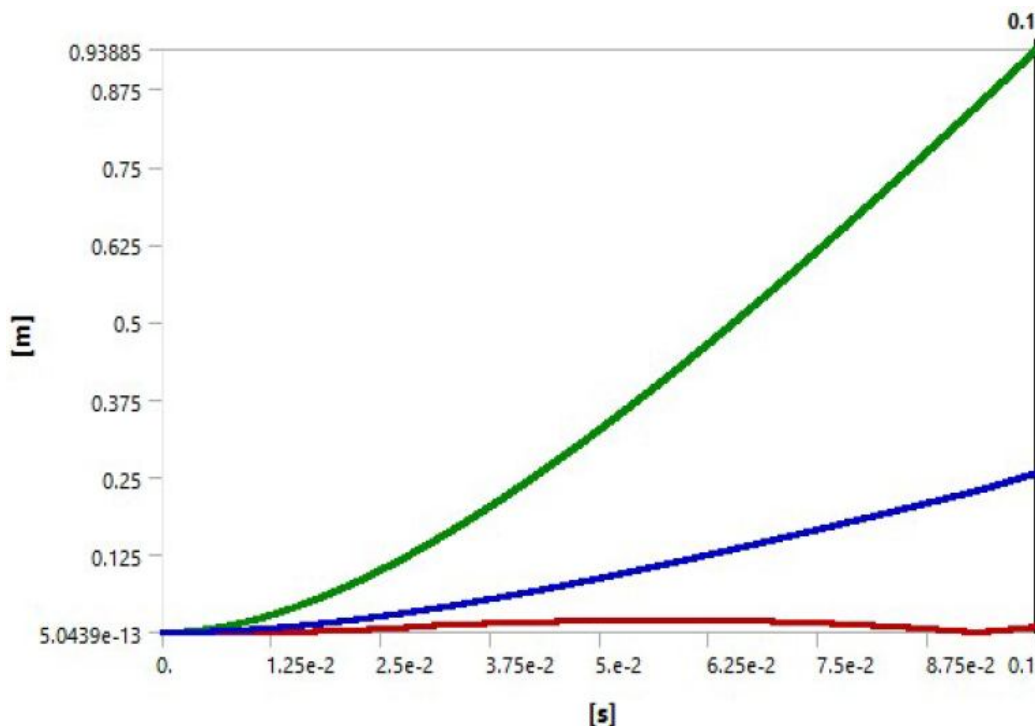
Fig (4.10):- 4-DOF critically damped Transient vibration response at (t) = 0.1 sec

(4.2.3) Result for MDOF Critically Transient Response:-

● Result for Min. & Avg. Critically Transient Response of MDOF forced vibration of damped system at three different time stages i.e. $(t)1 = 0.001$ sec, $(t)2 = 0.01$ sec, $(t)3 = 0.1$ sec with initial time 0.000001 sec are presented in Table 4.3

● Critically Maximum displacement overtime (t) = 0.1 sec presented in Table 4.4

Table 4.3 Min. & Avg. Critically Transient Response of MDOF forced vibration of damped system.

Time(t)	Minimum(m)	Average
0.001 sec	0.0000011479 m	0.000053598 m
0.01sec	0.000036736 m	0.0046033 m
0.1 sec	0.0089126 m	0.25661 m

Table 4.4 MDOF forced vibration of critically damped system Maximum displacement overtime (t) = 0.1 sec

Time(t)	Maximum
0.1 sec	0.93885 m

(4.3) OVERDAMPED FORCED TRANSIENT VIBRATION RESPONSE

Provide damping for maximum frequency i.e. $\omega_n = 2.65\,Hz = 16.65$ rad/sec

If the damping ratio ($\rho = \frac{c}{2m\omega_n} > 1.0$ then it is called overdamped system.

Take Damping for 1st, 2nd, 3rd storey $c_1 = c_2 = c_3 = 3696300$ N-s/m

Damping ratio $(\rho) = \frac{c}{2m\omega_n} = \frac{3696300}{2 \times 55500 \times 16.65} = 2$

Hence it is overdamped.

Take damping for 4th storey $c_4 = 1848150$ N-s/m

Damping ratio $(\rho) = \frac{c}{2m\omega_n} = \frac{1848150}{2 \times 27750 \times 16.65} = 2$ Hence it is overdamped.
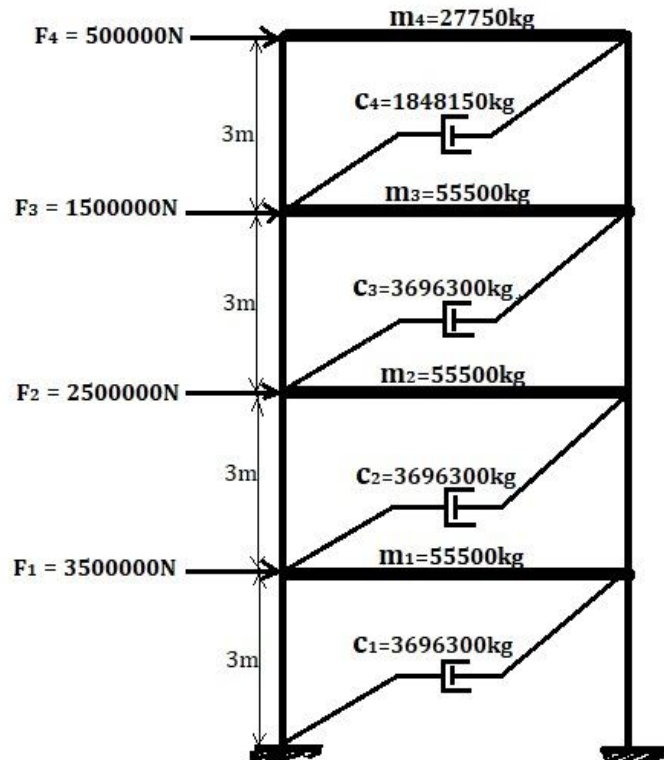
Fig (4.11):- 4-storey Overdamped building system

(4.3.1) Equivalent Overdamped spring-mass system
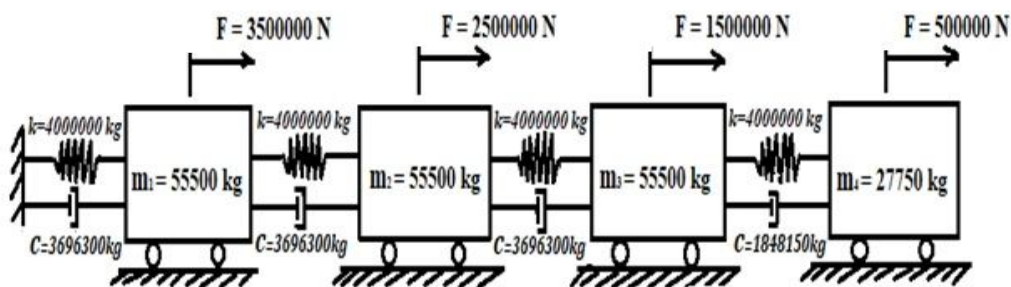
Fig (4.12):- overdamped spring-mass system

(4.3.2) Transient Vibration Response graph for Overdamped of Forced vibration System
The initial time is 0.000001 sec.

(4.3.2.1) graph for overdamped system at time (t) = 0.001 sec
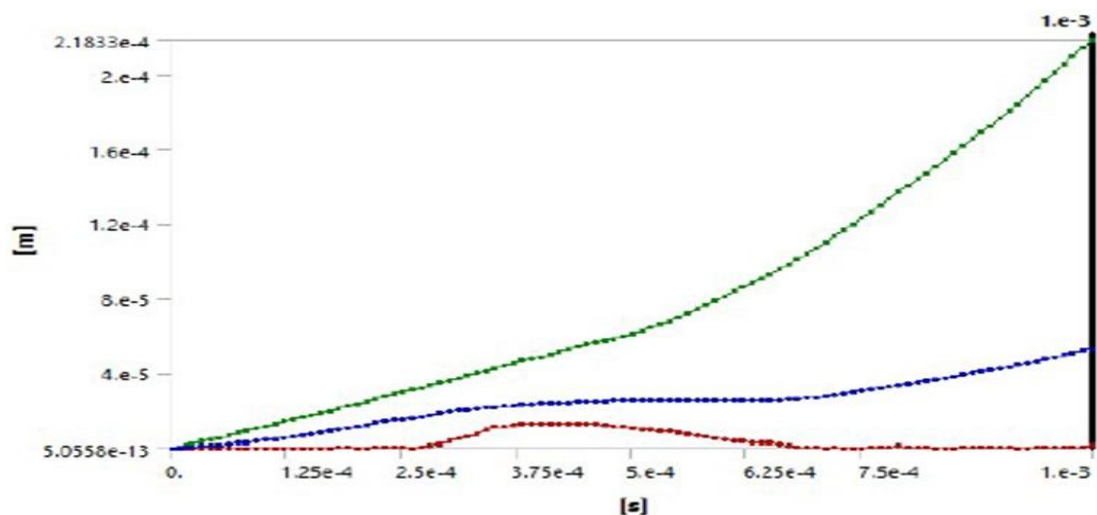
Fig (4.13):- Overdamped (MDOF) Free Transient response graph at the time (t) =0.001 sec

(4.3.2.2) Graph for overdamped system at time (t) = 0.01 sec
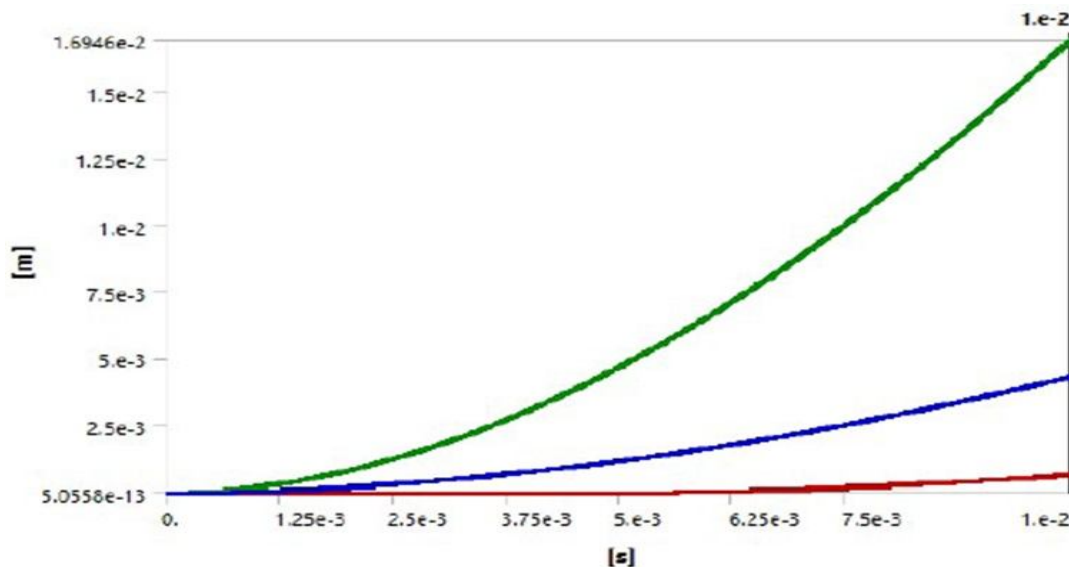
Fig (4.14):- Overdamped (MDOF) Free Transient response graph at the time (t) =0.01 sec

(4.3.2.3) Graph for Overdamped system at time (t) = 0.01 Sec
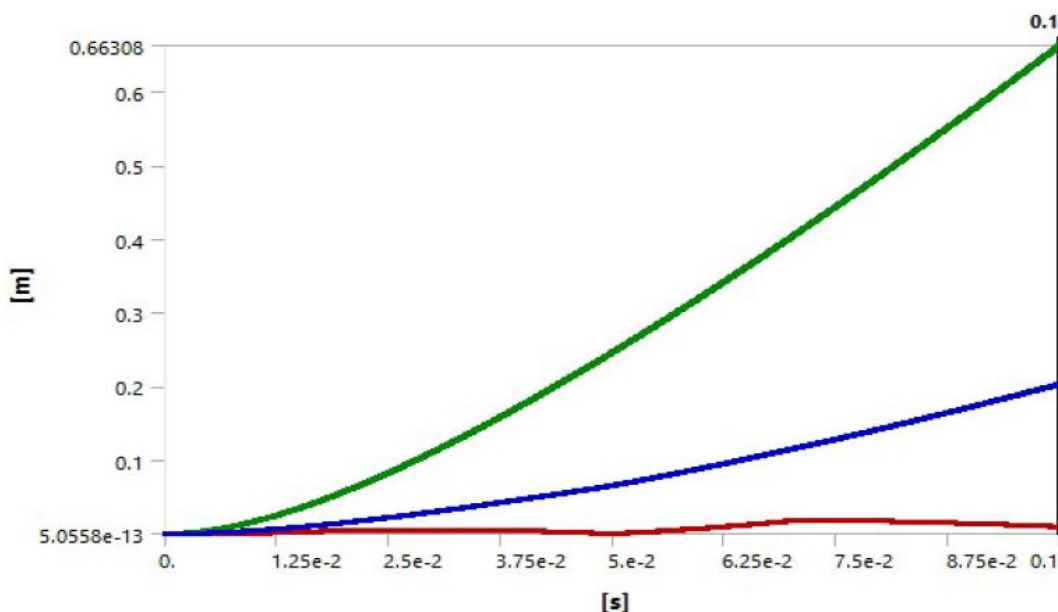
Fig (4.15):- 4-DOF Overdamped Transient response graph at time (t) =0.1 sec

(4.3.3) Result for MDOF Overdamped Transient Response

• Result for Min. & Avg. Overdamped Transient Response of MDOF forced vibration of damped system at three different time stages i.e. $(t)_1 = 0.001$ sec, $(t)_2 = 0.01$ sec, $(t)_3 = 0.1$ sec and initial time is 0.000001 sec. are presented in Table 4.5

• Overdamped Maximum displacement overtime (t) = 0.1 sec presented in Table 4.6

Table 4.5 Min. & Avg. Overdamped Transient Response of MDOF forced vibration of damped system.

Time(t)	Minimum(m)	Average
0.001 sec	0.0000011629 m	0.000052661 m
0.01 sec	0.00063868 m	0.0043121 m
0.1 sec	0.0095751 m	0.20329 m

Table 4.6 MDOF forced vibration of overdamped system Maximum displacement overtime (t) = 0.1sec

Time(t)	Maximum
0.1 sec	0.66308 m

CONCLUSION

The natural frequency has been obtained by theoretically calculated and also by ANSYS. The theoretically solved results almost matched with ANSYS results. Hence the values obtained from ANSYS are valid and acceptable. The ANSYS gives sufficient results and graphs between time and displacements also peak displacement gives for the value of both undamped and damped systems of MDOF systems. The undamped & damped average value for three different time stages 0.001 sec, 0.01 sec & 0.1 sec has shown below.

The 4-DOF undamped & damped average value for two different time stages, i.e. 0.001 sec, 0.01 sec & 0.1 sec has shown below.				
Time	4-DOF average displacement at Undamped system	4-DOF average displacement at Underdamped system	4-DOF average displacement at Critically damped System	4-DOF 76verage displacement at Overdamped system
0.001 sec	0.000054574 m	0.000054081 m	0.000053598 m	0.00005266 m
0.01 sec	0.005345 m	0.0049398 m	0.0046033 m	0.0043121 m
0.1 sec	0.4673 m	0.33469 m	0.25661 m	0.20329 m

The undamped & damped system maximum displacement value at time 0.1 sec has shown below.

The 4-DOF undamped & damped maximum value for two different time stages, i.e. 0.001 sec, 0.01 sec has shown below.				
Time	4-DOF max. displacement at Undamped System	4-DOF max. displacement at Underdamped system	4-DOF max. displacement at Critically damped System	4-DOF max. displacement at Overdamped system
0.1 sec	1.842 m	1.2255 m	0.93885 m	0.66308 m

The values on above table for average and maximum displacement shows the damped values displacements is less than the undamped value. Hence accordingly the above result which has been shown in table we can predict the approximate damping value for the structure.

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DEEP LEARNING AND ARGUMENTATIVE REASONING FOR THE ANALYSIS OF TEXTUAL DATA IN SOCIAL MEDIA

Rashmi H Patil and Siddu P Algur

Department of Computer Science, Rani Chennamma University, Belagavi

ABSTRACT

The utilization of web based life has turned into a normal propensity for some people and has changed the manner in which individuals interface with one another. In this article, we center around examining Tweeter Tweets on the keyword 'Accident' which are misleading by breaking down the communication or the impact that these writings have on the others, along these lines abusing logical data. Solidly, we characterize a profound learning technique for relation-based contention mining to separate contentious relations of assault and support. We at that point utilize this strategy for deciding if news articles bolster tweets, a valuable undertaking in reality checking settings, where deciding and understanding toward an announcement is a helpful advance toward deciding its honesty. Moreover, we utilize our technique for extricating bipolar argumentation structures from audits to help distinguish whether they are tricky. We show tentatively that our strategy performs well in the two settings. Specifically, on account of double dealing identification, our strategy contributes a novel component that, when utilized in blend with different highlights in standard managed classifiers, outflanks the last even on little informational collections.

Keywords: Augmentative Reasoning, Deep Learning, Social Media, Augment Mining, Spam Detection, Recurrent Neural Networks

1. INTRODUCTION

The use of social media has become a regular habit for many and has changed the way people interact with each other. In this article, we center on examining whether news features bolster tweets and whether surveys are tricky by breaking down the cooperation or the impact that these writings have on the others, accordingly misusing logical data. The ongoing accomplishment of profound learning has prompted a far reaching utilization of profound neural systems in various areas, from common dialect comprehension to PC vision, that normally require huge informational indexes

We define a deep learning architecture based on a Long–Short Term Memory (LSTM) model (Hochreiter and Schmidhuber 1997) to determine relations of attack, support, and neither attack nor support between any two pieces of textHere, we propose a profound learning strategy to separate relations of assault and support between pieces of content, as required to develop Bipolar Argumentation Structures (BAFs) and show how it very well may be conveyed successfully likewise with little informational indexes. BAFs can be viewed as charts with contentions as hubs and two kinds of coordinated edges between hubs, speaking to assault and support between the contentions. Mining assault and support from common dialect writings is the principle undertaking in connection based contention mining (RbAM), which adds up to distinguishing contentions in content just as rationalistic relations between these contentions.

We characterize a profound learning engineering dependent on a long– momentary memory (LSTM) display (Hochreiter and Schmidhuber 1997) to neither decide relations of assault, bolster, and neither assault nor bolster between any two bits of content. Inside our profound system engineering, each info content is sustained into a LSTM demonstrate, which delivers a vector portrayal of the content being broke down. The two vectors are then consolidated utilizing different systems and the subsequent vector is at last sustained into a softmax classifier, which predicts the mark for the connection between the two writings. We accomplish 89.53% exactness utilizing LSTMs and link as the union layer, significantly beating the outcomes with highlight based managed classifiers detailed in the investigation that presented the corpus utilized in this article (Carstens and Toni 2015, 2017).

We at that point test our best-performing profound learning model on various informational collections consisting of news article features to decide if these help tweets, and demonstrate that our model sums up well. We utilize two informational collections presented in Tan (2017): one comprising of sets of tweets– features identified with the FBI's analytical association in Hillary Clinton's email release and the second one adjusted from Guo et al. (2013).

Our model can anticipate that the feature underpins the tweet. Surely, the Fake News Challenge shows that deciding assertion toward an announcement is a valuable advance toward deciding its honesty. We then show that our LSTM model can be used to extract full BAFs (as opposed to singling out individual relations) from

text (e.g., reviews). The persuasive quality of contentions would then be able to be utilized to contribute new pugnacious highlights for machine learning classifiers. Our new pugnacious highlights catch the effect of each audit on deciding how "great" a thing is as for all surveys about that thing. In this way, our contentious highlights can be viewed as adding a semantic layer to the examination of audits as it utilizes data from talk and the more extensive setting spoken to by alternate surveys about that thing. We convey these contentious highlights to help distinguish misleading surveys.

Identifying misleading surveys is an essential issue, contemplated, for instance, in Crawford et al. (2015). It has an impact in online business, as tricky surveys may persuade potential clients to purchase an organization's item/benefit (on the off chance that they are sure) or debilitate clients from acquiring (on the off chance that they are negative). A few audits might be malevolently composed by rivals so as to malign an organization's items or to advance their very own items/administrations. The cutting edge in this setting is to remove highlights from surveys utilizing standard syntactic investigation given by Natural Language Processing (NLP) when utilizing machine learning methods (Crawford et al. 2015). We explore different avenues regarding the utilization of pugnacious highlights with irregular woodlands (RFs) (Breiman 2001) in two areas (lodgings and eateries), utilizing the informational index from Ott, Cardie, and Hancock (2013) and Li et al. (2014). These are the highest quality level in double dealing discovery for surveys yet are fairly little (1,600 inn audits and 400 eatery surveys).

2. RELATED WORKS
This work centers around utilizing profound learning joined with contentious prevailing upon systems gotten by RbAM for double dealing recognition. In this area, we audit related work in RbAM and contention mining all in all and in recognition of misdirection in surveys.

2.1 Argument Mining
Existing Argument Mining (AM) approaches focus on a variety of tasks, including identifying argumentative sentences, argument components, and the structure of arguments (e.g., claims and premises), and relations between arguments (e.g., support/attack) (see Lippi and Torroni [2016] for an overview). Order of sets of sentences, adding up to distinguishing relations between writings, has as of late gotten a lot of consideration. Specifically, in this article we center around the RbAM assignment as characterized via Carstens and Toni (2015), which expects to consequently distinguish relations between arguments to make BAFs (Cayrol and Lagasquie-Schiex 2005). Carstens and Toni (2017) acquire 61.8% precision on a news articles corpus utilizing bolster vector machines (SVMs) and highlights, for example, separate measures, word cover, sentence measurements, and fences of notion words. Cabrio and Villata (2012, 2013) utilize literary entailment to recognize contentions inside content and to decide the relations between these arguments. Dusmanu, Cabrio, and Villata (2017) center around the errand of mining contentions from Twitter, recognizing sentiments and truthful contentions and distinguishing the wellspring of these contentions utilizing calculated relapse (LR) and RFs. Different works center around various AM errands than the ones we address in this article, for example, distinguishing contention parts, claims, and premises, and the connections between these—for instance, utilizing LSTMs (Eger, Daxenberger, and Gurevych 2017; Niculae, Park, and Cardie 2017; Potash, Romanov, and Rumshisky 2017).

There are few investigations in the AM people group that utilization profound learning models to decide relations between contentions, however of an unexpected kind in comparison to assault and sup-port as in our work. Eminently, Habernal and Gurevych (2016) try different things with both bidirectional LSTMs (BiLSTMs) and BiLSTMs stretched out with a consideration system and a convolution layer over the contribution to decide the class that clarifies why a specific contention is more persuading than the other in the match. Though they center on deciding convincingness, we center on distinguishing assault, bolster, or neither relations between contentions.

2.2 Spam Detection
Survey spam identification has as of late gotten a lot of consideration. An outline of the machine learning procedures and highlights used to distinguish audit spam is given by Crawford et al. (2015). A great part of the past work on distinguishing tricky re-sees center around recognizing either surveys (e.g., sentiment spam) (Ott et al. 2011; Shojaee et al. 2013; Fusilier et al. 2015) or tricky spammers (Lim et al. 2010; Mukherjee, Liu, and Glance 2012). Other work centers around recognizing single audit spammers (Lim et al. 2010) and bunch survey spammers (Mukherjee, Liu, and Glance 2012). Sandulescu and Ester (2015) take a gander at recognizing audits composed by a similar individual however under different names. Given that most of clients compose a solitary survey, others center around recognizing singleton tricky audits utilizing, for instance, multiscale

multidimensional time arrangement oddities dependent on the supposition that a substantial number of misleading audits are given in a brief timeframe and are corresponded to the rating (Xie et al. 2012).

Hai et al. (2016) use audit spam location for various areas (lodging and restau-tirade) as a perform various tasks learning issue by sharing the information from preparing connected to each undertaking and a diagram regularizer for each model to join unlabeled information. Mukherjee, Dutta, and Weikum (2017) utilize a model dependent on idle point models in blend with restricted metadata to figure a believability score for surveys just as to distinguish irregularities that show up between an audit and the general characteri-zation of a thing both for the thing and for each dormant feature. Viviani and Pasi (2017) proposed a multi-criteria basic leadership technique to distinguish counterfeit surveys by evaluat-ing the effect of every foundation on the veracity of audits and utilizing different strategies to figure the general veracity score. Ren and Ji (2017) proposed a three-arrange framework for identifying beguiling audits: Learn sentence portrayals from word vectors, take in report portrayals from sentence vectors, lastly get the hang of utilizing the record vectors as highlights.

2.3 Background
Our work draws primarily on Recurrent Neural Networks and argumentative reason-ing with Argumentation Frameworks. In this section, we elaborate on relevant back-ground from the two fields as well as on the data sets used in this article.

3. RECURRENT NEURAL NETWORKS AND THERE VARIATIONS
Intermittent neural systems (RNNs) (Elman 1990; Mikolov et al. 2010) are a kind of neural system in which some shrouded layer is associated with itself so the past concealed state can be utilized alongside the contribution at the present advance. Be that as it may, RNNs will in general experience the ill effects of the evaporating slopes issue (Bengio, Simard, and Frasconi 1994) while endeavoring to catch long haul conditions.

LSTM models (Hochreiter and Schmidhuber 1997) address this problem by intro-ducing memory cells and gates into networks. LSTM models are a kind of RNN that utilization memory cells to store logical data and three sorts of doors (input, overlook, and yield entryways) that figure out what data should be added or expelled so as to adapt long haul conditions inside a succession.

One issue with RNNs/LSTM models in NLP is that they don't make utilization of the data of future words. BiRNNs/BiLSTMs (Schuster and Paliwal 1997) take care of this issue by utilizing both past and future words. This neural model procedures the info succession with two RNNs— one in the forward and one the regressive way—bringing about two vectors for each information.

3.1 Argumentation Frameworks
(Dynamic) argumentation structures (AAFs), presented by Dung (1995), are sets comprising of a lot of contentions and a paired connection between contentions, speaking to assaults. Formally, an AAF is any hAR, attacksi where assaults AR. BAFs broaden AAFs by considering two autonomous parallel relations between contentions: assault and support (Cayrol and Lagasquie-Schiex 2005).

3.2 Relational Dataset
Deciding relations between any writings can be seen as a three-class issue, with characterization names L = fattack, bolster, neitherg. We utilize an informational collection adjusted from the one utilized in Carstens and Toni (2017), covering points, for example, UKIP and assessments about films, innovation, and governmental issues, where assault relations speak to 31% of the informational index, bolster relations speaks to 32% of the informational collection, and neither one of the relationses speak to 37% of the informational index.

We have additionally investigated the utilization of other corpora, (for example, the AIFdb corpus,4 which has a better grained examination of contentious sorts, and SNLI (Bowman et al. 2015), utilized in perceiving literary entailment, inconsistency, and nonpartisan relations), which we eventually chose not to incorporate in view of their structure not being agreeable to our investigation, for the reasons we give in the accompanying.

The AIFdb corpus consists of graphs with two types of nodes: information nodes (I-nodes) and scheme nodes (S-nodes). S-hubs speak to relations between I-hubs and may thusly be of various types. These sorts are rule application hubs (RA-hubs), speaking to surmising tenets, and struggle application hubs (CA-hubs), speaking to nonexclusive clashes. Further, change applications hubs (TA-hubs) are unique sorts of S-hubs interfacing locution hubs (L-hubs, extraordinary kind of I-hubs) to catch discourse stream. Despite the fact that we at first estimated that CA-hubs could demonstrate assault and RA-and TA-hubs bolster for RbAM, we found no proof by and by this is the situation. For instance, a TA connection between "No parent in the family is in work" and "We have an immense issue with joblessness" does not demonstrate an unmistakable help connection, in the feeling of RbAM.

The SNLI corpus contains 570k sentence sets marked as entailment, logical inconsistency, or impartial. These relations may appear to have some comparability with the relations important to RbAM, to be specific help, assault, or not one or the other (bolster nor assault), separately. Notwithstanding, the sort of sentence sets found in this corpus is not the same as the kinds of writings we are keen on breaking down in RbAM. To delineate, a case of entailment combine in the SNLI corpus is as per the following: "A soccer match with numerous guys playing" and "A few men are playing a game." We are rather intrigued by persuasive relations (e.g., of help), as between the accompanying two writings: "I trust that what UKIP is doing is indispensable for this nation" and "It is a result of UKIP that we are at long last examining the European inquiry and about movement and thank heavens for that."

4. REVIEW OF DATASETS

The best quality level for beguiling surveys comprises of positive and negative lodging audits of 20 Chicago inns (Ott, Cardie, and Hancock 2013), stretched out more as of late to incorporate tricky audits composed by space specialists (representatives) and Amazon Mechanical Turkers, and honest surveys composed by clients from three areas: inns, restaurates, and specialists (Li et al. 2014). Existing investigations have concentrated on identifying misleading inn surveys (Ott et al. 2011), recognizing positive and negative beguiling inn surveys (Ott, Cardie, and Hancock 2013) and cross-space duplicity on the later informational index (Li et al. 2014).

The lodging informational index that we use comprises of 1,600 positive and negative audits from this best quality level around 20 Chicago inns: 400 honest positive surveys from Trip-Advisor, 400 honest negative surveys from 6 online audit Web destinations, and 400 deceptive positive audits and 400 tricky negative audits from Turkers (Ott, Cardie, and Hancock 2013). The eatery informational index that we use comprises of 400 surveys around 10 eateries, 200 tricky audits, and 200 honest audits (Li et al. 2014).

Consider the following list of Tweeter Tweets which concentrates only on the word '*Accident*':

- Remember the universe doesn't ever put someone on your path by accident. Everything is a lesson, pay attention.

- Please donate to my gofundme. i was in a horrible accident--my birth

- Ystrday night I survived 2 car accident in a row. I lost a lot of blood but I miraculously ended up with minor injuries.

- Fan: What happened to Bizzle?Justin: Bizzle died.. In a fatal car accident.

- girls literally find out everything and sometimes it's just an accident like they don't even try

- Appalled at the UP train accident. Condolences & sympathy to the berieved families.

- Horrific accident at the Iowa State Fair

- Cheating is not an accident, it's a choice.

- Bruh a fight AND a car accident, fucks going on

- Timothy Alexander was paralyzed in a car accident in 2006 He promised if UAB football came back, he would walk

- in honour of one year of blood sweat and tears, im reviving my mini compilation of jimins 'accident'

- JUST IN: 2 SMRT maintenance staff killed in accident at train track near Pasir Ris station

- Her: Come over Me: I was just in a car accidentHer: My parents aren't homeMe:

- Remember when the Migos made a hit on accident?

- When am I gonna see you againFirst of all, you saw me by accident.

- When Accident attorneys ask if you've been killed

- Under the GOP health care repeal plan, Reyna wouldn't have finished her doctorate after a hit-and-run car accident.

- The possibility for a exchange or accident grows.Denial is dangerous.Ratify the treaty.

- when u open an instagram DM by accident and dont wanna reply

- hobitober d19 - devilthe blush was a complete accident lol

- Oh ya aku ada tips unlock phone mangsa yang accident untuk contact family mangsa. This is for Android only.

5. DEEP LEARNING FOR RBAM

We propose a deep learning architecture to neither capture argumentative relations of attack, support, or neither support nor attack between any two pieces of text using LSTM net-works. In RbAM, we accept that on the off chance that one sentence assaults/underpins another sentence; both are viewed as factious, independent of their independent argumentativeness.

LSTMs can be used to encode each text separately and then merged in order to classify the argumentative relation. LSTMs can be utilized to encode every content independently and after that converged so as to order the factious connection. LSTMs have been demonstrated fruitful in learning sentence portrayals in AM or comparative assignments. We tried different things with both LSTMs and BiLSTMs to decide the sort of connection—assault, bolster neither assault nor bolster— between two writings. We don't force writings to be single sentences, yet we do anyway restrain the info groupings to 50 words. We cushion the contributions with size littler than this edge with zeros toward the conclusion to create arrangements of precisely 50 words. We introduce the word embeddings for our profound learning design with the 100-dimensional GloVe vectors (Pennington, Socher, and Manning 2014). The words that don't show up in the vectors are treated as obscure.

We utilize two parallel (Bi) LSTMs to demonstrate the two writings. Surely, in light of our presumption that on the off chance that one sentence assaults/underpins another sentence, both might be viewed as contentious, regardless of their independent factiousness, we selected two classifiers to show the two messages autonomously of each other, and afterward blend the outcomes

5.1 RBAM Results

We tried different things with unidirectional LSTMs and BiLSTMs. In the two cases we set the LSTM measurement to 32 (see Section 4.1), as this ended up being the best among change locals we attempted (64, 100, 128). We prepared for 50 ages or until the execution on the improvement set quit enhancing (accordingly viably abstaining from overfitting by early halting), utilizing a smaller than usual group size of 128 and cross-entropy misfortune. To abstain from overfitting, we connected dropout on each LSTM before the consolidation layer with likelihood 0.2. We didn't utilize dropout on the repetitive units. The model parameters were improved utilizing the Adam technique (Kingma and Ba 2014) with learning rate 0.001. In fact, this strategy gave preferable execution over elective analyzers we attempted (Adagrad, Adadelta, and RMSprop). We run similar tests (with a similar hyperparameters) for unidirectional LSTMs and BiLSTMs. The qualities for the hyperparameters are appeared Table 1.

5.2 Identifying Whether News Headlines Support Tweets

Identifying news headlines that support tweets is useful in fact-checking settings, particularly in testing whether tweets are backed by any information. Indeed, the Fake News Challenge indicates that determining agreement toward a statement is a useful step toward determining its truthfulness

5.3 Mining Bipolar Argumentation Frameworks for Detecting Deceptive Reviews

Our approach to detecting deceptive reviews is based on mining BAFs constructed from arguments that are clustered based on the topics extracted from reviews. We investigate distinctive methodologies for distinguishing subjects in surveys, going from partner every thing experienced in audits with a point, to further developed strategies identified with theme demonstrating, for example, inactive Dirichlet assignment (LDA) (Blei, Ng, and Jordan 2003) and non-negative network factorization (NMF) (Lee and Seung 1999). We think about two strategies for RbAM utilized for building the BAFs: a directed classifier that utilizes syntactic and semantic highlights, and the profound learning design dependent on LSTMs. The BAFs separated from the audits will serve to give new contentious highlights, which are then utilized, alongside different highlights, to decide if a survey is tricky or not. We demonstrate that consolidating profound learning and factious thinking gives preferable execution over standard machine learning systems for double dealing location.

A diagram of how (profound learning for) RbAM and factious thinking and highlights are utilized for recognizing beguiling surveys. The profound learning model neither distinguishes contentions and relations of assault, bolster, and neither assault nor bolster between contentions from a lot of audits. Utilizing the assault and bolster relations separated from the audits, we develop BAFs and figure the argumentative quality of contentions in these BAFs utilizing DF-QuAD. This contributes new contentious highlights which, alongside

other syntactic highlights recently distinguished in investigations of trickery, are sustained into RF to decide if an audit is honest or tricky.

5.4 Building A Topic Dependent-BAF

The procedure for constructing a topic-dependent BAF is described in detail here:

- Split each review into sentences (where each sentence is a potential argument).

- Identify topics in reviews and the sentences (potential arguments) related to each topic.

- For each topic, run the RbAM classifier on the sentences associated with this topic to determine the relations between them.

- Construct the BAF.

5.5 Argumentative Features

So as to recognize tricky audits, notwithstanding standard highlights utilized in past examinations, we connect factious highlights with each survey; speaking to the effect of the audit on how "great" a thing (e.g., lodging or eatery) is regarding all surveys about that thing. These new highlights are gotten from estimating the quality of contentions in the BAF worked from all audits identified with the picked thing and in the BAF worked from all surveys for that thing aside from the one whose affect we go for deciding.

The BAFs acquired from sets of audits, as depicted in Section 6.1, are, by construction, destined to be in the confined type of sets of trees. Note that these trees may have any (limited) expansiveness while picking subjects dependent on the things distinguished in the audits or, in our particular set-up, broadness 35 while deciding points utilizing LDA/NMF, and any profundity as dictated by the relations between contentions extricated from surveys.

Given that the BAFs are (sets of) trees, the qualities of contentions in these BAFs can be effectively determined recursively as far as a quality accumulation work F and a blend work C. We at that point register the qualities of contentions in the BAF worked from all surveys for that thing aside from the one whose affect we go for deciding.

Different techniques for the count of solidarity are likewise deployable practically speaking, for example, the diversion theoretic methodology of Baroni et al. (2017). We have, in any case, found that the DF-QuAD technique can effectively scale to help our investigations (Cocarascu and Toni 2016). Note that each unique strategy for registering quality could thoughtfully be utilized to give another contentious component, notwithstanding the particular one utilizing DF-QuAD that we use in this article.

5.6 Detecting Deceptive Reviews: Experimental Reviews

We report the classification results on the task of determining whether a review is truthful or false on two domains, hotel and restaurant. We assess the execution of different methods of separating points from surveys and the effect our novel factious highlights have on the classifier's execution. Every one of the outcomes are acquired utilizing 5-crease cross-approval and a group strategy, RFs (Breiman 2001), with 10 trees in the backwoods, Gini pollution paradigm, and the base number of tests required to part an inner hub set to 2.

As a gauge, we extricate highlights utilized beforehand in investigations of misdirection (see Section 2.2). These highlights are the consequence of grammatical form (POS) label examination utilizing nltk. Moreover, we incorporate highlights acquired from all surveys utilizing scikit– learn (Pedregosa et al. 2011). To figure these, we utilize the lemmas gotten by dissecting the lowercase type of words and their POS tag.

We present consequences of various methodologies of developing BAFs from surveys and subsequently including the contentious highlights identified with the effect each audit has on the "decency" of the thing (inn or eatery) being investigated (see Section 6.2 on how these highlights are registered). We explored different avenues regarding two procedures for subject demonstrating, LDA and NMF (henceforth having highlights speaking to the effect of each survey on the "integrity" of the thing being inspected for every one of these strategies, separately).

6. CONCLUSION AND FUTURE WORK

We depicted a profound learning model for RbAM and utilized it in two settings: to decide if news features bolster tweets and to distinguish beguiling surveys. Our profound learning design depends on LSTM systems to neither catch the contentious connection of assault, bolster, or neither assault nor bolster between any two writings. We accomplished 89.53% exactness on the news articles informational index of Carstens and Toni (2015). The outcomes show that LSTMs might be more qualified for this errand than standard classifiers, as

LSTMs are better at catching long haul conditions between words as they work over groupings, which is the situation for content.

We used our deep learning model on different data sets consisting of news article headlines that support tweets and showed that our model generalizes well. This sug-gests our model can be utilized for truth checking by recognizing data that underpins tweets. Surely, the Fake News Challenge shows that deciding understanding toward an announcement is a valuable advance toward deciding its honesty.

We additionally portrayed a half breed framework joining profound learning and representative, argu-mentative thinking to assess double dealing of online suppositions and audits. Notwithstanding standard NLP highlights, we presented pugnacious highlights that catch semantic data from audits spoke to as bipolar argumentation structures (BAFs). We show tentatively, for audits about inns and eateries, that including the pugnacious highlights yields better outcomes in classifier execution, with enhance ment up to 0.38 rate point for the lodging informational index and an enhancement of 2.75 rate focuses for the eatery informational index.

We intend to test our profound learning model on the Fake News Challenge (FNC-1), all the more explicitly, deciding if the body content from a news article concurs, deviates, talks about, or is inconsequential to the feature as opposed to deciding if a news feature underpins a tweet as we have done in this article.

Further experimentation is expected to explore whether the utilization of contentious highlights extricated from BAFs got utilizing a profound learning design can bring further execution upgrades for distinguishing misleading surveys. We might want to investigate different ideas of solidarity and processed, as opposed to given, base scores for ar-guments, when effective executions end up accessible to decide if they influence execution. We might likewise want to test whether profound learning and contentious thinking perform superior to anything standard administered machine learning procedures in different settings, other than distinguishing beguiling audits. Further, we intend to try different things with other profound learning structures for RbAM. Specifically, motivated by the exhibited viability of consideration based models (Yang et al. 2016; Vaswani et al. 2017), we intend to join our LSTM-based model with consideration components.

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DRIVERS OF PERFORMANCE OF SME ENTERPRISES: AN EXPLORATORY STUDY OF INDIA

Dr. Nitin Joshi[1] and Dr. Meenakshi Malhotra[2]
Director[1] and Assistant Professor[2], Dr. VN BRIMS, Thane

ABSTRACT

A developing country like India, where capital scarcity remains the main issue SME are regarded as a remedy for the economy setbacks like lack of employment, poverty, income disparities etc. In this competitive market, the SME is facing continuous stress for its sustainability. This research focuses on the determinants that affect the performance of the SME in the region of India. The data was collected through an event study which was further analyzed and rated with the help of the panel which included three industrialists, one chartered account and one academician. The results show that Strategy Orientation, People Management, Business Efficiency are the three important factors that that affects the performance of SME in term of the Average Annual Turnover. Out of which People Management turned out to be the most important factor. People experimentation in SME plays is a vital role for the incremental innovation and creativity within the organization. The second important factor is Strategy Orientation and the current need of SME in India is to focus on the structured strategy orientation. This has to be made in alignment with the thinking, designing, formulation and implementation of the strategy within the organization.

Keyword: People Management Strategy Orientation Performance SME

INTRODUCTION

Business management has always been challenging and with the market becoming more competitive the struggle of Small and Medium Enterprise has multiplied. The challenges come from multiple directions could be from technology disruption in the specified area, or could be from large multinational players who have the strength of supplying material at low cost. The challenge could also come from the substitute product a lot of Companies are continuously working with innovation as a strategy. Direct competition from their own market also creates a lot of challenge which is just unavoidable. Innovation and creativity which are the buzzwords in the industry are constantly bothering the business owners. It is important that SMEs start thinking from a strategic perspective as to how can they survive and perform better in this ever-growing competitive market. The drivers for performance could be many based on the type of industry. Some of the important drivers which are the enablers for the business include good leadership, a strategy, right set of people, efficient system, customer orientation and environmental sustainability.

LITERATURE REVIEW

Strategy Orientation: Market orientation effect on the performance of the organization is moderated by a competitor's intensity, market instability and technological instability. The market instability does not significantly moderate the market orientation effect on the performance of the organization but a competitor's intensity and technological instability have a significant moderating effect (Andotra and Gupta, 2016). Technological instability inversely moderates the market orientation effect on the performance of the organization. The SSI can grow if they increase their market area by increasing their product line or increasing their customer base. Government plays a significant role in the success of the SSIs. Ability to take risk and innovation affect the performance of the organization (Sarker and Palit, 2015). Incremental innovation provides a competitive advantage to Small Medium Enterprises in respect of sales and marketing.

People Management: Customer orientation, coordination between the various function affect the performance of the organization (Sarker and Palit, 2015). People management helps the organization to have a competitive advantage by two methods. One method is growth at the internal level and other is growth at a competitor level. It is a most important method that forms a backbone to the strategy formulation. It leads to the formulation of quality circles and support by the unions (Schuler and MacMillan, 1984).

Customer Orientation: Customer orientation has a positive and significant effect on the performance of small and medium enterprises (Appiah-Adu and Singh, 1998). Customer orientation is linked with the innovation of the organization and having a competitive advantage.

Environment Orientation: The basic assumption about the small medium enterprises is limited resources investment in environment orientation, therefore, they are able to follow only the regulatory frameworks. But the organization which is proactive in their approach towards the environment shows a significant positive effect on the financial performance of the organizations (Aragon-Correa et. al.).

Business efficiency: Business is regarded to be efficient if it is maximizing its profits by minimizing the inputs. It is basically measured by the profitability of the business and the growth of the business (Steffens et. al., 2009). This can be a hindrance in the path of SME because of lack of resources. Business efficiency, long-term sustainability and profitability of the business has a strong association with each other. If there will be fewer financial resources then the business will not be efficient enough to survive (Sandada and Mangwandi, 2015).

Brand Image: Brand rating and perception are regarded as an intangible asset of the business organization. They act as a value driver for the business performance of SME. In long run, they affect customer loyalty, product and the corporate reputation (Steenkamp and Kashyap, 2010).

Figure-1: Theoretical Framework
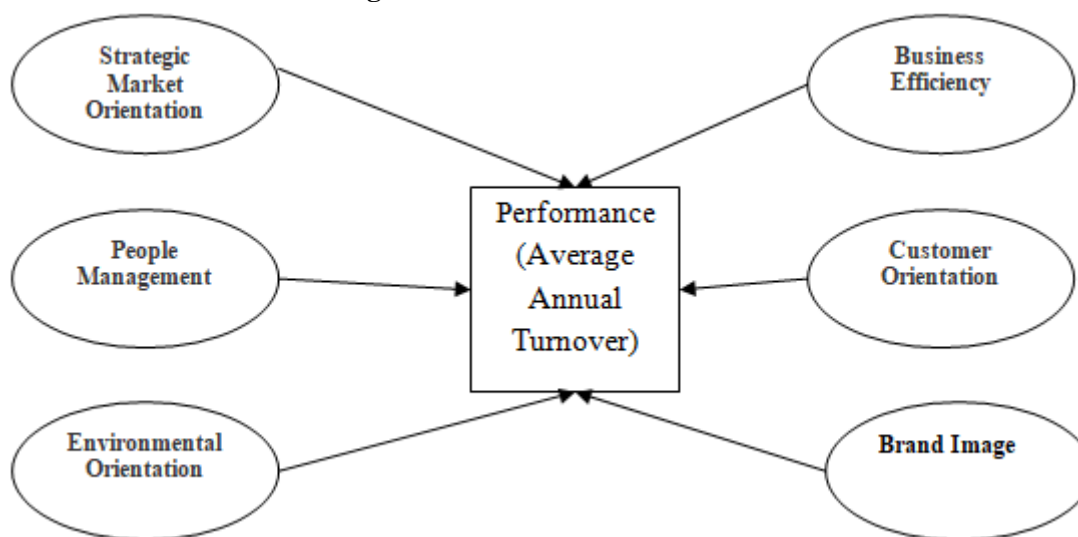
Source: Authors' compilation

HYPOTHESIS
The model of this study is as follow:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon_t$$

where Y is the Value of Average Annual Turnover is dependent variable and the independent components are

$X_1 =$ Strategy Orientation

$X_2 =$ People Management

$X_3 =$ Business Efficiency

$X_4 =$ Environment Orientation

$X_5 =$ Customer Orientation

$X_6 =$ Brand Image

Hypotheses used for the study are.

H_1:   The Strategy Orientation is significantly related to the Value of Average Annual   Turnover.

H_2:   The People Management is significantly related to the Value of Average Annual Turnover.

H_3:   The Business Efficiency is significantly related to the Value of Average Annual Turnover.

H_4:   The Environment Orientation is significantly related to the Value of Average Annual Turnover.

H_5:   The Customer Orientation is significantly related to the Value of Average Annual Turnover.

H_6:   The Brand Image is significantly related to the Value of Average Annual Turnover.

RATIONALE OF THE STUDY
SME is one of the most important support systems for large industries especially the automobile industry or appliances industry wherein SME provides most of the product and assembly is done in the main plain. Also, some of the sectors do not require huge volumes as these products have niche markets. Therefore, it is important to measure their performance and create the structural framework which will enable them to improve their

performance. In the absence of diversification, they are under the constant stress of substitute material. With the technological disruption and with the advent of new technology-driven business model the job market may be adversely affected and hence India seems to have the big potential of youth starting their own SME. This research focuses on the determinants that affect the performance of SME and identifying the most important factor so that they can rationalize their recourses towards it.

RESEARCH METHODOLOGY

The primary source of information for the study was collected through event study. There was an event for the best entrepreneur and for this questionnaire was designed and circulated to the mature SME. Mature SME means who are operating for more than 5 years. The data collected from the SME was scored in the Likert scale with the help of the analyst which comprised of 3 industrialists, 1 chartered account and 1 Academician. The final questionnaire was basically divided into two parts. The first part gathered information about the demographic profile of the organization and the second part was based on the questions designed from the construct of the theoretical framework. For the second part, the final questionnaire was in five-point Likert scale where 5 signified to strongly agree and 1 signified to strongly disagree. The questions were developed by brainstorming with the scholars and extensive literature review. Literature review used for construct included Andotra and Gupta (2016), Steenkamp and Kashyap (2010) and Schuler and MacMillan, 1984. The performance was measured by using objective indicator Average Annual Turnover of the organization. Sources of secondary data include journals, the internet, books etc. The normality of the data was checked using Q plots and the outliers were removed. The constructs were identified with the help of factor analysis. The reliability was checked by Cronbach's alpha and the hypothesis was tested using multiple regressions.

Table-1: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.692
Bartlett's Test of Sphericity	Approx. Chi-Square	425.878
	Df	153
	Sig.	0

The value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy value is greater than 0.06 and Bartlett's Test of Sphericity significance value is lea than 0.05 therefore the data is suitable for the factor analysis (Kaiser & Rice, 1974).

DATA ANALYSIS AND INTERPRETATION

For the confirmation of the factor Principle Component Analysis and Varimax is being used. Maximum of the variables that have been included meets the criteria of greater than or equal to 0.5 for factor loading. Factor analysis showed that there are 6 important factors which affect the performance of the SME. SPSS 21 was used for performing the factor analysis to identify the items that are related with each other. The six factors are Strategy Orientation, People Management, Business Efficiency, Environment Orientation, Customer Orientation and Brand Image.

Table-2: Results of Factor Loading and Variance Explained after Scale Purification (rotated component method)

Factor		Factor Loading	Eigen Value	% of total variance	Cumulative Variance %
Strategy Orientation	Innovation	0.769	4.242	23.569	23.569
	Stakeholder Involvement	0.67			
	Impact on the community	0.507			
	Export	0.632			
People Management	No. Of Employees	0.816	1.75	9.721	33.291
	Training provided to the staff	0.582			
	Employee welfare	0.644			
Environmental Orientation	Energy Conservation Techniques	0.786	1.395	7.75	49.348
	Pollution control Measures	0.616			
	Safety	0.462			
Business Efficiency	Drivers of Business	0.607	1.495	8.307	41.598
	Challenges	0.764			
	Leadership	0.756			
Brand Image	Brand Rating	0.8	1.091	6.061	62.73

	Customer Perception of the brand	0.876			
Customer Orientation	No. of Customers	0.678	1.318	7.321	56.669
	Customer Satisfaction	0.653			
	Complaint Management System	0.751			

Source: Authors' compilation

For further analysis multiple regression was used to find the effect of independent variable on dependent variable. For this purpose, dependent variable was performance of the organization in term of Average Annual Turnover and the independent variable were Strategy Orientation, People Management, Business Efficiency, Environment Orientation, Customer Orientation and Brand Image.

Table-4: Multiple Regression

Coefficients(a)					
	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	2.125	0.177		12.017	0
Strategy Orientation	0.776	0.178	0.32	4.364	0
People Management	1.458	0.178	0.602	8.205	0
Business Efficiency	0.551	0.178	0.227	3.099	0.003
Environment Orientation	0.013	0.178	0.005	0.071	0.943
Customer Orientation	0.185	0.178	0.076	1.04	0.301
Brand Image	0.011	0.178	0.004	0.06	0.952
a. Dependent Variable: Value of Average Annual Turnover					

Source: Authors' compilation

Table-5: Model Summary

Model Summary(b)										
									Change Statistics	
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.722a	0.522	0.489	1.733	0.522	16.176	6	89	0	2.107
a. Predictors: (Constant), Strategy Orientation, People Management, Business Efficiency, Environment Orientation, Customer Orientation, Brand Image.										
b. Dependent Variable: Value of Average Annual Turnover										

Source: Authors' compilation

There is a significant regression equation with R2 value 0.522 showing that variance in the performance is explained by 52.2% of the independent variables. Strategy orientation (p<0.05), People Management(p<0.05) and Business Efficiency(p<0.05) were significant predictors of Performance of the organization with α=.05. Strategy orientation (B= 0.776), People Management (B= 1.458) and Business Efficiency (B= 0.551) have a positive effect on the Performance of the organization. Therefore, the hypothesis H1, H2 and H3 are supported. People Management is the most important predictors of performance of the organization.

DISCUSSION AND FUTURE IMPLICATION

In the overall growth of India SME hold an important position. According to the analysis of the first aspect that the organization should work on is people management. They should provide proper training and employee welfare scheme to the employee. Secondly, the strategy of the business organization plays an important role. They have to show the innovation which will show their difference from the other organizations.

As per the study out of the six factors people in the organization are the most important determinant which contributes towards the increasing performance of the SME. In view of the good SME will have to create an environment which allows progressive measurable growth of the people along with the organization. SME will also have to allow people to experiment so that incremental innovation can be explored within the organization and the benefits of the innovation and creativity can boast both the employee and the employer. Incremental innovation also allows the marketing to expand their market base and increase the product life cycle which is so very important for creating long-term value for SME.

The need of the day is that the country needs to expand its manufacturing base to create opportunities for wealth creation along with constructive utilization of energy of the youth. SME in India needs to focus on the structured strategy orientation. There is a need for strategic thinking, strategy design, strategy formulation and implementation. The strategy design will allow the owners to expand their horizon form local suppliers to global suppliers. It will create new USP's for the product which allows them to create a unique differentiation in the marketplace thereby creating a good positioning input in the mind of the customers and allowing them for a good sustainable model. This research can be further extended in building the model that will affect the performance of the business organization. In performance average annual turnover has been used as an indicator of the performance of the organization but future research can further extend the factor. Moreover, innovation and strategy can be further divided into different determinants for analysis.

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ENHANCEMENT OF AVAILABLE TRANSFER CAPABILITY IN A DEREGULATED POWER SYSTEM USING OPTIMAL ALLOCATION OF UNIFIED POWER FLOW CONTROLLER

K. T. Venkatraman[1] and B. Paramasivam[2]
Lecturer[1], Department of EEE, Government Polytechnic College, Korukkai, Thiruthuraipoondi
Assistant Professor[2], Department of EEE, Government College of Engineering, Bodinayakkanur

ABSTRACT
Competitive electricity markets are complex systems with many participants who buy and sell electricity and transmission lines are operated beyond their capacities causing congestion. The electric utilities are mandatory to relieve the congestion consecutively to get better Available Transfer Capability (ATC) of power transactions between generators and loads in the deregulated power system. This paper presents a dynamic model of unified power flow controller (UPFC) has been implemented to enhance available transfer capability in transmission line. In addition, UPFC is able to control the real and reactive power along with voltage magnitude and phase angle thereby improving the bus voltages as well as reduction in the power losses. The goal of the optimization is to find the best location and parameters of UPFC devices using Flower Pollination Algorithm (FPA) for maximizing ATC. The effectiveness of the proposed method is demonstrated using an IEEE-30 bus test system for the assessment of ATC in normal and line outage contingencies conditions for the selected bilateral, multilateral transactions. The simulation results show that the introduction of UPFC devices in a right location could enhance ATC, reduction of total losses and improving the line congestion as compared to that of the system without UPFC devices.

Keywords: Available Transfer Capability, AC Power Transfer Distribution Factors, Flower Pollination Algorithm and Unified Power Flow Controller.

I. INTRODUCTION
Available transfer capability is the measurement of the transfer capability that remains in the transmission system network for further commercial use. Given that a deregulated power system is based completely on ATC, system operators and planners use ATC to determine the capability and strength of the transmission system. These properties are evaluated to estimate the total transfer capability (TTC), transmission reliability margin (TRM), and capacity benefit margin (CBM) [1]. Enhancing ATC requires extensive control over power flow in an interconnected system. It also requires measuring effective stability progress by using the features of transmission lines to achieve an economical solution. The Flexible AC Transmission Systems (FACTS) devices have become the indispensable entities in the field of electrical power transmission and appropriate utilization. Various FACTS devices are used to control dynamically the bus voltages, line impedance, and phase angle of heating, ventilation, and air conditioning HVAC transmission lines, thereby enabling them to operate near their thermal capacity and increasing transmission capacity [2]. The insertion of FACTS devices in electrical systems seems to be a promising strategy to enhance ATC

Many FACTS controllers such as: static VAR compensator (SVC), static synchronous compensator (STATCOM), thyristor-controlled series capacitor (TCSC), static synchronous series compensator (SSSC) and unified power flow controller (UPFC) are available [3]. Among them UPFC is the most versatile FACTS device. Since, it can individually or sequentially control all power system network parameters, including voltage magnitude, line impedance, and phase angle [4]. UPFC consists of a SVC and TCSC connected back to back through a DC link capacitor. SVC is a controllable current source, whereas TCSC acts as a controllable voltage source SVC is connected to the AC system in parallel through a three-phase transformer and mainly generates the real power to be consumed by TCSC. Moreover, SVC supports the transmission network with reactive power compensation. TCSC is also connected to the transmission line via a transformer, but in series. TCSC compensates for voltage drops in the transmission network by injecting an AC voltage with controllable phase and magnitude, thereby improving active and reactive power transmission. Active power can be exchanged between SVC and TCSC via the DC link capacitor. Each converter can also exchange reactive power independently at its terminal [5].

Many methods have been suggested to calculate the ATC. The methods differ on the basis of the power flow model being employed, the system aspects considered, the compelling limits under consideration and few other factors. The sensitivity based methods are fast in ATC determination which are based on the power flow sensitivity and are proposed by many authors for fast computation of ATC [6, 7]. Linear sensitivity factors are employed for the fast calculation. These factors give the approximate change in line flows for changes in generation of the system. Linear sensitivity factors uses DC Power Transfer Distribution Factors (DCPTDFs)

and Line Outage Power Transfer Distribution Factors (LOPTDFs) derived from DC load flow. DCPTDFs are easy to calculate and giving fast computations. But less accurate as in DC power flow voltage and reactive power effects are not considered. More accurate PTDFs can be calculated using AC power flow model. Line power flows are simply function of the voltages and angles at its terminal buses. So PTDF is a function of these voltage and angle sensitivities. AC Power Transfer Distribution Factors (ACPTDFs) are also proposed for ATC determination [8]. ACPTDFs are derived around the base operating point using full AC Load Flow analysis. In ACPTDF based methods, reactive power limits and voltage limits are also considered and therefore more accurate with less computation complexity. In this study the assessment of ATC using AC Power transfer distribution factors (ACPTDFs) based approach has been used for single and simultaneous transactions using power transfer sensitivity and jacobian calculated using N-R method.

The main objective of this study i) technical objective of determining the optimal location of the UPFC devices for reduction of losses and enhancement of Available Transfer Capability and ii) the economic objective of determining the cost of investment for the UPFC device. Artificial Intelligence (AI) based genetic algorithm (GA), particle swarm optimization (PSO) and harmony search algorithm (HSA) techniques are used simultaneously searches the optimal locations, installation cost and parameters setting of FACTS devices in order to improve the ATC of power transactions between generators and loads without violating system constraints [9-11]. A newly developed Flower Pollination Algorithm (FPA) is a metaheuristic optimization technique based on pollination of flowers. It has only one key parameter p (switch probability) which makes the algorithm easier to implement and faster to reach optimum solution [12]. FPA technique has unique capability such as extensive domain search with excellence and consistency solution [13]. In this study, FPA is used to find the optimal location, and control parameters of UPFC devices to achieve maximization of ATC, decrease the line congestion and total power loss.

II. AVAILABLE TRANSFER CAPABILITY

Available transfer capability (ATC) is a measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above committed uses [6]. ATC can be expressed as:

$$ATC = TTC - ETC - CBM - TRM \qquad (1)$$

Total Transfer Capability (TTC) is defined as the amount of electric power that can be transferred over the interconnected transmission network in reliable manner with all the uncertainties and contingencies considered. Existing Transmission Commitments (ETC) is defined as the amount of transmission transfer capability which is required for committed transactions. Capacity Benefit Margin (CBM) is defined as the amount of transmission transfer capability reserved by load serving entities to ensure that the interconnected systems do meet generation reliability requirements. Transmission Reliability Margin (TRM) is defined as the amount of transmission transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions. As the Power system is stochastic in nature the Independent System Operator (ISO) has to continuously monitor and update ATC after every transaction.

ATC at base case, between bus m and bus n using line flow limit (thermal limit) criterion is mathematically formulated using ACPTDF (or) PTDF as

$$ATC_{mn} = \min(T_{ij,mn}), ij \in N_L \qquad (2)$$

$T_{ij,mn}$ denotes the transfer limit values for each line in the system. It is given by

$$
\begin{cases}
\dfrac{(P_{ij}^{max} - P_{ij}^0)}{PTDF_{ij,mn}} ; & PTDF_{ij,mn} > 0 \\[2mm]
\dfrac{(-P_{ij}^{max} - P_{ij}^0)}{PTDF_{ij,mn}} ; & PTDF_{ij,mn} < 0 \\[2mm]
\infty; & PTDF_{i,mn} = 0
\end{cases}
\qquad (3)
$$

where P_{ij}^{max}, P_{ij}^0 are maximum power flow limit in MW and base case power flow of a line between bus i and j.

III. STATIC MODELING OF FACTS DEVICES

The power flow equations of the line connected between bus i and bus j having series impedance $r_{ij} + jx_{ij}$ and without any FACTS devices are given by

$$P_{ij} = V_i^2 g_{ij} - V_i V_j (g_{ij} \cos\delta_{ij} + b_{ij} \sin\delta_{ij}) \tag{4}$$

$$Q_{ij} = -V_i^2 (b_{ij} + B_{sh}) - V_i V_j (g_{ij} \sin\delta_{ij} - b_{ij} \cos\delta_{ij}) \tag{5}$$

Where V_i, V_j are the magnitudes voltage at bus-i and bus-j, δ_{ij} is the angle difference between bus-i and bus-j and $g_{ij} = \frac{r_{ij}}{r_{ij}^2 + x_{ij}^2}$, $b_{ij} = \frac{-x_{ij}}{r_{ij}^2 + x_{ij}^2}$

Similarly the active power (P_{ji}) and reactive power (Q_{ji}) flow from bus-j and bus-i in the line given by

$$P_{ji} = V_j^2 g_{ij} - V_i V_j (g_{ij} \cos\delta_{ij} - b_{ij} \sin\delta_{ij}) \tag{6}$$

$$Q_{ji} = -V_j^2 (b_{ij} + B_{sh}) + V_i V_j (g_{ij} \sin\delta_{ij} + b_{ij} \cos\delta_{ij}) \tag{7}$$

3.1 Power flow control of UPFC devices

The equivalent circuit of UPFC is shown in Fig1. The shunt converter is connected at one port while the Series converter is connected in series with the line at the other port. The voltage at the latter port is denoted by V_L. The series injected voltages; V_p and V_r are controlled to regulate the power in the line. Since the voltage V_L is normally uncontrolled, the complex power is given by

$$S = P_L + jQ_L = I * V_L = \frac{V_i^* - V_r^*}{jX_L} V_L$$

$$(8) V_L = V_s + V_c = V_{\angle\delta} + V_c\angle\beta = \frac{V_i^* - V_r^*}{jX_L} V_L \tag{9}$$

P_L and Q_L can be expressed as

$$P_L = P_o + \frac{V V_c}{X_L} \sin\left(\frac{\delta}{2} + \beta\right) \tag{10}$$

$$Q_L = Q_o + \frac{V V_c}{X_L} - \frac{V V_c}{X_L} \cos\left(\frac{\delta}{2} + \beta\right) + 2\frac{V V_c}{X_L} \cos\left(\frac{\delta}{2} - \beta\right) \tag{11}$$

$$\text{Since } P_o = \frac{V^2}{X_L} \text{ and } Q_o = \frac{V^2}{X_L}(1 - \cos\delta) \tag{12}$$

Thus, the three variables, V_S, P_L and Q_L, can be regulated by controlling Ir, V_C and β.
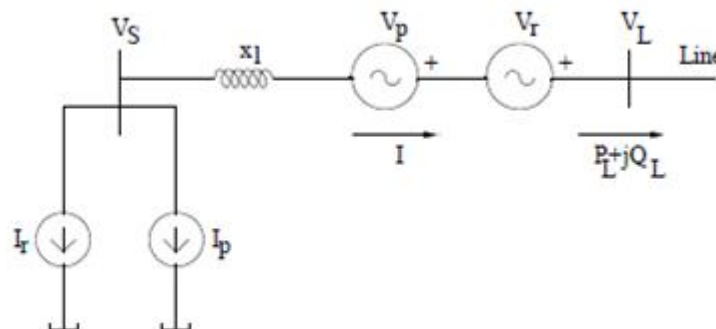

Figure-1: Equivalent circuit of UPFC devices

IV. PROBLEM FORMULATION

The objective is to maximize the ATC, when a transaction is taking place between a seller bus (m) and buyer bus (n). The objective function to be maximized is given by

$$J = Max\ (ATC_{mn}) \tag{13}$$

It is subjected to the following equality, in-equality and practical constraints.

$$P_{Gi} - P_{Di} - \sum_{j=1}^{nb} V_i V_j Y_{ij} \cos(\delta_i - \delta_j - \theta_{ij}) = 0 \qquad (14)$$

$$Q_{Gi} - Q_{Di} - \sum_{j=1}^{nb} V_i V_j Y_{ij} \sin(\delta_i - \delta_j - \theta_{ij}) = 0 \qquad (15)$$

where P_{Gi}, Q_{Gi} are the real and reactive power generations at i^{th} bus, P_{Di}, Q_{Di} are the real and reactive power demands at i^{th} bus, Y_{ij}, θ_{ij} are the bus admittance magnitude and its angle between i^{th} and j^{th} buses, δ_i, δ_j are voltage angles of bus i and bus j respectively nb, n_g is the total number of buses and generator

$$P_{Gi}^{min} \le P_{Gi} \le P_{Gi}^{max} \quad for\ i = 1,2 ..... n_g \qquad (16)$$

$$Q_{Gi}^{min} \le Q_{Gi} \le Q_{Gi}^{max} \quad for\ i = 1,2 ..... n_g \qquad (17)$$

$$V_b^{min} \le V_b \le V_b^{max} \quad for\ i = 1,2 ..... n_b \qquad (18)$$

UPFC is modeled as combination of an SVC at a bus and a TCSC in the line connected to the same bus. The constraints on the UPFC devices are

$$-0.8x_{line} \le x_{TCSC} \le 0.2x_{line} \ p.u. \qquad (19)$$

$$-100MVAr \le Q_{SVC} \le 100MVAr \qquad (20)$$

Where, X_{TCSC} is the reactance added to the line by placing TCSC, X_{line} is the Reactance of the line where TCSC is located. To prevent overcompensation, TCSC reactance is chosen between $-0.8X_{Line}$ to $0.2X_{Line}$. Q_{SVC} is the reactive power injected at the bus by placing SVC. The constraints on the Installation Cost of the corresponding UPFC devices are given by,

$$IC = C * S * 1000 \qquad (21)$$

where *IC* denotes optimal installation cost of UPFC devices in US\$. *C* represents cost of installation of UPFC devices in US\$/KVAR. The cost of installation of UPFC devices are taken from Siemens data base. The cost of installation of various UPFC devices is given by the following equations:

$$C_{UPFC} = 0.0003S^2 - 0.2691S + 188.22 \qquad (22)$$

Where S is the operating range of UPFC devices in MVAR and it is given by

$$S = |Q_1| - |Q_2| \qquad (26)$$

Where Q_2 is the reactive power flow in the line after installing FACTS device in MVAR and Q_1 represents reactive power flow in the line before installing FACTS device in MVAR.

V. OPTIMAL ALLOCATION OF UPFC DEVICES USING FLOWER POLLINATION ALGORITHM
5.1 Overview of Flower Pollination Algorithm (FPA)
FPA, suggested by Yang *et al.*, [12] is based on flow pollination process of flowering plants. Flower pollination happens in two types namely self-pollination and cross-pollination. The self-pollination happens when pollen from one flower pollinates the same flower or other flowers of the same plant. On the other hand, cross pollination means pollination can occur from pollen of a flower of a different plant. Biotic, cross-pollination occurring at long distance may be called as the global pollination initiated by bees, bats, birds and flies which could fly a long distance. In the global pollination step, flower pollens are carried by pollinators such as insects, and pollens can travel over a long distance because insects can often fly and move in a much longer range. This ensures the pollination and reproduction of the most fittest as g_* and represented mathematically as

$$x_i^{t+1} = x_i^t + L(x_i^t - g_*) \qquad (27)$$

where x_i^{t+1} is the solution vector x_i at iteration *t*, and g_* is the current best solution found among all solutions at the current generation/iteration. The parameter *L* is the strength of the pollination, which essentially is a step size [13] and mathematically denoted as $L \sim \dfrac{\lambda \Gamma(\lambda) \sin\left(\frac{\pi \lambda}{2}\right)}{\pi} \dfrac{1}{s^{1+\lambda}} \qquad (s \ll s_0 > 0) \qquad (28)$

where $\Gamma(\lambda)$ is the standard gamma function, and this distribution is valid for large steps s >0. The local pollination and flower constancy can be denoted as

$$x_i^{t+1} = x_i^t + \varepsilon(x_j^t - x_k^t) \tag{29}$$

where x_j^t and x_k^t are pollens from different flowers of the same plant species. These basically mimic the flower constancy in a limited neighborhood. Most flower pollination activities can occur at both local and global scale.

5.2 FPA based optimal allocation UPFC devices for ATC enhancement

The FPA for solving optimal allocation of UPFC devices is given below

Step1:   Read the system input data.

Step 2: Initialize a population of *n* flowers. The initial population is generated from the following parameters; n_{FACTS}: the number of UPFC devices to be simulated; $n_{Location}$: the possible location for UPFC devices

Step 3: Run a base case load flow.

Step 4: Initialize the objective function as given in Equation (13).

Step 5: Consider wheeling transactions (t_k)

Step 6: Compute ACPTDF using Equation (2).

Step 7: Take transactions as variables, line flow, and real and reactive power limits of generators as constraints and compute the feasible wheeling transactions to determine the ATC as per Equation (3).

Step 8: Find the limiting element in the system buses, i.e., that carry power close to thermal limit.

Step 9: Place UPFC devices in the limiting element.

Step 10: Find the best solution $g*$ in the initial population

Step 11: Define a switch probability p ∈ [0, 1] and define a stopping criterion (a fixed   number   of generations/iterations)

Step12: while (t <Maximum Generation) for i=1:n (all n flowers in the population) if rand < p, and draw a (d-dimensional) step vector *L* which obeys a Levy distribution Global pollination has been done using Equation (27). Else, draw ε from a uniform distribution in [0, 1]. Randomly choose j[th] and k[th] flower among all the solutions and do local pollination through Equation (29), end if

Step13: Evaluate new solutions using the objective function. If new solutions are better, update them in the population, end for

Step 14: Find the current best solution g based on the objective fitness value, end while.

Step 15: Calculate ATC after incorporating UPFC devices

Step 16: Is any other transaction has to be carried, then, consider the next transactio and go to step 5, otherwise stop the procedure.

VI. SIMULATION RESULTS AND OBSERVATIONS

This section presents the details of the simulation done on IEEE 30 bus system without and with UPFC devices for ATC calculation under normal operating condition. The optimal location and size of UPFC devices are obtained using Flower Pollination Algorithm. In the IEEE-30 bus system consists of six generators and forty one lines are considered. For this system, the total active power demand is 283.4MW and there are six generators connected at buses 1, 2, 5, 8, 11, 13, and two shunt compensators connected at buses 10 and 24 and four tap changing transformers connected between buses 6–9, 6–10, 4–12 and 27–28. Here, the transactions with generators connected at buses 2, 5, 8, 11 and 13 are treated as seller buses and the load buses are treated as buyer buses. Generators at buses 8, 11 and 13 are considered in area 1, while the remaining generators at buses 1, 2 and 5 are considered in area 2. The tie-line existing between the two areas and transaction is carried out between area 1 and area 2. Three inequality constraints are considered in these studies: the voltage limit, line thermal limit and reactive power generation limit. In OPF problem, ATC is considered as an objective. The ATC has been determined using ACPTDFs based on the line flow limit under normal and line outage conditions. The method runs for each increment of the transaction over its base value until any of the line flows or the bus voltages hits the limiting value. Transaction is carried out between area 1 and area 2 and the voltage

magnitude limit of each bus is assumed to be between 0.95p.u. and 1.05p.u. The optimal location and size of UPFC devices are obtained using Flower Pollination Algorithm for maximizing ATC for the selected bilateral, multilateral and area wise transactions. Installation cost of UPFC devices has also been calculated for each transaction with reference to ATC value and cost of installation. The simulations have been carried out on a 2.40 GHz Dual Core, Intel Pentium system in a MATLAB 2010a environment.

A single type UPFC device is installed in the test system to study the effectiveness of the devices in enhancing ATC for different bilateral and multilateral transactions. In bilateral transactions, seven transactions between a seller bus in source area and buyer bus in sink area such as (5-30, 13-27, 5-20, 2-10, 11-27, 8-30, 8-30 and 2-23) and multilateral transactions, three transactions between a seller bus in source area and buyer bus in sink area such as (5, 8, 11- 27, 30 and 8, 13 – 27, 20 and 2, 8, 13 - 23, 27) are considered. In this study, ATC enhancement is obtained with optimal location and sizing of UPFC devices by applying Flower Pollination Algorithm technique. Installation cost of these UPFC devices has also been calculated for each transaction with reference to ATC value. The test system results for different bilateral and multilateral transactions under normal operating conditions using proposed approach are given in Table 1 and Table 2. From the Table 2 and Fig.2 shows that ATC is increased with use of UPFC for different transactions. Moreover, Table 2 and Fig 3-4 it can clear that the active and reactive power losses are reduced by placing UPFC devices in right locations.
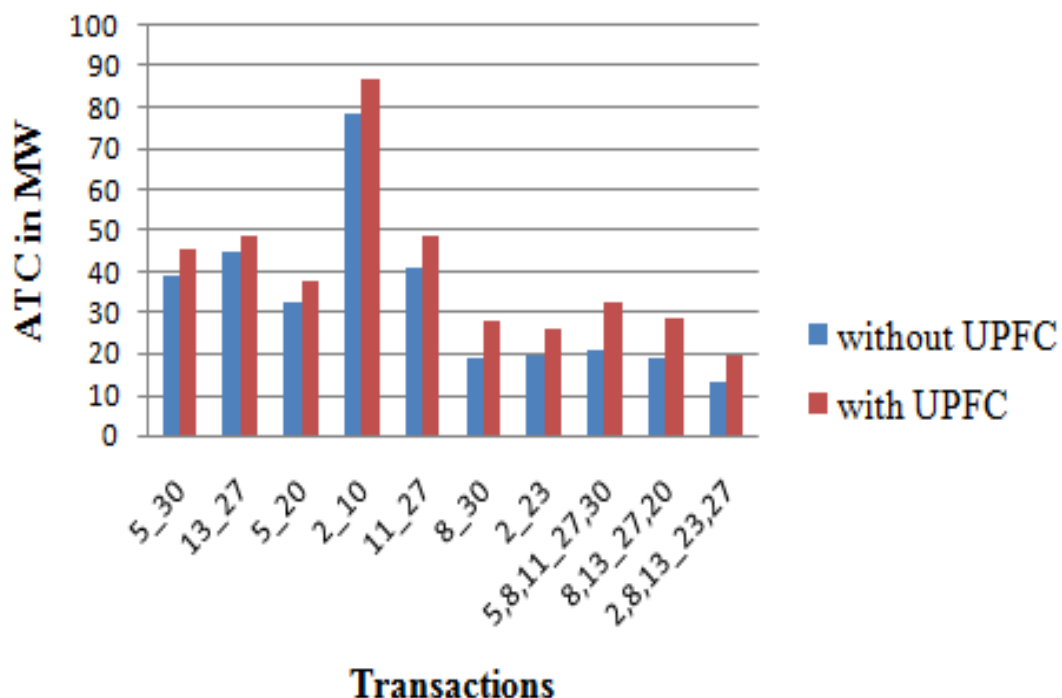
Figure-2: ATC enhancement for IEEE-30 bus system without and with UPFC devices
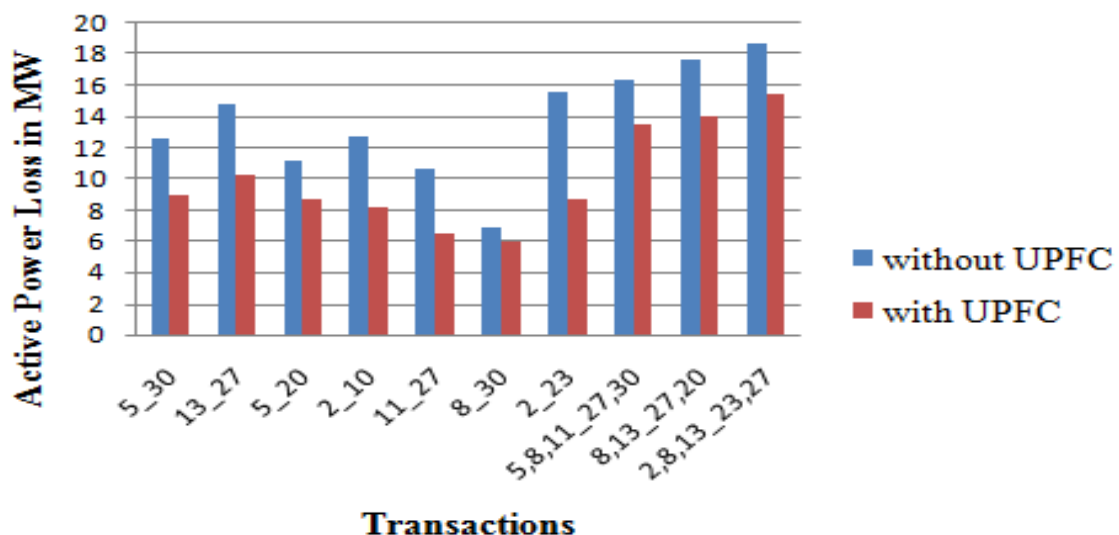
Figure-3: Active Power Loss for IEEE-30 bus system without and with UPFC devices

Figure-4: Reactive Power Loss for IEEE-30 bus system without and with UPFC devices

Table-1: Optimal parameters of UPFC devices for IEEE-30 bus system for selected bilateral and multilateral transactions

| Transactions | Control parameters of UPFC devices with enhancement of ATC | | | | Cost (x10^8 US $) |
| | Location | | Size | | |
	Location (at bus)	Location (line)	Q_{SVC} in MVAR	X_{TCSC} in p.u	
5 - 30	Bus -16	Bus (16-12)	55.67	-0.117	1.52
13 - 27	Bus -28	Bus (28-29)	40.48	-0.187	1.24
5 - 20	Bus -18	Bus (15-18)	-11.07	-0.108	0.97
2 - 10	Bus -16	Bus (16-17)	60.47	-0.263	1.91
11 - 27	Bus -22	Bus (6-22)	-8.112	-0.071	0.72
8 - 30	Bus -30	Bus (16-12)	53.78	-0.423	1.32
2 - 23	Bus -15	Bus (15-23)	-7.548	-0.104	0.75
5, 8, 11- 27, 30	Bus -22	Bus (22-21)	-15.47	-0.092	1.25
8, 13 – 27, 20	Bus -16	Bus (16-17)	19.78	-0.107	1.15
2, 8, 13 - 23, 27	Bus -23	Bus (15-23)	22.47	-0.182	1.13

Table-2: Results for IEEE-30 bus system under normal operating conditions for selected bilateral and multilateral transactions

| Transactions | ATC in MW | | Active power loss in MW | | Reactive power loss in MVAr | |
	without UPFC	with UPFC	without UPFC	with UPFC	without UPFC	with UPFC
5 - 30	38.74	45.65	12.64	9.012	-4.521	-2.544
13 - 27	44.83	48.81	14.78	10.272	5.647	3.143
5 - 20	32.54	37.62	11.11	8.642	-3.689	-2.572
2 - 10	78.71	86.74	12.79	8.117	2.612	1.271
11 - 27	40.89	49.01	10.68	6.453	-3.422	-2.015
8 - 30	18.52	28.04	6.921	5.945	-4.178	-2.272
2 - 23	19.54	26.09	15.62	8.667	1.612	0.675
5, 8, 11- 27, 30	20.54	32.67	16.42	13.45	-6.128	-4.171
8, 13 – 27, 20	18.63	28.76	17.61	13.97	6.534	4.272
2, 8, 13 - 23, 27	12.84	19.45	18.67	15.48	-4.137	-3.002

VII. CONCLUSION

The present work has been undertaken to demonstrate the application of UPFC device for ATC enhancement and to relieve transmission congestion in heavily loaded systems. Flower Pollination Algorithm has been used to compute the control parameters of the UPFC devices in order to maximize the ATC without any constraint violation. Different locations have been tried to choose the best location. Simulations have been carried out on

IEEE 30-bus systems. From the results obtained, it is established that UPFC significantly enhances ATC and reduces active and reactive power loss. Thus, it can be inferred that UPFC are efficient in congestion management and existing installations can be used to enhance ATC wherever congestion occurs.

VIII. ACKNOWLEDGEMENT

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EVALUATING THE EFFICIENCY OF MODIFIED COMMUNICATIVE APPROACH IN TEACHING ENGLISH AT SECONDARY LEVEL SCHOOLS

Dr. Rohit P. Bagthariya
Research Scholar, Department of Education, Saurashtra University, Rajkot

ABSTRACT
In the present study, there is a testing of the effectiveness of Modified Communicative Approach in the comparison of the Traditional Approach in the teaching of English subject. The objectives of this study are: (1) to develop tasks, based on Modified Communicative Approach (2) To develop activities based on Modified Communicative Approach for the selected lessons (3) To prepare tests for assessing the efficiency of Modified Communicative Approach. This research was experimental research. 'Two paired only posttest' pattern was followed in this study. The secondary school of Chotila Taluka were taken as population. There were sixty students as the sample moreover; the teaching programme was prepared on both of the methods. The teacher made test was used as a tool. Mean, Standard Deviation and t-value were used to analyze the data. The result of the study was Modified Communicative Approach was more effective than the Traditional Approach in the teaching of English subject.

Keywords: Modified Communicative Approach, Language Teaching, and Communication.

0.1 INTRODUCTION
Education of English language in Gujarat has been made compulsory from the primary level; in spite of these students have futile to produce the language in day to day communication. Language teaching tactics and styles have not been able to address these problems faced by students. Moreover, the teachers do not get the freedom to experiment with new techniques in the classroom as the focus of the present educational system is more on the end result in the form of exam results. Because of these reasons, the students get less input and they fail to produce language in their day to day communication. In this paper, the researcher tries to find out the methods which convince to increase the comprehensibility of texts and also stimulate students to produce language.

0.2 OBJECTIVES OF THE STUDY
The present research was carried out with the following objectives.

• To develop tasks, based on Modified Communicative Approach

• To develop activities based on Modified Communicative Approach for the selected lessons

• To prepare tests for assessing the efficiency of Modified Communicative Approach

0.3 HYPOTHESES OF THE STUDY
The research hypothesis of the present study was as follows:

1. There will be a significant difference between the mean scores of students taught by Modcom Approach and Traditional Approach.

To test the research hypothesis the researcher has converted it into a null hypothesis. The null hypothesis of the present study was as follows:

2. There will be no significant difference between the mean scores of students taught by Modcom Approach and Traditional Approach.

0.4 VARIABLES
The present research was experimental research. Variables involved in the study were…

1. **Independent Variable.** The independent variable was the treatment i.e. Modified Communicative Approach.

2. **Dependent Variable. S**tudents' mean scores on post-test i.e. educational achievement

3. **Control Variables.** The variables (1) Gender, (2) Grade, and (3) School environment were controlled during the experimentation.

4. **Intervening Variables.** In the present study (1) Novelty of the experiment, (2) Interaction between the students of the experimental group and control group and (3) Individual difference in intelligence, motivation, learning interest and study habits.

0.5 RESEARCH METHOD
An experimental research method was followed in the present study in which 'two paired only 'post-test' pattern was followed

0.6 POPULATION AND SAMPLE
In this study, the researcher had taken one Gujarati Medium School Shree Government Secondary School – Piprali of Chotila Taluka as the population. The researcher had taken sixty students as the sample in which thirty were in the experimental group and the rest thirty were in the controlled group.

0.7 RESEARCH TOOL
The main aim of this study was to examine the effectiveness of Modified Communicative Approach in the comparison of the Traditional Approach for the teaching of English Language Researcher had used teacher made test.

0.8 TEACHING PROGRAMME
In the present study, the researcher had prepared two teaching programs for teaching through Modified Communicative Approach in the comparison of the Traditional Approach.

0.9 ANALYSIS OF DATA AND INTERPRETATION
At the end of the experiment Mean, Standard Deviation and t-value were calculated on the marks obtained by the students of both groups on the teacher made test.' The detail about it is given in the table-1.

Table-1: Classification of the Marks obtained by the Students on Teacher-Made Test

Teaching Method	Number of Student	Mean	Standard Deviation	T value
Modified Communicative Approach	30	26.10	3.53	3.24*
Traditional Approach	30	22.70	4.55	

* Significant at 0.01 level

It can be observed from table-1 that the mean of the achieved marks by the group taught by Modcom Approach was 26.10 whereas standard deviation was 3.53. The mean of the achieved marks by the group taught by Traditional Approach was 22.70 whereas standard deviation was 4.55. The t-value difference between the means of both groups was 3.24 which was significant at the 0.01 level. Thus, the hypotheses of this study "There will be no significant difference between the mean scores of students taught by Modcom Approach and Traditional Approach" is not accepted. Which means the achievement of the students taught by Modcom Approach was higher. Thus Modcom Approach was more effective than the Traditional Approach in the teaching of English.

0.10 RESULT OF THE STUDY
The results of the present study in reference to null hypotheses were as following:

- Modcom Approach was more effective than the Traditional Approach in the teaching of English.

- The teaching of English through Modcom Approach was more effective in the comparison of the teaching of English through the Traditional Approach.

0.11 CONCLUSION
To conclude, the research study was significant in establishing that the teaching of English through Modcom Approach promises a better comprehension of the text. It also creates confidence among the students that they can learn English without translation. As a result, the study advocates the potential of using Modcom Approach that can definitely be tapped in order to provide new ways of configuring and accessing language learning opportunities.

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FLOWER POLLINATION ALGORITHM OPTIMIZED PDFF CONTROLLER FOR AUTOMATIC GENERATION CONTROL OF A TWO-AREA HYDRO-THERMAL RESTRUCTURED POWER SYSTEM

S. Karthikeyan
Lecturer, Department of EEE, Government Polytechnic College, Kottur, Theni

ABSTRACT
This paper presents Pseudo-Derivative Feedback with Feed-forward controller (PDFF) controller based Automatic Generation Control (AGC) of a two-area hydro-thermal interconnected restructured power system. The control parameters of PDFF controller are advanced utilizing Flower Pollination Algorithm (FPA) so as to accomplish the optimal transient response of the test system under for various kinds of conceivable exchanges in restructured environment. The proposed PDFF controller is utilized in AGC application which finds the zero at an optimal place that abbreviates the step response rise time without overshoot and gives better dynamic performance of the system over PI controller. Integral Square Error (ISE) criterion of the test system was considered as an objective function to be minimized for tuning the gains of PDFF controller using FPA. The simulation results reveal that the supremacy of projected PDFF controller, the dynamic output performance of AGC loop have improved in terms of less peak deviation and settling time of area frequencies and tie-line power in different transactions of deregulated power system.

Keywords: Automatic Generation Control, Flower Pollination Algorithm, Pseudo-Derivative Feedback with Feed-forward controller and Restructured power system

1. INTRODUCTION

The essential capacity of an electrical power system is to give a protected, financial and solid wellspring of power to the purchaser. The effective task of interconnected power systems requires the coordinating of absolute generation with all out load request and related system misfortunes. The operating point of a power system changes with time and hence systems may experience deviations in nominal system frequency and scheduled power exchanges to other areas, which may yield to undesirable effects [1]. Present day power system typically comprises various subsystems interconnected through tie lines. For each subsystem the requirements usually include matching system generation to system load and regulating system frequency. This is basically known as Automatic Generation Control (AGC) issue. It is desirable to achieve a better frequency constancy than is obtained by speed governing system alone. In case of an interconnected power system, any small sudden load change in any of the areas causes the fluctuation of the frequencies of each and every area and also there is fluctuation of power in tie line. The main goals of Automatic Generation Control (AGC) are, to maintain the real frequency and the desired power output (megawatt) in the interconnected power system and to control the change in tie line power between control areas. So, a AGC scheme basically incorporates an appropriate control system for an interconnected power system, which is heaving the capability to bring the frequencies of each area and the tie line powers back to original set point values or very nearer to set point values effectively after the load change. This is achieved by the use of conventional controllers. The traditional AGC two-area interconnected power system is modified to take into account the role of AGC in open market power system. Open transmission access and the evolving of more socialized companies for generation, transmission and distribution affects the formulation of AGC problem to accommodate new constraints associated with territorial functionality of each company. So the traditional AGC two-area interconnected power system is modified to take into account the effect of bilateral contracts on the dynamics [2].

In the deregulated structure, several independent entities like distribution companies (DISCOs), generation companies (GENCOs), transmission companies (TRANSCOs) and independent system operators (ISO) have been introduced. ISO is independent, disassociated agent for market participants who perform various ancillary services and among them is the AGC. In open market scenario consumers have a choice to choose among DISCOs in their area, while DISCOs of an area have the freedom to have power contracts for transaction of power with GENCOs of the same or other area. Based on the bilateral transactions, a distribution company (Disco) has the freedom to contract with any available generation company (Genco) in its own or another control area. Therefore, the concept of physical control area is replaced by Virtual Control Area (VCA). The boundary of a VCA is flexible and encloses the Gencos and the Disco associated with the contract. These studies try to modify the conventional LFC system to take into account the effect of bilateral contracts on the dynamics and improve the dynamic and transient response of the system under various operating conditions [3].

A Disco Participation Matrix (DPM) is used for hallucination of bonds between Gencos and Discos [3]. Regarding few secondary controllers namely, proportional-integral (PI), proportional-integral-derivative (PID)

are found in the literature of AGC. These controllers are the first stage closed loop controllers designed for overcome the limitations of open loop control system. The performances for Integral (I), Proportional–Integral (PI), Integral–Derivative (ID), and Proportional–Integral–Derivative (PID) controllers in AGC are practically the same from the viewpoint of dynamic responses [4]. However, the proposed Pseudo-Derivative Feedback with Feed-forward controller (PDFF) controller provides much better response than the aforesaid controllers. In this study PDFF controllers are designed and implemented using FPA algorithm in AGC loop of the interconnected restructured power system. The experimental results showed that the accuracy and speed performance of the PDFF controller had outperformed the other PI controller.

From literature survey the enhancement of power system performance not only depends on the control structure but also on the well-tuned controllers. For this purpose, a number of artificial optimization techniques are utilized. So a new high performance heuristic optimization algorithm is always welcome to solve real world problems. Flower Pollination Algorithm (FPA) is a newly developed heuristic optimization method based on Pollination of flowers. It has only one key parameter p (switch probability) which makes the algorithm easier to implement and faster to reach optimum solution [5, 6]. FPA has special capabilities such as extensive domain search with quality and consistency solution [6]. In this study is focused on design of Flower Pollination Algorithm (FPA) based Pseudo-Derivative Feedback with Feed-forward controller (PDFF) controller for Automatic Generation Control (AGC) of a two-area hydro-thermal reheat interconnected power system under deregulated environment.

2. STRUCTURE OF A RESTRUCTURED POWER SYSTEM

The process of deregulation has taken different formats in different parts of the world. Also, the reasons for power sector to adopt the reforms vary from country to country. For the developed countries, introduction of competition to achieve social welfare was probably the most important reason. On the other hand, the developing countries mainly banked on the capacity addition through entry of private players. It is observed that neither, there is lone reason for driving deregulation of power industry nor is there a single objective of the same. The restructuring process starts with the unbundling of the originally vertically integrated utility. This essentially leads to separate the activities involved in an integrated power system leading to creation of functional partition amongst them. For example, the unbundling of power industry involves separating transmission activity from the generation activity. Further, distribution can be separated from transmission. Thus, these three mutually exclusive functions are created and there are separate entities or companies that control these functions. Then, the competition can be introduced in the generation activity by allowing other private participants in this segment. In contrast to the vertically integrated case where all the generation is owned by the same utility, there is a scope for private players to sell their generation at competitive prices. The generators owned by the earlier vertically integrated utility will then compete with these private generators. The transmission sector being a natural monopoly is most unlikely to have competing players in the sector. This is because for natural monopolies like transmission companies, the business becomes profitable only when output is large enough. Fig 1 shows the representative structure of restructured power system. In contrast to the vertically integrated utility structure, it can be seen that there are many alternative paths along which the money flows. It is evident that there are many more other entities present, apart from the vertically integrated utility and the customers. It should be noted that there can be many more versions of deregulated structure.
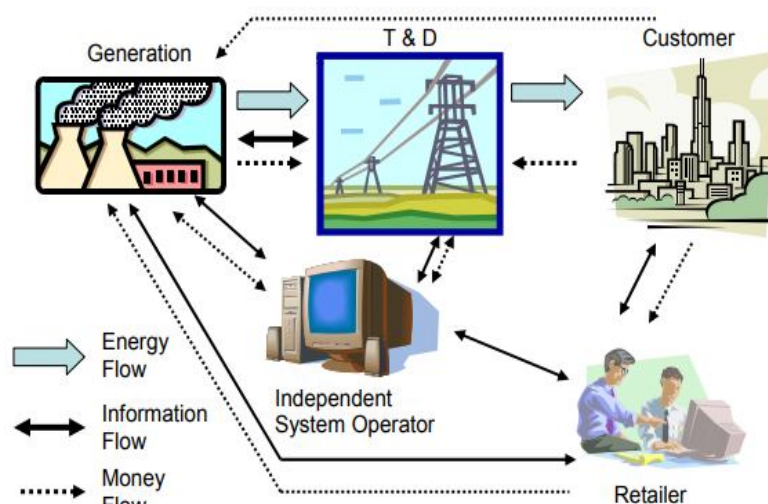

Figure-1: structure of a restructured power system

3. AUTOMATIC GENERATION CONTROL IN RESTRUCTURED ENVIRONMENT

The AGC is a significant control process that operates constantly to balance the generation and load in power systems at a minimum cost. AGC provides an effective mechanism for adjusting the generation to minimize frequency deviation and regulate tie-line power flows. The AGC system realizes generation changes by sending signals to the under-control generating units. The performance of an AGC system is highly dependent on how quickly and effectively generating units respond to the commands. However, the response characteristics of generating unit are associated with numerous factors, such as type of unit, fuel, control strategy, and operating point. Since the frequency generated in the power system network is proportional to the rotation speed of the generator, the problem of frequency control may be directly converted into a speed control problem of the turbine generator unit. This is initially done by augmenting a governing mechanism that senses the generator speed, and adjusts the input valve for changing the mechanical power output to track the load change and for restoring nominal frequency value. In Fig 2 shows the schematic diagram of two-area power system in restructured environment.
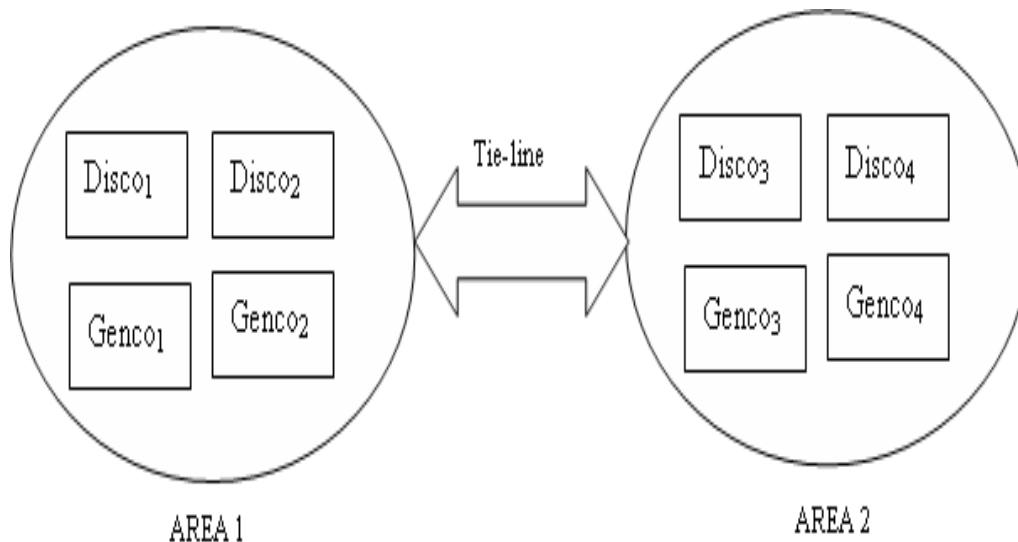

Figure-2: Schematic diagram of two-area power system in restructured environment

The restructured power system structure changed in such a way that would allow the evolving of more specialized industries for generation (Genco), transmission (Transco) and distribution (Disco). In the restructured power system, Discos in each area can contract with Gencos in its own or other areas. As there are several Gencos and Discos in the restructured power system, a Disco has the freedom to have a contract with any Genco for transaction of power. Such transactions are called bilateral transactions. All the transactions have to be cleared through an impartial entity called an Independent System Operator (ISO). The ISO has to control a number of so-called ancillary services, one of which is load frequency control. There is some difference between the AGC operation in conventional and deregulation environment. After deregulation, optimization and operation are changed but their basic idea for AGC is kept same. In the new environment, Discos may contract power from any Gencos and independent system operator has to supervise these contracts. Disco Participation Matrix (DPM) concept is taken to understand the several contracts that are implemented by the Gencos and Discos. A DPM is a matrix with the number of rows equal to the number of Gencos and the number of columns equal to the number of Discos in the system. Each entry in this matrix can be thought of as fraction of a total load contracted by a Disco towards a Genco. The sum of all the entries in a column DPM is unity. In this study two-area hydro-thermal interconnected power system in which each area has two Gencos and two Discos is shown in Fig 3. Let $Genco_1$, $Genco_2$, $Disco_1$, $Disco_2$ be in area 1 and $Genco_3$, $Genco_4$, $Disco_3$, $Disco_4$ be in area 2 as shown in Fig 3. The corresponding DPM is given as follow

$$DPM = \begin{bmatrix} cpf_{11} & cpf_{12} & cpf_{13} & cpf_{14} \\ cpf_{21} & cpf_{22} & cpf_{23} & cpf_{24} \\ cpf_{31} & cpf_{32} & cpf_{33} & cpf_{34} \\ cpf_{41} & cpf_{42} & cpf_{43} & cpf_{44} \end{bmatrix} \tag{1}$$

Where *cpf* represents "contract participation factor" i.e. p.u. MW load of a corresponding Disco. The scheduled steady state power flow on the tie-line is given as
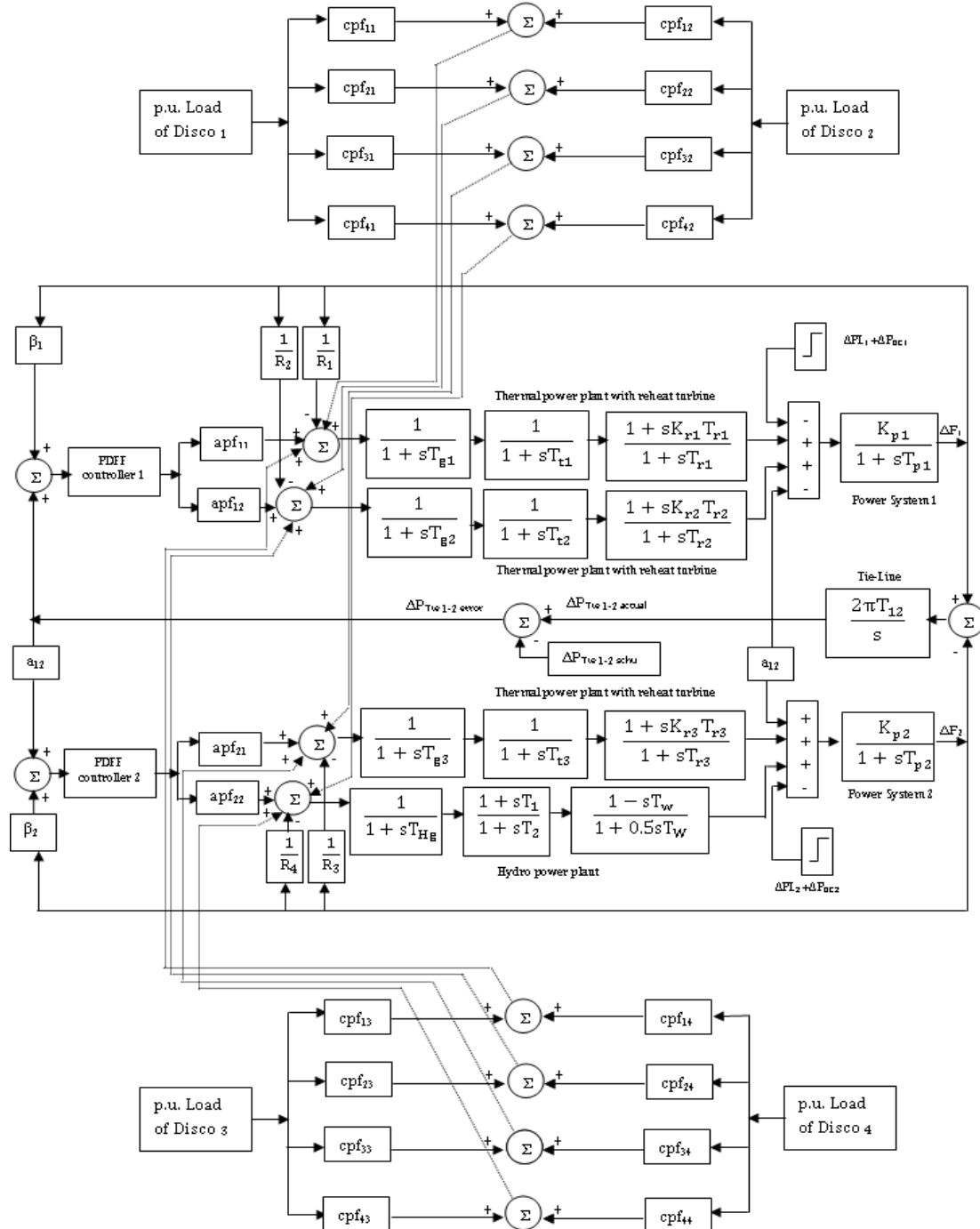
Figure-3: Linearized model of a two-area thermal-hydro power system in restructured environment

$$\Delta P_{Tie\,12}^{scheduled} = \sum_{i=1}^{2}\sum_{j=3}^{4} cpf_{ij}\,\Delta P_{Lj} - \sum_{i=3}^{4}\sum_{j=1}^{2} cpf_{ij}\,\Delta P_{Lj} \tag{2}$$

The actual tie-line power is given as

$$\Delta P_{Tie\,12}^{actual} = \frac{2\pi T_{12}}{s}\left(\Delta F_1 - \Delta F_2\right) \tag{3}$$

At any given time, the tie-line power error is given by

$$\Delta P_{Tie\,12}^{Error} = \Delta P_{Tie\,12}^{actual} - \Delta P_{Tie\,12}^{scheduled} \tag{4}$$

$\Delta P_{Tie\,12}^{Error}$ Vanishes in the steady as the actual tie-line power flow reaches the scheduled power flow. This error signal is used to generate the respective Area Control Error (ACE) signals as in the traditional scenario.

$$ACE_1 = \beta_1 \Delta F_1 + \Delta P_{Tie12}^{Error} \tag{5}$$

$$ACE_2 = \beta_2 \Delta F_2 + a_{12}\Delta P_{Tie12}^{Error} \tag{6}$$

The generation of each Genco must track the contracted demands of Discos in steady state. The desire total power generation of ith Genco in terms of DPM entries can be calculated as

$$\Delta P_{m.i} = \sum_{j=1}^{4} cpf_{ij} \Delta P_{Lj} \tag{7}$$

As there are two Gencos in each area, ACE signal has to be distributed among them in proportion to their participation in the AGC. Coefficients that distribute ACE to Gencos are termed as "Area Participation Factors (apfs)". In a given control area, the sum of participation factors is equal to 1. Hence, apf_{11}, apf_{12} are considered as ACE participation factor in area 1 and apf_{21}, apf_{22} are in area 2.

4. DESIGN OF PDFF CONTROLLERS USING FLOWER POLLINATION ALGORITHM
4.1 Control structure of PDFF controller
In PI controller K_P provides stability and high frequency response and K_I ensures that the average error is driven to zero. So no long term error, as the two gains are tuned. This normally provides high responsive systems. But the predominant weakness of PI controller is it often produces excessive overshoot to a step command. The PI controller lacks a windup function to control the integral value during saturation. In this work the use of PDFF-controller which modifies PI, allowing the user to eliminate overshoot and provide much more DC stiffness than PI controller.

Figure-4: Block diagram for PDFF control with AGC loop

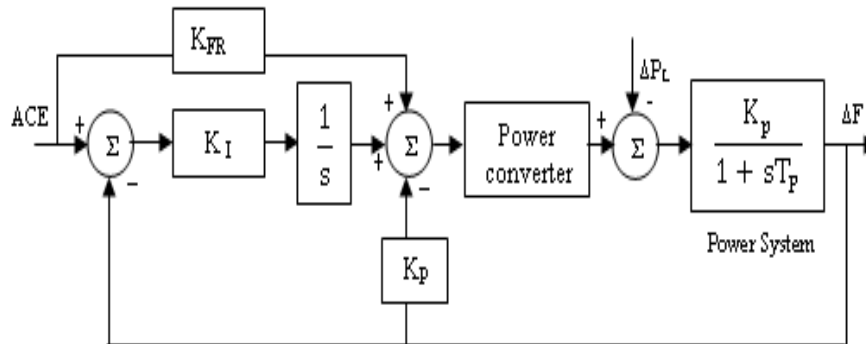The Fig 4 shows a block diagram of PDFF controller with AGC loop. Like the PI controller, it has an integral gain (K_I) and a proportional gain (K_P). PDFF adds the gain K_{FR}, which allows the user to raise the integral gain in some applications. When an application requires the maximum responsiveness, you don't need much integral gain. Here, you set K_{FR} high. When the application requires maximum low-frequency stiffness, set K_{FR} low; this allows much higher integral gain without inducing overshoot. Unfortunately, it also makes the system slower in responding to the command. The majority of motion control applications are in the middle and $K_{FR} = 65\%$ usually gives good results. In this study K_{FR} set to 0.65 then K_P and K_I value are tuned using Flower Pollination Algorithm (FPA) techniques. The main function of AGC is to control load frequency and tie line power during load disturbance. So the error signals of frequency and tie line power are used as design criteria to tune the PI controller. An objective function is created which uses the variables of the population from FPA, passes through a model containing two area power systems and obtains the error signals frequency and tie line power. The performance of these responses is measured using performance functions such as Integral of Squared Error (ISE) given by Eqn (8) [7]. The performance of these responses is measured using performance functions such as Integral of Squared Error (ISE) given by Eqn (3.10).

$$J = \int_0^{t_{sim}} [(\beta \Delta F_1)^2 + (\beta \Delta F_2)^2 + (\Delta P_{tie})^2] \, dt \tag{8}$$

The relative simplicity of this controller is a successful approach towards the zero steady state error in the frequency of the system. The proposed PI and PDFF controllers are design using FPA and implemented in two-area thermal-hydro power restructured power system

4.2 Design of the PDFF Controller using Flower Pollination Algorithm
Yang emulated the characteristic of the biological flower pollination in flowering plant to develop single objective FPA based on the rules listed as follows: (i) The global pollination processes are biotic and cross pollination through which the pollen transports pollinators perform the levy flight, (ii) Local pollination is viewed as abiotic and self pollination. (iii) Reproduction probability is considered as flower constancy which is proportional to the resemblance of the two flowers in concerned and (iv) The switching probability controlled both the local and global pollination $p \in [0, 1]$. Local pollination can have fraction p that is significant in the entire processes of the pollination because of physical proximity and wind. The plant can possess multiple

flowers and every flower patch typically emits millions or even billions of pollen gametes in real life pollination practice. To simplify the proposed algorithm development, it was assumed that each plant has a single flower and each flower emit only a single pollen gamete. This result is to the elimination of the need to differentiate pollen gamete, plant or solution to a problem. This means that a solution xi to a problem is equivalent to a flower and pollen gamete. The major stages in the design of FPA are global and local pollination. In the global pollination, the pollens of the flowers are moved by pollinators e.g. insects and pollens can move for a long distance since the insects typically fly for a long range of distances. This process guarantees pollination and reproduction of the fittest solution represented as g*. The flower constancy can be represented as:

$$x_i^{t+1} = x_i^t + L(x_i^t - g_*) \qquad (9)$$

where x_i^t is the pollen i or solution vector x_i at iteration t, and g_* is the current best solution found among all solutions at the current generation/iteration. The parameter L is the strength of the pollination, which essentially is a step size. Since insects may move over a long distance with various distance steps, which is mimicked by levy distribution of flight and mathematically represented as

$$L \sim \frac{\lambda \Gamma(\lambda) \sin\left(\frac{\pi \lambda}{2}\right)}{\pi} \frac{1}{s^{1+\lambda}} \qquad (s \ll s_0 > 0) \qquad (10)$$

where $\Gamma(\lambda)$ is the standard gamma function, and this distribution is valid for large steps s > 0. The local pollination and flower constancy can be represented as

$$x_i^{t+1} = x_i^t + \varepsilon(x_j^t - x_k^t) \qquad (11)$$

where x_j^t and x_k^t represent pollen from different flowers of the same species of plant. Thus, mimic the flower constancy in a limited neighbourhood. The switch probability or proximity probability is used to switch between common global pollination to intensive local pollination. The effectiveness of the FPA can be attributed to the following two reasons: (i) Insect pollinators can travel in long distances which enable the FPA to avoid local landscape

to search in a very large space (explorations). (ii) The FPA ensures that similar species of the flowers are consistently chosen which guarantee fast convergence to the optimal solution (exploitation). The proposed flower pollination algorithm for solving AGC application

(i) Step 1: Initialize the objective function as given in the equation (8).

(ii) Step 2: Initialize a population of x = (x_1, x_2 ...x_{NF}) flowers/pollen gametes with the population size of *NF x N*. Where *NF* is the number of flowers as 30 and *N* is the dimension size depends on the number of controller gain values for each area in the two area system. In this study *N* is equal to four because PI controller is used to in each area (K_{P1}, K_{I1} K_{P2}, K_{I2}) and calculate the Fitness for each solutions.

(iii) Step 3: Find the best solution to the initial population and define a switch probability p ∈ [0, 1] and define a stopping criterion (a fixed number of generations/iterations).

(iv) Step 4: while (t <Maximum Generation) for i = 1: n (all n flowers in the population)   if rand < p, Draw a (d-dimensional) step vector L which obeys a Levy distribution Global pollination has been done using equation (10). Else draw ε from a uniform distribution in   [0, 1]. Randomly choose j[th] and k[th] flower among all the solutions and do local pollination through equation (9), end if.

(v) Step 5: Evaluate new solutions using the objective function. If new solutions are better, update them in the population, end for.

(vi) Step 6: Find the current best solution g based on the objective fitness value, end while.

5. SIMULATION RESULTS AND OBSERVATIONS
The proposed PI and PDFF controllers are designed and implemented two-area interconnected thermal-hydro power system for different type of transactions. In this test system have two generating unit in each area with same capacities is considered. The model of the system under study has been developed in MATLAB/SIMULINK environment. The nominal parameters are given in Appendix. In this work, Flower Pollination Algorithm (FPA) is used to tune the PI/PDFF controller for a two- area interconnected power system. Proportional gain constant (K_P), Integral gain constant (K_I), are considered as variables describing a

population defined in an FPA and $K_{FR}=0.65$. The optimal solution of control inputs is taken an optimization problem and the cost function in Eqn(8) is derived using the frequency deviations of control areas and tie-line power changes which uses the design criteria to calculate the flower constancy of the defined population. The parameter p defines the amount of local search and global search for FPA. To choose this parameter, the proposed method is simulated for various values and that simulated for p varies from 0.1 to 1 with step change of p with step size 0:01 in the range of 0.1 to 1. The optimum PI and PDFF controller gain values for the test systems are tuned for various case studies are listed in the Table 1 and Table 2 respectively. These PI/ PDFF controllers are implemented in a proposed thermal-hydro power system for different types of transactions.

Scenario 1: Poolco based transaction

In this scenario, Gencos participate only in the load following control of their areas. It is assumed that a large step load 0.2 pu MW is demanded by each Disco in area 1. Assume that a case of Poolco based contracts between Dicos and available Gencos is simulated based on the following Disco Participation Matrix (DPM) referring to Eq (1) is considered as

$$DPM = \begin{bmatrix} 0.5 & 0.5 & 0.0 & 0.0 \\ 0.5 & 0.5 & 0.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 0.0 \end{bmatrix} \quad (11)$$

$Disco_1$ and $Disco_2$ demand identically from their local Gencos, viz., $Genco_1$ and $Genco_2$. Therefore, $cpf_{11} = cpf_{12} = 0.5$ and $cpf_{21} = cpf_{22} = 0.5$. The comparative dynamic output response of the hydro-thermal system is shown in Fig 5 and results are tabulated in Table 3. From Fig 5 and Table 3, it can be observed that the proposed PDFF controller show better performance as compared with PI controller.

Scenario 2: Bilateral based transaction

In this case, the $Disco_1$, $Disco_2$, $Disco_3$ and $Disco_4$, demands 0.3 pu.MW, 0.1 pu.MW, 0.3 pu.MW and 0.1 pu.MW from Gencos as defined by cpf in the DPM matrix and each Gencos participates in AGC as defined by the following ACE participation factor $apf_{11} = apf_{12} = 0.5$ and $apf_{21} = apf_{22} = 0.5$. Here all the Discos have contract with the Gencos and the following Disco Participation Matrix (DPM) referring to Eqn (1) is considered as

$$DPM = \begin{bmatrix} 0.6 & 0.1 & 0.3 & 0.4 \\ 0.1 & 0.2 & 0.2 & 0.3 \\ 0.1 & 0.3 & 0.1 & 0.2 \\ 0.2 & 0.4 & 0.2 & 0.2 \end{bmatrix} \quad (12)$$

The comparative dynamic output response of the hydro-thermal system is shown in Fig 6 and results are tabulated in Table 3. From Fig 6 and Table 3, it can be observed that the proposed PDFF controller show better performance as compared with PI controller.

Table-1: Optimal PI controller gain values using FPA for two-area hydro -thermal restructured power system with corresponding Load demand change

Two-area hydro-thermal restructured power system	PI controller gain of area 1		PI controller gain of area 2		Load demand in pu.MW			
	K_P	K_I	K_P	K_I	$Disco_1$	$Disco_2$	$Disco_3$	$Disco_4$
Poolco based transaction	0.314	0.419	0.263	0.354	0.2	0.2	0.0	0.0
Bilateral transaction	0.319	0.364	0.284	0.375	0.3	0.1	0.3	0.1

Table-2: Optimal PDFF controller gain values using FPA for two-area hydro –thermal restructured power system with corresponding Load demand change

Two-area hydro-thermal restructured power system	PDFF controller gain of area 1 with $K_{FR}=0.65$		PDFF controller gain of area 2 with $K_{FR}=0.65$		Load demand in pu.MW			
	K_P	K_I	K_P	K_I	$Disco_1$	$Disco_2$	$Disco_3$	$Disco_4$
Poolco based transaction	0.294	0.405	0.252	0.343	0.2	0.2	0.0	0.0
Bilateral transaction	0.304	0.357	0.267	0.351	0.3	0.1	0.3	0.1

Table-3: Comparison of the system dynamic performance for two-area hydro –thermal restructured power system with different type transactions

Two-area hydro-thermal restructured power system	Controller	Setting time (τ_s) in sec			Peak over / under shoot		
		ΔF_1	ΔF_2	ΔP_{tie}	ΔF_1 in Hz	ΔF_2 in Hz	ΔP_{tie} in p.u MW
Poolco based transaction	PI	25.9	22.8	38.4	0.315	0.261	0.077
	PDFF	20.5	18.6	35.7	0.239	0.147	0.054
Bilateral transaction	PI	35.3	38.3	42.7	0.365	0.584	0.112
	PDFF	30.2	32.1	39.4	0.251	0.457	0.106

Figure-5(a): Changing in frequency deviations in area1
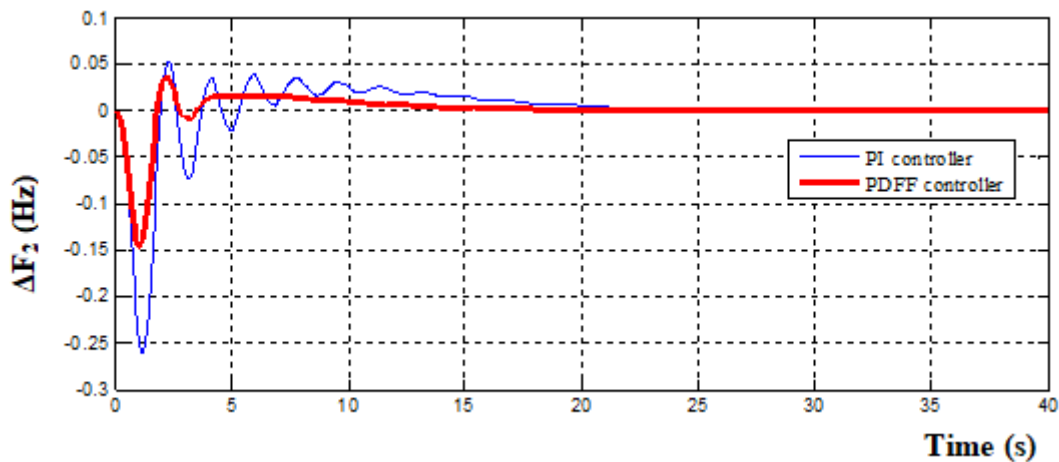
Figure-5(b): Changing in frequency deviations in area2

Figure-5(c): Changing in Tie-line power deviations

Figure-5: Dynamic responses of the frequency deviations, tie- line power deviations for a two area thermal- hydro power system using PI and PDFF controllers under Poolco based transaction
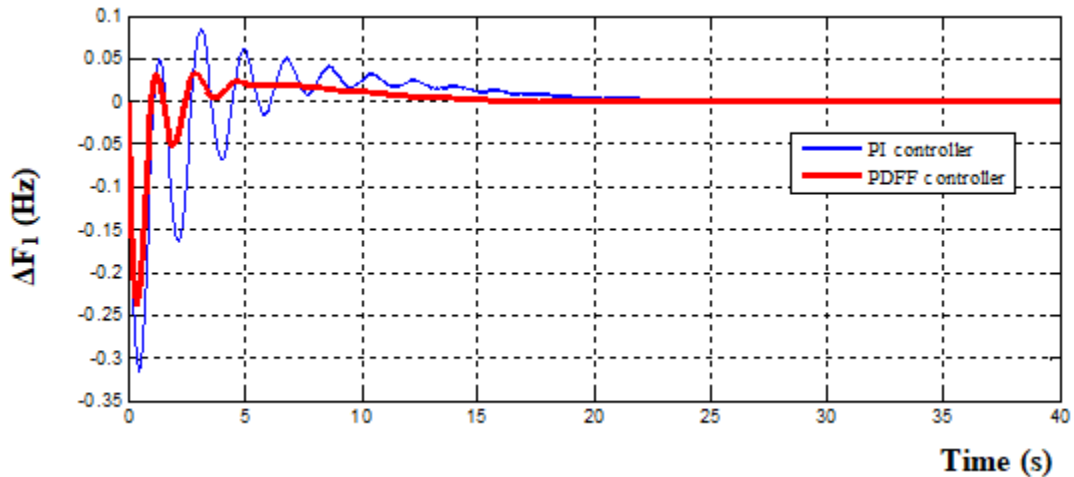

Figure-6(a): Changing in frequency deviations in area1

Figure-6(b): Changing in frequency deviations in area2

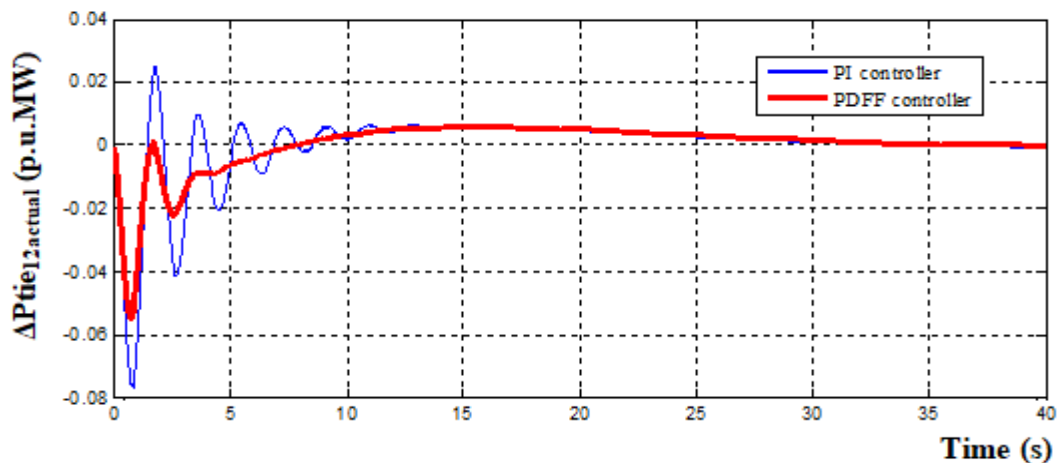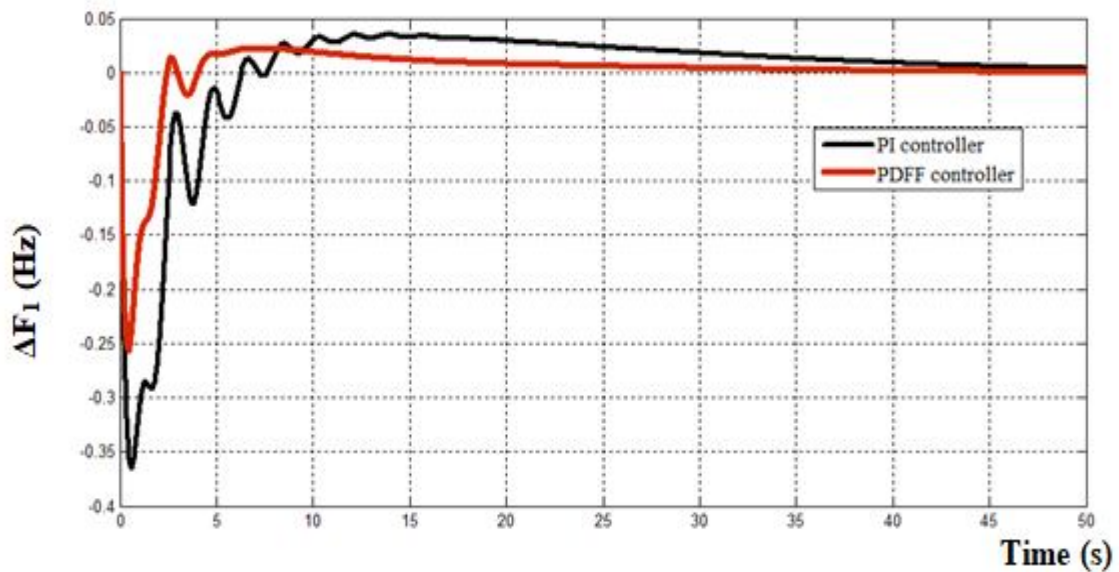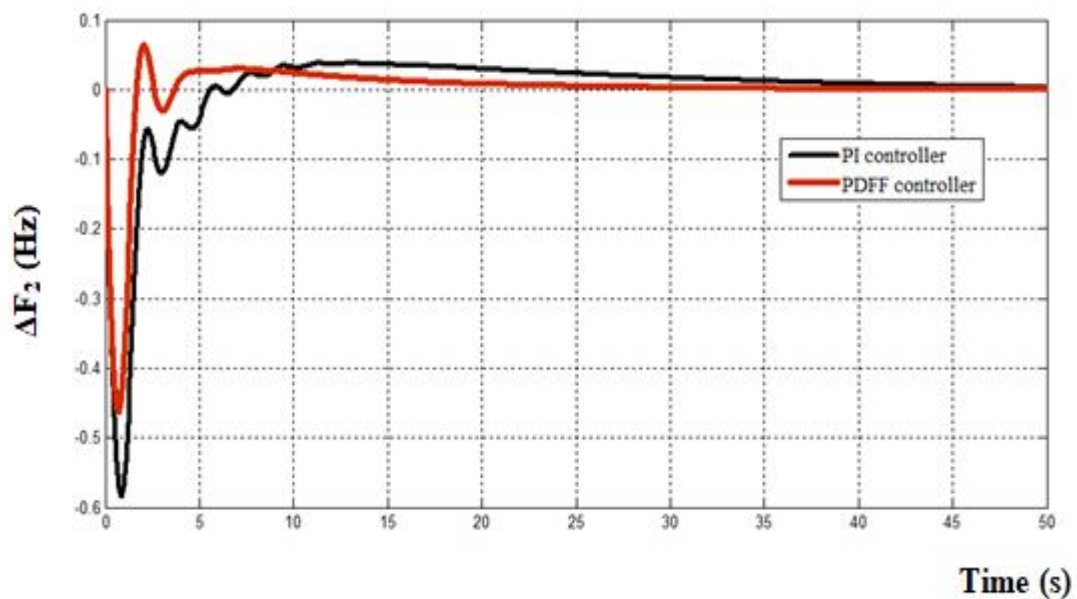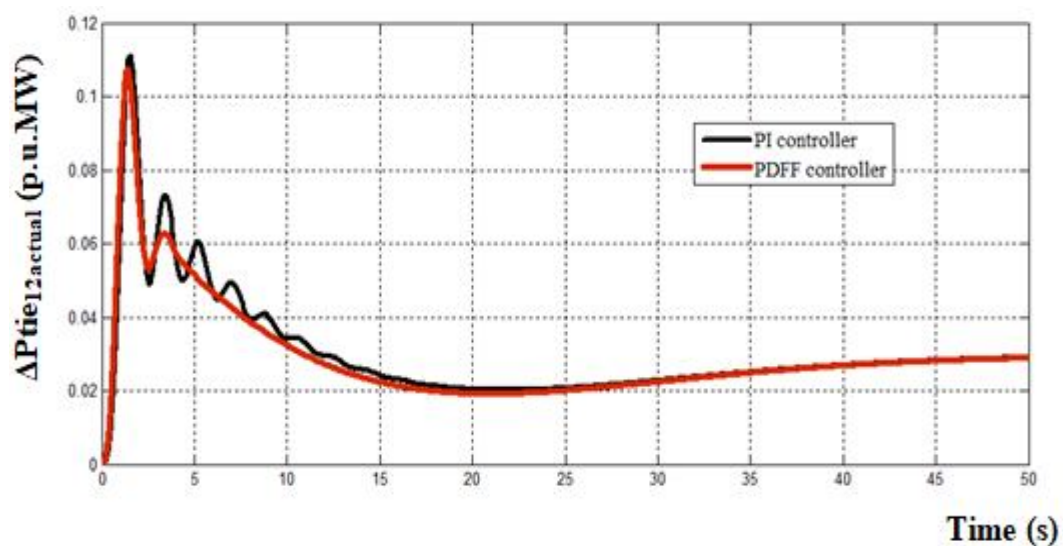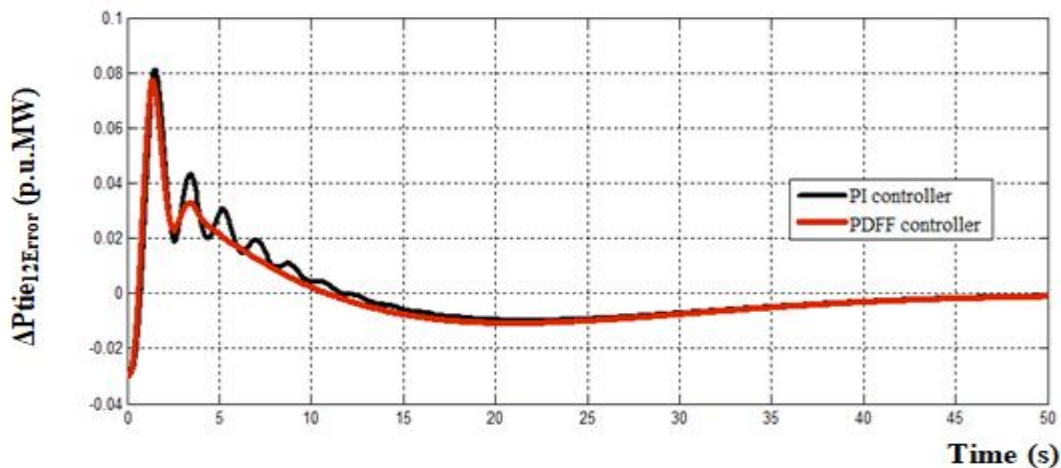Figure-6(c): Changing in Tie-line power deviations

Figure-6(c): Changing in Tie-line power deviations (Error)

Figure-5: Dynamic responses of the frequency deviations, tie- line power deviations for a two area thermal-hydro power system using PI and PDFF controllers under Bilateral based transaction

6. CONCLUSION

The proposed PDFF controllers are designed using FPA technique and implemented in two area hydro-thermal interconnected power system for different types transactions. The effectiveness of the proposed method is tested in a two-area hydro-thermal deregulated power system for a wide range of load demands and disturbances under different operating conditions. The proposed PDFF controller shows the better dynamic performance of AGC loop have improved in terms of less peak deviation and settling time of area frequencies and tie-line power deviations in different transactions of deregulated power system as compared with the system using PI controller. In the present work, the system has considered two-area Hydro-thermal interconnected power system in a restructured environment. Each area consists of two generating unit with different capacity. Further work may carried out with the system having multi-area, multi unit interconnected power system and each area can have different type of power generating units such as nuclear, wind, diesel and gas power system with multiple generating units.

7. ACKNOWLEDGEMENT

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APPENDIX

Data for the interconnected two-area Hydro-thermal interconnected Power System   [8, 9]

Rating of each area = 2000 MW,
Base power = 2000 MVA
f^o = 60 Hz
$R_1 = R_2 = R_3 = R_4 = 2.4$ Hz / p.u.MW
$T_{g1} = T_{g2} = T_{g3} = 0.08$ s
$T_{r1} = T_{r2} = T_{r3} = 10$ s
$T_{t1} = T_{t2} = T_{t3} = 0.3$ s
$K_{p1} = K_{p2} = 120$ Hz/p.u.MW
$T_{p1} = T_{p2} = 20$ s
$\beta_1 = \beta_2 = 0.425$ p.u.MW / Hz
$K_{r1} = K_{r2} = K_{r3} = 0.5,$
$T_{Hg} = 0.2$s
$T_1 = 0.513$s, $T_2 = 10$s, $T_w = 1$s
$2\pi T_{12} = 0.545$ p.u.MW / Hz,
$a_{12} = -1$

NATIONAL HEALTH PROTECTION SCHEME- A REVIEW

Dr. Alka Mittal

Faculty, Department of Business Administration, Maharaja Surajmal Institute, (Affiliated to Guru Gobind Singh Indraprastha University), New Delhi

ABSTRACT

India has recently announced the "Ayushman Bharat–National Health Protection Scheme (AB□NHPS)," one of the largest government health insurance schemes in the world. The scheme aims to provide quality health care to the poor and vulnerable families, a step forward toward the government's commitment on universal health care. The beneficiary households under the AB□NHPS will be based on the deprivation and occupation status of the family, drawn from the

Socioeconomic and Caste Census database. The scheme will take care of all the secondary health care and most of the tertiary health care procedures. The road map envisaged for the implementation of the scheme consists of number of challenges such as funding, acceptance by the states, exclusion of primary health care, and outpatient expenditure from the scheme. We conclude that successful implementation of the said scheme will require robust planning, stringent regulations, simplified processes, and continuous monitoring using advanced technological E□health platforms.

INTRODUCTION

The government of India has launched "world's largest government funded health care programme" titled National Health Protection Scheme (NHPS) to cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries). The scheme will give "coverage up to Rs 5 lakh per family every year for secondary and tertiary care hospitalization".

India is second most populous country in the world. The government's new programme is the fourth iteration of the Rashtriya Swasthya Bima Yojana (RSBY). In 2016-2017, RSBY was renamed the Rashtriya Swasthya Suraksha Yojana (RSSY) and in 2017-2018, this was renamed the NHPS. The NHPS had agreed to provide Rs 1 lakh per family. The RSBY offered Rs 30,000 to poor families.

Currently there are six major public health insurance schemes run by the government—Rashtriya Swasthya Bima Yojana (RSBY), Employees' State Insurance Scheme (ESIS), Central Government Health Scheme (CGHS), Aam Aadmi Bima Yojana (AABY), Janashree Bima Yojana (JBY) and Universal Health Insurance Scheme (UHIS).

According to latest estimates of NFHS (2015-16), 29% households had insurance coverage. This would mean that of 29 crore individuals or seven crores families, are already covered under some form of health insurance. Of these, 83%, (49% under state-government funded health schemes and 34% under RSBY), i.e. around six crore families, are already covered under government-funded schemes. Even if we consider that the proposed NHPS will subsume all existing schemes, the proposed target of 10 crore families involves an addition of 3 crore households only. National Health Protection Scheme (NHPS) will require an annual outlay of Rs. 10,000 crore, the Niti Aayog has estimated. The Centre's share will be 60 per cent, about Rs. 6,000 crore, while the rest will come from the States. The beneficiaries will not have to pay anything.

National Health Protection Scheme: A Necessary Boost for India's Ailing Health Sector

Assuming that NHPS would be offered like RSBY, an annual premium in the tune of Rs. 20000 – Rs. 30000 would be required. Even if this is reduced to. 10,000 per family per year, India would need Rs. 100,000 crores to pay premium for proposed NHPS. Even more conservative premium of Rs. 2000 per family per year, would warrant Rs. 20,000 crores. Assuming that the scheme will be rolled out over five years to cover two crores family every year, India would need Rs. 4,000 crores per year to provide for such coverage, without considering inflation. Such increase in financial allocation is not impossible. However, disbursement and absorptive capacity of the health system needs rapid and sustained strengthening.

The intention of subsuming all existing schemes under a 'single payer' mechanism may not be easy. State-level insurance coverage ranges from five to six percent in Jammu and Kashmir and Uttar Pradesh to more than two-third of state population in Tamil Nadu and Andhra Pradesh. The high-coverage state level schemes are running on state funds, without centrally sponsored RSBY. These states would difficult to convince to give up their populist schemes.

National Health Protection Scheme(NHPS)

National Health Protection Scheme
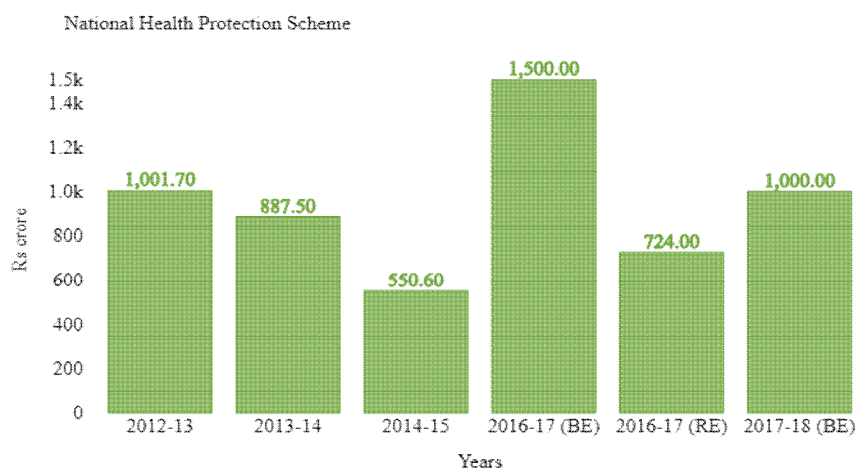
Source: Compiled by CBGA from Union Budget for various years

The figures include the allocations for Rashtriya Swasthya Bima Yojana(RSBY) under both the Ministry of Health & Family Welfare and Ministry of Labour & Employment. Since 2015-16, Since 2015-16, RSBY has been divided into two distinct components - Social Security for the unorganised workers and provision for health services. The card would be provided by Ministry of Labour and Employment and the health services would be provided by Ministry of Health & Family Welfare. The RSBY was renamed RSSY in 2016-17 and NHPS in 2017-18. Moreover the allocation, mentioned under RSSY for 2016-17 (BE) in the last budget documents was Rs. 1641.5 crore. This year's document gives the figure for NHPS (erstwhile RSSY) as Rs. 1500 crore for 2016-17 (BE). The National Health Protection Scheme (NHPS), announced in the last budget, was supposed to provide health cover up to Rs.1 lakh per family for poor and economically weak families. However, it is not clear whether the erstwhile RSSY (RSBY) has merely been renamed as NHPS, without any change in the entitlement under the scheme. The 2017-18 budget does not give any evidence of this increase.

Further, with the government's own admission, the recently released National Family Health Survey (NFHS-4) by the ministry of health and family welfare depicts that health insurance coverage in India is far from satisfactory, especially in rural areas. According to the survey, less than one-third (29%) of households have at least one member covered under health insurance or health scheme. Only 20% of women aged 15-49 and 23% of men aged 15-49 are covered by a health insurance or health scheme.

The survey said that half of those with insurance are covered by a state health scheme and more than one-third by RSBY. The beneficiaries under the government's ambitious RSBY scheme in 2017 were 36,332,475. Only 4% of women and 3-5% of men are covered by ESIS or CGHS.

According to public health experts, programmes such as CGHS and RSBY, which can serve as change agents for strengthening healthcare and achieving universal health coverage, have either failed in implementation or have been ineffective in offering access to healthcare.

At the claims stage, misutilization or fraud can take multiple forms. There is lack of robust management information systems in the CGHS which compromises the ability of these schemes to purchase effectively, control costs, and measure performance.

A 2017 study published in *PLOS One* journal, Impact of Publicly Financed Health Insurance Schemes on Healthcare Utilization and Financial Risk Protection in India, said that while utilization of healthcare improved among those enrolled in various government schemes, there is no clear evidence yet to suggest that these have resulted in reduced OoP (out of pocket) expenditure or higher financial risk protection. The health ministry received a total of Rs 52,800 crore in comparison Rs47,353 crore from the previous year.

Issues with the NHPS
The government's intention to launch the world's largest health insurance programme, the National Health Protection Scheme, raises an important issue. Should the focus be on the demand side of health-care finance when the supply side, the public health infrastructure, is in a shambles? Experience with insurance schemes, such as the Centre's Rashtriya Swasthya Bima Yojana and Andhra Pradesh's Rajiv Aarogyasri, show how demand side interventions can miss the mark. While the RSBY and Aarogyasri did improve access to health-

care overall, they failed to reach the most vulnerable sections. At times they led to unnecessary medical procedures and increased out-of-pocket expenditure for poor people, both of which are undesirable outcomes. These showed that unless the public health system can compete with the private in utilising funds from such insurance schemes, medical care will remain elusive for those who need it most. Policymakers behind the NHPS, which will cost the government around Rs. 5,000 crore in its first year, must take heed.

Both RSBY and Aarogyasri are cashless hospitalisation schemes. While both benefited people living below the poverty line, over-reliance on private hospitals and poor monitoring watered down their impact. According to one Gujarat-based study, a majority of RSBY insured patients ended up spending about 10% of their annual income during hospitalisation, because hospitals still charged them, unsure as they were when they would be compensated. A study in Andhra Pradesh found that beneficiaries spent more from their own pockets under Aarogyasri. They spent most of their money on outpatient care, and Aarogyasri didn't tackle this adequately. Possibly the most problematic fallout was mass hysterectomies done in Andhra Pradesh. Between 2008 and 2010, private hospitals removed the uteri of thousands of women unnecessarily, to make a quick buck. Thus, perverse incentives can drive the private sector to sabotage schemes that are not well monitored. The second problem with over-reliance on the private sector is that it limits the reach of such programmes. Evidence from RSBY and Aarogyasri shows that as distance from empanelled hospitals grew in Andhra and Gujarat, fewer people benefited from them — most empanelled hospitals are private and urban. Scheduled Tribe and rural households typically missed out, while richer quintiles of the population benefited. There can be much gained from the NHPS if the government views it as the first step towards universal health care, rather than a panacea to all of India's health-care woes. The second, and a long-awaited, step is to reform the public health system. Without this, an insurance scheme, no matter how ambitious, will be a band-aid.

WAY FORWARD
The budgetary announcement of NHPS is a good step in right direction, but it cannot be a panacea for India's ailing health sector. India needs to focus on health, healthcare, and health coverage of its population. While multipronged reforms are needed to strengthen India's public health sector, a strong regulation is needed to make private health sector more accountable. NHPS, as a health insurance scheme, can only offer financial protection. However, such schemes are necessary but not sufficient for ensuring universal health coverage. Even for expanding health coverage, India needs to moveaway from 'schemes for poor' mode, and explore ways to combine all existing health coverage options into one comprehensive coverage for all its citizens. Ultimately, a scheme for 'poor and vulnerable' will always be poorly thought-out and poorly funded scheme, and therefore, will remain vulnerable to inadequacies.

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PRIORITIES AND CHALLENGES ON INDIA'S ROLE IN SOUTH CHINA SEA

Dr. I. Hiller Armstrong

Assistant Professor, UGC-Centre for South and Southeast Asian Studies, University of Madras, Chennai

INTRODUCTION

The rise of china and India is one of the most important developments in contemporary world politics. The South China Sea (SCS) is regarded as one of the most complicated regional in the Asia Pacific. India's relationship with china is more important and also most complicated too. India is becoming the factor in the strategic calculation of South China Sea as Territorial sovereignty, contentions over energy, the significance of the geographic location, the threat to maritime security and overlapping maritime claims are all sources of the SCS disputes. Being one of the most important seas of the world geopolitically, economically and strategically, the SCS attracts considerable attention in contemporary thinking in international relations and strategic studies. Moreover, it continues to be seen as a potential source of tension, and is becoming increasingly unstable. Security in the SCS is a concern both for the regional countries like China, Vietnam, the Philippines and Malaysia, and for extra-regional countries including India, due to their strategic and economic interest in the region. Any conflict in the SCS will pose a threat to regional and international security. While India is pursuing a strong maritime diplomacy, its expanding involvement in the SCS is becoming a crucial factor in India's external relations. In addition, India is attracting increasing attention among the SCS littoral states through its regular engagement and partnership, and is creating strategic opportunities for these states. India has become more active in expressing its interest in the freedom of navigation in the SCS and the peaceful resolution of territorial disputes between Beijing and its maritime neighbors.

➢ $3.37 Trillion total Trade Passing Through The South China Sea.(2016)

➢ 40 Percent Of Global Liquefied Natural Gas Trade Transited Through The South China Sea.(2017)

➢ 3,200 acres Of New Land China Created In The Spratly Islands for the development of South China Sea.

GEOGRAPHY OF SOUTH CHINA SEA

Geographically, the South China Sea plays an important role in the geopolitics of the Indo-Pacific. The South China Sea is bordered by Brunei, Cambodia, China, Indonesia, Malaysia, the Philippines Singapore, Taiwan, Thailand and Vietnam. In the recent economic growth has contributed to a large portion of the world's commercial merchant shipping passing through these waters. Japan and South Korea rely heavily on the South China Sea for their supply of fuels and raw materials and as an export route, although the availability of diversionary sea lanes bypassing the South China Sea provides non-littoral states with some flexibility in this regard. The South China Sea also contains rich, though unregulated and over-exploited fishing grounds and is reported to hold significant reserves of undiscovered oil and gas, which is an aggravating factor in maritime and territorial disputes. The major island and reef formations in the South China Sea are the Spratly Islands, Paracel Islands, Pratas, the Natuna Islands and Scarborough Shoal.

India's Interests in the South China Sea

The Indian interest in the South China Sea is undergone by the growing arc of Indian strategic interests in tune with its increasing trade and economic engagements. ASEAN and East Asia form the fastest growing component of India's economic interests and an area of acute economic and strategic interest. These linkages are likely to grow with growing trade with these two blocs, which are expected to cross US$ 100 billion. Stretching from Singapore and the Strait of Malacca in the south-west to the Strait of Taiwan in the north-east, the South China Sea is one of the most important trade routes in the world. It is bounded by the coast of Asia from Ca Mau, the southern tip of Vietnam, to Taiwan Strait, the south-west coast of Taiwan and the west coast of the Philippines to Balabac Island, the north coast of Sabah and the coast of Brunei and Sarawak, the northern façade of Indonesia's Kepulauan Natuna and the north coast of peninsular Malaysia. The total area of the SCS is approximately 804,000 square nautical miles. The sea is rich in resources and holds significant economic, strategic and political importance. According to maritime history professor Geoffrey Till, there are four key and interdependent attributes of sea power: the sea as a medium for trade and as a resource, in terms of what lies within its waters; the sea as a medium for informational and cultural exchange as well as a medium for dominion.

The SCS is a region of tremendous importance to the peace, stability and prosperity of the Asia Pacific region. There are overlapping claims of territorial sovereignty among various countries. More importantly, the region's abundant natural resources and strategic location makes it essential to the agenda of several countries, including

India. The SCS is an integrated ecosystem. It is one of the richest seas in the world in terms of marine flora and fauna: coral reefs, mangroves, sea-grass beds, fish and plants. The sea accounts for approximately 10 per cent of the annual global fisheries Strategic Analysis 361 catch, making it extremely important for the fishing industries of nearby countries. The coastal population depend on fishing for their livelihood and the protein they get from fish and other seafood. In fact, the SCS is blessed with prodigious amounts of demersal (bottom-dwelling) and pelagic (surface-dwelling) species. The great variety and plentifull supply of tuna and shrimp have special significance for the littoral states. These two species have spawned entire industries, setting themselves apart from the other living resources harvested from the oceans. However, China has been imposing fishing rules to operate in the disputed waters, resulting in serious maritime security concerns and objections from other claimant states. The region as a whole is also rich in both oil and natural gas, which has led to speculation that the disputed territories could hold potentially significant energy resources. According to US Energy Information Administration (EIA) estimates, the SCS contains 11 billion barrels (bbl) of oil and 190 trillion cubic feet (tcf) of natural gas in proved and probable reserves. The EIA faces difficulty in making accurate estimates of oil and natural gas in the area due to territorial disputes and lack of exploration, meaning that reserve estimates in the area vary greatly. According to the Chinese Ministry of Land and Resources, the SCS oil reserves are estimated to be around 23 to 30 billion tones and 16 trillion cubic metres of natural gas. There may also be additional hydrocarbon reserves in other under-explored areas. Most notably, the SCS occupies a significant geostrategic position in terms of international shipping. The majority of shipments of energy and raw materials pass through it. India and many other countries have an interest in protecting the sea lanes that run through the area, as they consider open and stable maritime commons essential to international trade and prosperity. The SCS is an important junction for navigation between the Pacific and Indian Oceans and an important maritime gateway. It is understandable that India has a vital interest in the SCS. More specifically, statements made by Indian leaders and government officials underscore India's imperative of 'access' and 'stability' in the SCS. India's immense interest and its approach towards the SCS have been clearly articulated on several platforms.

Five Key Reasons for India's renewed interests in the SCS:
- ✓ First, with India's increasing trade with East Asia, India has begun to recognize the importance of its sea lines of communication beyond its geographical proximity, including the Western Pacific region.

- ✓ Second, India wants to be less dependent on major powers for its maritime needs in the Western Pacific region.

- ✓ Third, India is apprehensive of Chinese 'new assertiveness' that Beijing could convert the SCS into a 'Chinese lake' by the forceful affirmation of its territorial claims.

- ✓ Fourth, for domain awareness in all areas of maritime interests, India desires to maintain a presence to track potential developments that could affect its national interest.

- ✓ And fifth, the Indian navy underlines the importance of a forward maritime presence and naval partnership critical to deter potential adversaries.

India's maritime strategic interests in the region are well established, including the fact that almost 55 per cent of India's trade with the Asia Pacific region passes through the South China Sea.

- **Freedom of Navigation**: India has a strong interest in maintaining freedom of navigation in the South China Sea. India clearly underlines 'unimpeded right of passage'. It is essential for peace and prosperity in the Asia Pacific region.

- **Peaceful resolution of disputes**: India favours peaceful resolution of disputes, and opposes the use or the threat of use of force to resolve competing claims. India emphasises that maintaining peace and stability in the region is indispensable.

- **Respect of international laws**: India insists on peaceful resolution of disputes, in accordance with international law, including the United Nations Convention on the Law of the Sea (UNCLOS).

Importance of South China Sea for China

There are plenty evidence to suggest that south china sea holds immense importance for china and in no way does it want to let go of these claims. China has aggressively backed its claims to the South China Sea in recent years, building man-made islands with military facilities. Last year, the construction projects covered 72 acres. The area is globally important for a few reasons.

Firstly, the South China Sea is a prominent shipping passage with $5.3 trillion worth of trade cruising through its waters every year. That's nearly one-third of all global maritime trade.

Second, It is a rich source of hydrocarbons and natural resources. While U.S. estimates have put the amount at 11 billion barrels of oil and 190 trillion cubic feet of natural gas in the South China Sea, One Chinese government-owned oil major actually put the figure closer to 125 billion barrels of oil and 500 trillion cubic feet of natural gas in undiscovered areas.

China claims a wide swath of the waterway based on a boundary first recorded in 1947. The line cited by Beijing reaches as far as 1,200 miles from the south of Mainland China, but it is less than 200 miles away from some coastal areas of Malaysia, the Philippines and Vietnam.

According to international law, every country has the right to claim up to 12 nautical miles from its coast as its territory and can claim an exclusive economic zone extending up to 200 nautical miles for activities like drilling or fishing.

In 2016, an international tribunal ruled against China, saying it has no legal basis for the extensive claims. That decision was legally binding per international law, but there's no enforcement mechanism. Many in the region welcomed the news, but the Chinese government has ignored the ruling, building more artificial islands and bases.

Significant of South China Sea

1. Location: The geographic location of the South China Sea is strategically important. It links the Indian Ocean to the Pacific and is a critical shipping channel - about half the world's merchant ships pass through it. Keeping the South China Sea open for commercial navigation is a top priority for both the United States and China.

But stakeholders have differing views when it comes to military navigation. If China controlled the sea, it would likely limit the military navigation of foreign countries.

According to the latest Pentagon report on China's military, there is also evidence that China is expanding a corps of nuclear submarines based in Hainan, an island on China's southern tip, in the northern portion of the South China Sea.

Should a country like the United States have open military access to the area, for example, China has concerns that any military installations could be vulnerable to potential attack.

2. Energy reserves: Experts believe there are valuable fossil fuels in the South China Sea, but estimates vary depending on which country's analysts you ask.

The region has proven oil reserves of around 1.2 km³ (7.7 billion barrels), with an estimate of 4.5 km³ (28 billion barrels) in total. Natural gas reserves are estimated to total around 7,500 km³ (266 trillion cubic feet). A 2013 report by the U.S. Energy Information Administration raised the total estimated oil reserves to 11 billion barrels. In 2014 China began to drill for oil in waters disputed with Vietnam.

According to studies made by the Department of Environment and Natural Resources, Philippines, this body of water holds one third of the entire world's marine biodiversity, thereby making it a very important area for the ecosystem.

Eleven billion barrels is a relatively small oil reserve at China's current rates of oil consumption, it would only power the country for about three years. But the natural gas deposit is considerable; enough to power China for more than 30 years at current rates, although China's energy demands are constantly growing.

3. Fishing boats caught in the fray: Fishing in the South China Sea is a big business. Some estimates indicate up to 10 percent of the world's ocean-caught fish come from the region. The industry also employs millions across the region. However the fish stocks in the area are depleted and countries are using fishing bans as a means of asserting their sovereignty claims.

But fishing vessels are also a source of conflict. A prime example is the current situation in the Scarborough Shoal, fishing ground less than 130 miles off the Philippine coast. In 2012 the Philippine Navy discovered a Chinese vessel engaged in illegal fishing in the area. Before the Philippines could take any action, two Chinese surveillance ships came to the aid of the vessel and blocked access to the shoal.

The Chinese have fiercely guarded the area and have prohibited access to non-Chinese boats ever since. Similar standoffs have happened with Vietnamese fishing vessels, which have been bumped and rammed by Chinese ships in contested waters.

4. Main Sea Route: More than half of the world's annual merchant fleet tonnage passes through these choke points and a third of all maritime traffic worldwide. The oil transported through the Malacca Strait from the Indian Ocean, en route to East Asia through the South China Sea, is triple the amount that passes through the Suez Canal and fifteen times the amount that transits the Panama Canal.

Roughly two thirds of South Korea's energy supplies, nearly 60 per cent of Japan's and Taiwan's energy supplies, and 80 per cent of China's crude oil imports come through the South China Sea. Whereas in the Persian Gulf only energy is transported, in the South China Sea you have energy, finished goods, and unfinished goods.

Indian foreign policy and objectives towards SCS
Developments in the South China Sea are bringing India into a debate it generally maintains a distance from India's shift in its maritime policies and a relatively vocal stand on the issue may be a signs of a future where India is willing to play a more direct role in the South China Sea.

Source: Wall Street journal - site: wsj.com

However, the reality on the ground couldn't be further from this scenario. Yes, there has been a shift in India's maritime policies and this is likely to continue, but has India really reached a moment where it will play a more prominent role outside of the Indian Ocean? Although this is being debated by strategists in India and abroad, the incentives for India to engage in such an act are close to nil. More importantly, India may also be on the same page as China as far as freedom of military navigation is concerned. Whether India enforces its view as aggressively as China does is again debatable.

Here are some of the reasons why India is unlikely to lend a helping hand in the South China Sea, as exciting as it may sound:

1. Foreign and Maritime Policy: As mentioned above, India's foreign policy would have to go through a drastic strategic change before it could commit to allocating resources in an area beyond its navy's primary area of interest. India has traditionally been continental in its defence strategy and will remain so, given the obvious troubles along its northern borders.

However, there has definitely been a shift where India attempting to cultivate a more maritime outlook and is more willing than it has been in the past to engage and increase its participation in regional matters. Despite this shift, it is important to note that India still considers the Indian Ocean as its primary area of interest and the South China Sea as secondary. Does this mean that India is not affected by developments in the South China Sea and will take no role? No, India is well aware of the implications of the disputes in the South China Sea and is monitoring it as best it can. But, it also means that India considers the issue as outside of its strategic interests and is wise enough to not meddle in the affairs of other countries, which may have repercussions along its land borders. India is not going to stretch its capacity in fighting a cause it knows it won't be able to sustain.

2. Exclusive Economic Zones: At the heart of the US Freedom of Navigation Operations is the issue of the right to military passage through another country's Exclusive Economic Zone. Although the US makes matters worse in this debate by not ratifying UNCLOS, the US Government asserts that it follows and abides by the rules of the treaty.

There is a difference in interpretation in the right to military passage. The US claims that every nation has the right to military passage through another country's EEZ, whereas China claims that the coastal state reserves the right to evict a foreign military ship from its EEZ. The reason that the US does not specify freedom of military navigation is because most nations in Asia are on the same page as China, including India. Many nations, including Vietnam, using various languages, reserve the right to regulate the activities of foreign military ships within EEZs. India, while signing UNCLOS, made the declaration: 'The Government of the Republic of India understands that the provisions of the Convention do not authorize other States to carry out in the exclusive economic zone and on the continental shelf military exercises or manoeuvres, in particular those involving the use of weapons or explosives without the consent of the coastal State'.

While in practice India does not enforce this right as frequently or as aggressively as China, India too has reservations regarding freedom of military navigation through its EEZ. India as a developing nation, with ambitions to be a great power, has left the option open should it ever come to a point where it may need to practice such a right to safeguard its own strategic interests. Joining the US in demonstrating freedom of military navigation could turn controversial at least on paper. Of course in outlining this point, I in no manner disregard India's recognition of the illegal and unilateral actions in the South China Sea with regards to artificial islands. However, the rules of engagement overlap and are blurred to a certain degree and India feels safer in staying away from the issue.

3. No Strategic Gain: The South China Sea does not make sense in terms of geography, not in terms of capacity, although India may have the capability to do so, and it most certainly does not yield any strategic gains for India. India's defence budget is limited and the armed forces will have to priorities its interests while allocating resources. The South China Sea does not feature high on the priority list. Additionally, when India is domestically struggling with a wave of social change and issues that are critical, a decision from New Delhi to send a fleet to patrol the South China Sea will baffle and confuse the Indian public.

There is of course a debate regarding whether India should consider such a move and if India should be paying more attention to the South China Sea. Such debates among Indian strategic thinkers indicate changing times in India's foreign policy and its shift to play a larger role in the region. Should India decide to amuse Washington in such a move in the near future, it would be interesting to see the circumstances surrounding it. Unless it is a situation directly affecting consequences on India's border issues with Pakistan and China, India's approach toward South China Sea will continue to be slow and steady.

4. Trade and Energy: South China Sea plays an important role in world trade. Around 50% of India's trade passes through Malacca Strait a part of South China Sea. The South China Sea region is believed to have vast reserves of oil and natural gas. The presence of China's military threatens trade and energy exploration for other countries. This provides economic opportunities to India as countries like Vietnam have asked India to help them out in oil exploration. China has already warned India when ONGC and Petro Vietnam signed a MoU (Memorandum of Understanding). Moreover, the increasing Chinese presence in the region has created a threat for the neighboring courtiers Therefore, India has to be involved in South China Sea to safeguard it's economic opportunities and trade.

5. Military presence: With the Strategic point of view, India might be interested in developing military and air base in South China Sea to counter China from different directions because of the increasing Chinese presence in Indian Ocean which has become a huge matter of concern for the Indian Government. However, nothing can be said much in this regard as India hasn't said or done anything officially in developing a military presence in South China Sea.

India's Strategic Interests in the South China Sea
India's strategic interests in the South China Sea are a matter of geopolitics and geo-economics, and each can be considered in turn. India's interest in the South China Sea has a clear "strategic dimension." Two concepts used by India bring the South China Sea within its strategic horizons; one is "extended neighborhood," and one is the "Indo-Pacific." With regard to the concept "extended neighborhood," this emerged in official Indian usage in 2000; and brings with it the sense of geographic regions outside South Asia in which India feels it has interests to gain, maintain and defend.8 As such, the South China Sea has been included in this framework. For example,

Yashwant Sinha, India's then External Affairs Minister asserted in 2004; "we have articulated the concept of an extended neighbourhood for India which stretches to the South China Sea." Such government thinking was also reflected in naval strategic formulations in 2007, when *India's Maritime Military Strategy* defined the South China Sea as a blue water area of "strategic interest" for India. The South China Sea is in the middle of the maritime stretch running from the Eastern Indian Ocean to the Western Pacific. Indian politicians and strategists, as well as American and Australian figures, have started using the term "Indo-Pacific" in the past few years for these adjacent waters. As Shyam Saran explained; "over the past year, the term 'Indo-Pacific' has gained currency in strategic discourse in India. From a geopolitical perspective it represents the inclusion of the Western Pacific within the range of India's security interests."[12] It is significant that Indian commentators like C. Raja Mohan pinpoint a "Sino-Indian rivalry in the Indo-Pacific." Manmohan Singh's evocation of the Indo-Pacific was carefully calibrated at the 2012 ASEAN India Summit; "India-ASEAN engagement began with a strong economic emphasis, but it has also become increasingly strategic in its content" in which "a stable, secure and prosperous Indo-Pacific region is crucial for our own progress and prosperity."

Geopolitical Interests: Whereas India perhaps seeks a degree of pre-eminence in the Indian Ocean, it also seeks to deny similar pre-eminence to China in the South China Sea. India's *Look East* policy may have started off emphasizing trade links through the Association of Southeast Asian Nations (ASEAN), but this policy has also developed into a degree of circumspect softer balancing containment of China. Chinese sources argue, accurately enough, that "the strategic intention of India's renewed involvement in the South China Sea issue is obvious. New Delhi wants to further complicate the issue and seeks to pin down China in the area." As Naidu summed up about the South China Sea; "in the strategic arena, India obviously does not want this crucial region to be dominated by China, its long-time rival and competitor."Chinese control of the South China Sea would bring Chinese maritime forces to the Strait of Malacca choke point looking out onto the Indian Ocean, and a point of entry into India's backyard. A further geopolitical interest for India in the South China Sea is that it is the intervening stretch of waters between the Indian Ocean and the Western Pacific. Given that the Indian Navy now operates in the Western Pacific, in cooperation with the United States and Japanese navies, then a secure access through the intervening waters of the South China Sea becomes all the more important an interest for India. A further strategic reason for India strengthening its involvement in the South China Sea is to compensate for not being able to stop China's appearance in the Indian Ocean. As Sharma argued, in a piece that was, surprisingly, carried in the Chinese state media: China is not an Indian Ocean power and yet it is investing a lot of diplomatic and military capital into becoming one. In retaliation, India, which is not a power in the South China Sea, is working overtime to project itself as one. This is the crux of Sino-Indian strategic rivalries the South China Sea and Indian Ocean are strategically interrelated. The presence of a maritime power in one international water body inevitably increases its leverage in the other international water body. While China has been arguing that, despite the name, the Indian Ocean doesn't belong to India alone, India and other countries can equally contend that South China Sea too does not belong to China alone. In other words, India may find that it is unable to block Chinese entry into the Indian Ocean, but can counter-pressure by going into China's own maritime backyard of the South China Sea. This is a simple but potentially effective response. Of course, it remains true that while India has established some naval projection into the South China Sea (and West Pacific), it remains inferior to China in that area. Holmes makes the good point that whereas in the Indian Ocean India operates with the (primary) advantage of inner lines versus China's outer extended line; in the South China Sea the tables are reversed and it is India operating at a (secondary) distance Versus China's inner lines. Nevertheless, though India is at a disadvantage in a straight one-to-one confrontation with China in these waters, it leaves India with an effective role as a secondary balancer in the South China Sea with others from inside and outside the area.

Geo-economic Interests: Whereas, initially, the Look East policy in the 1990s stressed economics links with Southeast Asia through ASEAN, the following decade has seen it broadened. The then External Affairs Minister explained that "the new phase of Look East also marks a shift from trade to wider economic issues including efforts to protect the sea lanes". In such a geo-economics vein, his colleague Georges Fernandes, the then Defense Minister, was arguing that India had "high stakes in the uninterrupted flow of commercial shipping, the Indian Navy has an interest in the ocean space extending from the north of the Arabian Sea to the South China Sea." This remains the mantra for India, as with its public call at the ASEAN Regional Forum India's Role in the South China Sea; "we have been following developments in respect to the South China Sea. As we had stated earlier, India supports freedom of navigation and access to resources in accordance with principles of international law. These principles should be respected by all". Though couched in neutral terms, this was China-centric in direction and point being made. For India, the South China Sea region gains salience in terms of its trade with the Asia-Pacific region. Nearly 55% of India's trade transits through the Strait of Malacca

choke point to and from the South China Sea. The importance of the Strait of Malacca has become a well-established feature within India's security horizons. India's Maritime Military Strategy asserted that India's "primary" area of strategic interest specifically included "the choke points leading to and from the Indian Ocean principally the Strait of Malacca". Interruption of the choke points either westward (Bay of Bengal) or eastward (South China Sea) of the Strait of Malacca is not in India's interest. This gives question of Sea Lanes of Communication (SLOCs) security and open access a general importance for India.

Energy Interests: Within the broader general mix of trade, energy security plays a particularly large role for India in the South China Sea. This is no abstract position, Pradhan argued that "India has a great stake in the South China Sea" precisely through general trade and specific energy concerns. This was why the Foreign Secretary Ranjan Mathai stressed in 2011 that "the South China Sea remains crucial to our foreign trade, energy and national security interests". There is a sense for Raja Mohan that "oil hunt" imperatives mean that "the South China Sea is now an integral part of India's security perimeter.

China's Maritime Silk Route: India's Interest
In recent days, China's proposal for a Maritime Silk Route (MSR) has been a subject of speculation and debate. Beijing's plan for a maritime infrastructure corridor in the broader Indo-Pacific region, first proposed by President Xi Jinping's during his trip to Southeast Asia, has attracted attention because of its potential to establish a Chinese foothold in the Indian Ocean. Needless to say, China's outreach to India inviting it to join the project has generated much analytical curiosity.

The first thing of interest about the MSR is that to enhance connectivity and cultural links in China's strategic backyard the South China Sea. Beijing later expanded the scope of the project to include the Indian Ocean, but in reaching out to Colombo and New Delhi, it found a willing partner only in the former. India has been ambivalent about the MSR and is yet to make up its mind on joining the project.

This is the second time running that India has successfully skirted the controversial MSR project. India, however, is not alone in inquiring about the project's commercial viability many ASEAN countries have been equally probing about is intended benefits. The problem with the MSR, essentially, is the 'opaque' nature of its proposal. Outwardly, the project is about the development of massive maritime infrastructure and connectivity in the Indian Ocean and the Western Pacific. Beijing has been careful to project the MSR as an exclusively commercial venture, trying hard to dispel any impressions of it being a cover for maritime military bases. Surprisingly, however, China has released no details about the project, and this makes many countries doubt Beijing's strategic intentions. The lack of specifics not only makes it hard to decipher the MSR's real purpose, it gives credence to suspicions of geopolitical game play by China. Indeed, for a project being touted as a critical enabler of regional sea-connectivity, Chinese planners would have spent much time and effort developing the fine-print. The lack of firm plans, proposals and timelines then does lead to a suspicion that there may be something about the MSR that Beijing is hesitant to reveal quickly.

Since it has already shown its approval for China's BCIM (Bangladesh-China-India-Myanmar) development plan, chances are New Delhi will be favourably inclined to consider the MSR. It is, however, certain to go over the details carefully before agreeing to the development of Chinese infrastructure in Indian waters. Even though it will be keen to start-off with Beijing on a positive note, the new NDA government in New Delhi would be wary of displaying undue haste in giving the MSR its full approval.

It is felt that India, like some other Indian Ocean states, is so overwhelmed by the scale and scope of the MSR that even in the face of misgivings it will go ahead and sign-up to the project. According to MSR observers, the fear of being left out of its commercial benefits would lead many nations to uncritically accept the project as an economic and strategic enabler. Since the project proposal comes coupled with the "New Silk Road" a land infrastructure project that envisages the development an ancient route connecting Western China with South and Central Asia it will be hard for national policy makers to desist from signing-up.

For India, it is instructive that the sales pitch of shared economic gains does not conceal the MSR's real purpose: ensuring the security of sea lines of communications (SLOCs) in the Indian and Pacific oceans. Since African resources are China's focus right now, the project could well be a surrogate for a giant Chinese SLOC running all the way from the East African coast, to the Southern coast of China – created, maintained and controlled by Beijing. In its ultimate form, therefore, the MSR could end up setting up Chinese logistical hubs in the Indian Ocean, linking up already existing string of pearls.

India's appreciation of the MSR must be based on an objective appraisal of these new realities. Even assuming the project delivers on its economic promise, it could well turn out to be detrimental to India's geopolitical interests in the IOR. As Beijing becomes more involved in building infrastructure in the Indian Ocean, it will play a larger part in the security and governance of the IOR, which could pose a challenge to India's stature as a 'security provider' in the region and also adversely affecting New Delhi's strategic purchase in its primary area of interest.

CONCLUSIONS

India's emerging role in the South China Sea will help to facilitate greater cooperation and even dispute resolution, whether it will spark greater competition and conflicts, and whether it will improve or challenge India-China relations. With regard to that India's involvement is facilitating greater security cooperation with the Southeast Asian littoral states, especially Singapore, Indonesia, the Philippines, and Vietnam. India's security links with local claimants will not particularly help or hinder dispute resolution of the South China Sea, given that neither India's Role in the South China Sea China nor India sees any role for India in negotiations over disputed islands and waters. India's involvement in the South China Sea may contribute to unofficial conflict management through helping to maintain an unofficial balance of power against Chinese unilateral control of these waters and through being a factor dissuading China from overt military action against Vietnam in particular. As to whether India's growing involvement in the South China Sea will improve or damage India-China relations, it will tend to the former. The leaderships may talk of the two countries having enough strategic space, and it may operate like that for them globally. However, the South China Sea is a neighborhood for both countries; they are increasingly coming up against each other in the region. In part, this simultaneous encounter in the South China Sea is because of their mutual status as rising in Asia, and in part because of their similar energy security imperatives. Consequently, in maritime settings, they are coming up against each other in a competitive way not only in the Indian Ocean, but also in the South China Sea. On the other hand, the South China Sea is emerging as a new and increasing factor for both India and China's relationship.

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PROBLEMS OF EDUCATION AMONG TEA GARDEN LABOURER: A SOCIOLOGICAL STUDY IN DEOHAL TEA ESTATE AND HOLLONGHABI TEA ESTATE OF TINISUKIA DISTRICT, ASSAM

S. Chetia[1] and Prof. S. V. Borbora[2]

Assistant Professor[1], Department of Education, Tengakhat College, Tengakhat, Dibrugarh

Professor[2], Department of Sociology, Dibrugarh University, Dibrugarh

ABSTRACT

Education is the main instrument for desirable social change. It is the most powerful medium in molding the character and determining the future of a citizen and a nation. It is the key towards man power and human development as well as the national development. When we talk about the tea garden labour there are a large number of people from TGL area who remain excluded from the sphere of education for a variety of reasons. So, in this paper an attempt has been made to analyze the problems of education among tea garden labourer in Deohal Tea Estate and Hollonghabi Tea Estate of Tinisukia District, Assam. Based on obtain data, researcher in this paper tries to find out the major problems in education with regard to their sociological background. Finally suggestions and some remedies are given for the enrichment of their educational status.

Keywords: Education, Tea Garden labourer, Educational Status, problems of education, Suggestions and Remedial measures.

INTRODUCTION

Development of Tea Industry was one of the most important developments that took place in Assam during the British rule. It has a glorious history of 196 years. In 1823, England Merchant Robert Bruch studied the existence of tea plants in the Upper Brahmaputra Valley from a Shingpho chief named Bessa Gam at Rongpur, the Ahom capital in upper Assam. In the following year these were handed over to his brother, Mr. Charles Alexender Bruce who had left England in 1809 as a midshipman on a ship belonging to the East India Company. C.A. Bruce collected Tea Plants from the interior area of Assam and sent them to David Scott, an agent of the Governor General in Assam, who subsequently sent them to Dr. N. Wallich, the superintendent of the Calcutta Botanical Garden, where test confirmed them to be a tea plants but of a different species than the Chinese variety. Soon after, the British pioneered in starting tea cultivation at Sadiya with the seeds from china. After its failure at Sadiya due to unfit soil condition the first experimental Tea Estate was established at Chabua in Dibrugarh district of Assam in 1836.

Education means knowledge and knowledge means knowing something. In this sense, the tea garden labourers recruited to the tea plantation of Assam were educated as an average rural Indians. It is well known that the rural Indians since the historical period were deprived from the royal supported 'Sanskrit based sophisticated education' which was reserved only for the people of upper strata or the royal family. So the rural Indian society developed their own way of understanding the things of importance. The knowledge passes from mouth to mouth which later become oral tradition and source of education for them. The main feature of Indian culture actually transmitted orally from generation to generation and the tea garden labourers are one of the carriers who possess some of the features from among them. The tea garden labourers belonging to the rural Indian family possess the oral tradition inherited from their forefathers.

The TGL communities constitute a substantial part of the total population of Assam. At present the total population of Tea community is estimated about 55 lakh, according to 2011 census. Though various plans and policies have been made by Govt. and various Tea community organization but still they are remained economically and educationally backward classes of the society. The problem of illiteracy is one of the major obstacles for the development of Tea community people. It is mentioned that literacy rate of TGL community is approximately 25 %, where as the literacy rate of the whole state is 76.22 %.

In Tinsukia district there are 145 tea gardens. There are a large number of people from TGL community who remain excluded from the sphere of education for a variety of reasons. Government policies have not been able to effectively target this section of people, due to which there has been large scale deprivation. They do not get their due status as they are not regarded as 'Schedule Caste' and 'Schedule Tribe' in Assam. They are simply "Others Backward Classes", while in others states they are given Schedule Caste and Schedule Tribe status and get legislative and parliamentary benefits. Their skills are limited to a particular area only where they are getting low wages and working in a horrible working condition. So, there is a need to study their educational status and causes of their backwardness. Thus this study makes an attempt to examine the problems faced by TGL community people in acquiring proper education.

REVIEW OF RELATED LITERATURE

Chakravorty, P & Devi, M (2014) conducted a study on tea garden workers problems in offering primary education in Melamora, Golaghat District of Assam. The main objective of the study was to investigate the problems faced by tea garden parents in providing primary education to their children and assess the opinion of parents towards educating their girl child. The study was descriptive type and random sampling method was followed by selecting a sample of 40 tea garden houses.

Though more than 49 of the houses expressed their desire for educating their children but the remaining percentage found to be opposite. It is found for the teachers that majority of the teachers of the primary school are partially satisfied with the teaching job. According to the school teachers, the students have to be forced to study. The school students belong to only tea garden community and their interest towards study is not as expected. marriage of female child. Receipt of education to the female child is not welcome by 85% of the respondents.

Debnath, R. and Nath, D. (2014) conducted a study on educational vulnerability and risk factors of tea garden workers with special reference to Dewan tea garden village, Cachar, Assam, India. The findings of the study clearly showed that the overall literacy rate among the workers of the Dewan Tea Garden Village is very low in comparison to national average due to various reasons. Moreover, in comparison to male, literacy rate of female population was disappointing. The study further revealed direct correlation of poor educational status of garden workers with their socio-economic and socio cultural conditions; livelihood opportunities and living standards; nutrition and health condition; level of awareness about their rights and responsibilities; and other risk factors.

Kurmi, P. (2014) conducted a study on problem of educational attainment of children, a case study of the tea garden labourer's households in Derby Tea Estate. From the estimation it was concluded that: Mother's education has significant role in attaining the children's education in tea-garden areas as expected and exerts positive influence on children's education. However unlike the "mother's education", family size is negatively related on attainment of children's education. The level of household income is found to have a positive impact on the attainment of children's education. But in tea-garden areas this particular dependent variable are found to be very low.

Baruah, P. and Daimari, M. (2017) studied on education of tea tribe children: a case study of Udalguri District of Assam. Findings of the study indicated that Pursuing education beyond primary level became more difficult due to poor transport and communication system in the areas. Added to this, majority of families are economically poor due to which they cannot afford to send children to high schools or colleges. They also admitted that they are not getting any financial help from the tea garden owner in educating their children beyond the primary level.

SIGNIFICANCE OF THE STUDY

The present study will be an attempt to examine the education among the Tea garden labourer. The TGL communities constitute a substantial part of the total population of Assam. At present the total population of Tea community is estimated about 55 lakh, according to 2011 census. Though various plans and policies have been made by Govt. and various Tea community organizations but still they are remained economically and educationally backward classes of the society. The problem of illiteracy is one of the major obstacles for the development of Tea community people. It is mentioned that literacy rate of TGL community is approximately 25 %, where as the literacy rate of the whole state is 76.22 %.

In Dibrugarh District alone there are 280 Tea gardens and in Tinsukia district there are 145 tea gardens. There are a large number of people from TGL community who remain excluded from the sphere of education for a variety of reasons. Government policies have not been able to effectively target this section of people, due to which there has been large scale deprivation. They do not get their due status as they are not regarded as 'Schedule Caste' and 'Schedule Tribe' in Assam. They are simply "Others Backward Classes", while in others states they are given Schedule Caste and Schedule Tribe status and get legislative and parliamentary benefits. Their skills are limited to a particular area only where they are getting low wages and working in a horrible working condition. So, there is a need to study their educational status and causes of their backwardness. Thus this study makes an attempt to examine the problems faced by TGL community people in acquiring proper education.

OBJECTIVES

1. To know the problems in education among tea garden labourer in Deohal Tea Estate and Hollonghabi Tea Estate of Tinisukia District, Assam.

2. To suggest possible solutions for solve the problem faced by the tea garden labourer in Hollonghabi Tea Estate and Hollonghabi Tea Estate of Tinisukia District, Assam.

FIELD AND METHODOLOGY

The research design of the present study is descriptive in nature. The study has been attempted to analyze the educational status among the tea garden labourer namely Deohall Tea Estate and Hollonghabi Tea Estate of Tinisukia District, Assam.

For the present study the researcher has purposively selected one Company owned tea garden i.e Deohall Tea Estate and one Native tea garden i.e Hollonghabi Tea Estate from Tinisukia District. The selected garden Deohall Tea Estate is registered under Assam Branch Indian Tea Association (ABITA). On the other hand, Hollonghabi Tea Estate is registered by Assam Tea Planters Association (ATPA).

The total households in the both tea garden estate are 1076 of these 765nos in Deohall Tea Estate and 311nos. in Hollonghabi Tea Estate. 10 percent of the total households i.e. 77nos. from Deohall T.E. and 31nos. from Hollonghabi T.E. are randomly selected as sample by using stratified random sampling method. The respondent is the head of the sample household.

The present study is concerned mainly with primary and secondary data. The primary data have been collected by using Structured Interview Schedules and prepared Questionnaires, besides Observation method has adopted for collection of data. For secondary sources the researcher has been several articles, journals, books, official records, documents related to the study.
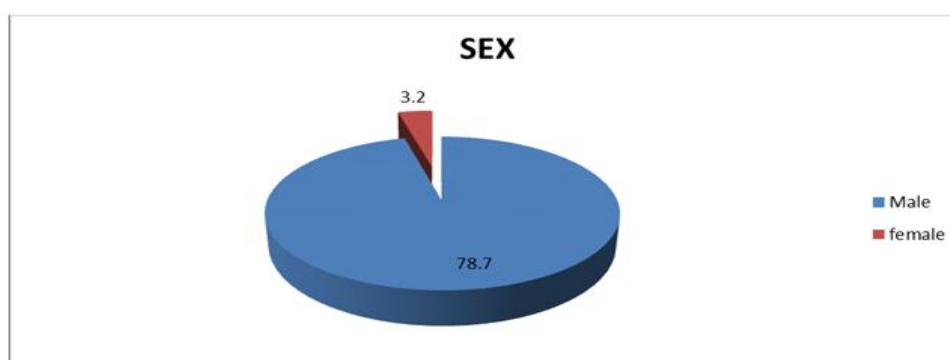
FINDINGS AND DISCUSSION

1. SEX

Table-1.1: Sex wise distributions of the respondents

Sex	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Male	55	71.43	30	96.77	85	78.70
Female	22	28.57	1	3.03	23	21.30
Total	77	100%	31	100%	108	100%

It is seen from the above table that respondents sex ratio significantly differs in the Deohall and the Hollonghabi Tea estate. However out of 77 numbers of total respondents in Deohall Tea estates 71.43% are male where as 28.57% are female. In Hollonghabi Tea Estates, Out of 31 total respondents 96.77% are male where as 3.03 % are female. The overall numbers of total sample respondents are 108 where 78.70% are male and 21.30% are female.

2. CASTE

Table-1.2: Caste wise distributions of the students

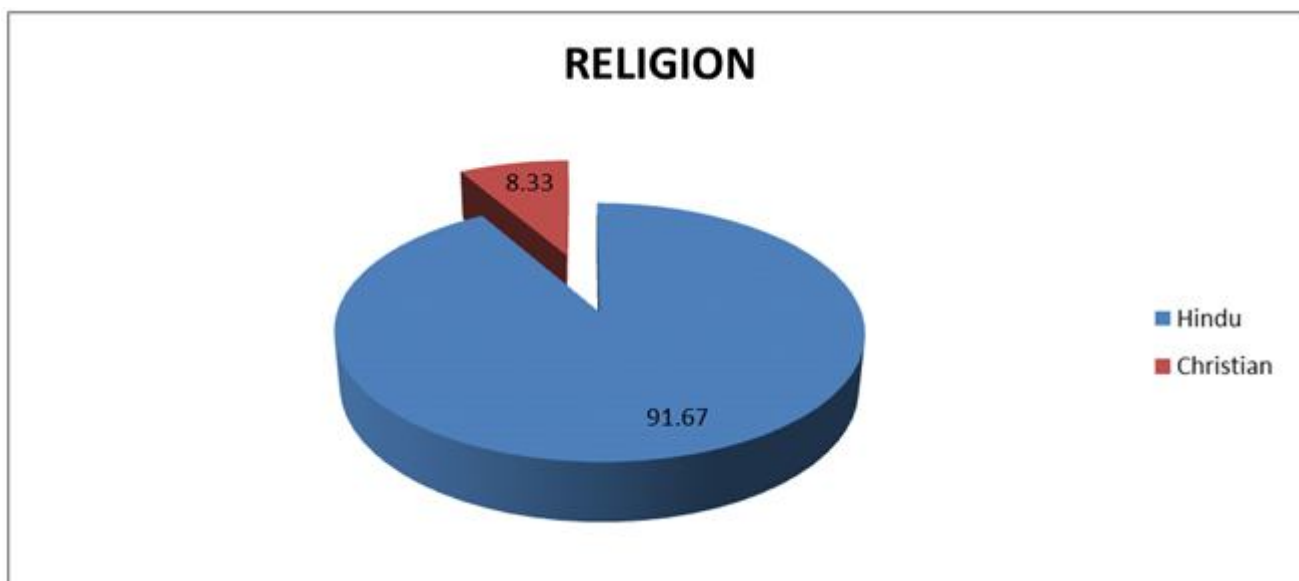| Caste	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
OBC	77	100%	31	100%	108	100%
MOBC	NIL		NIL		NIL	
SC	NIL		NIL		NIL	
ST	NIL		NIL		NIL	
Total	77	100%	31	100%	108	100%

As seen in the above table it can be estimated that in both the Tea garden estates are found all respondents belong to OBC Caste. All are fall under Other Backward Classes.

3. RELIGION

Table-1.3 Religion wise distributions of the respondents

Religion	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Hindu	77	100%	22	70.97	99	91.67
Christian	NIL		9	29.03	9	8.33
Others	NIL		NIL		NIL	
Total	77	100%	31	100%	108	100%

Table clearly shows that most of the respondents belong to the Hinduism. In Deohall Tea estates, all the respondents belong to Hindu religion where In Hollonghabi Tea Estates 70.97% of total respondents are Hindu and 29.03% are Christian.
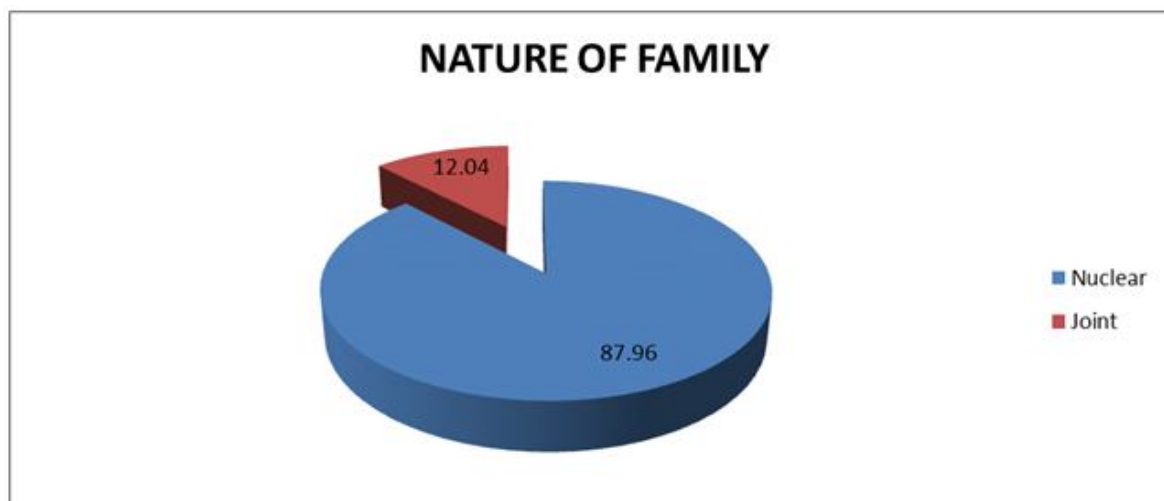

4. NATURE OF FAMILY

Table-1.4 Nature of family wise distributions of the respondents

Nature	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Joint	10	12.99	3	9.68	13	12.04
Nuclear	67	87.01	28	90.32	95	87.96
Total	77	100%	31	100%	108	100%

It is evident that most of the respondents in fact 87.96% of them belong to Nuclear family while 12.04% respondents belong to joint families. In Deohall Tea estates 87.01% of total respondents belong to Nuclear family where 12.99% are from joint. In Hollonghabi Tea Garden, 90.32% of total respondents belong to Nuclear family where 9.68% belongs to joint family.
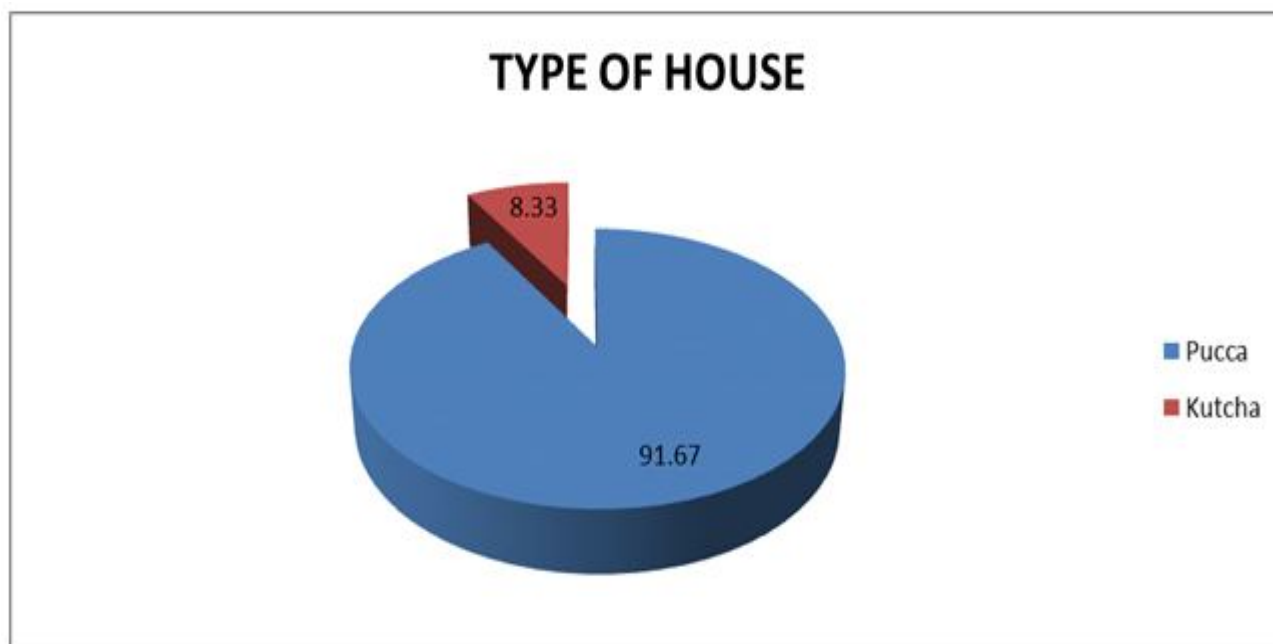
5. TYPE OF HOUSE

Table-1.5 Type of house wise distribution of the respondents

Type	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Pucca	68	88.31	31	100	99	91.67
Kutcha	9	11.69	00	00	9	8.33
Total	77	100%	31	100%	108	100%

It is seen from the above table that majority of total respondents house are Pucca. In Deohall, 88.31% respondents has Pucca house where 11.69% has Kutcha. In Hollonghabi Tea Estates all respondents' have Pucca house.
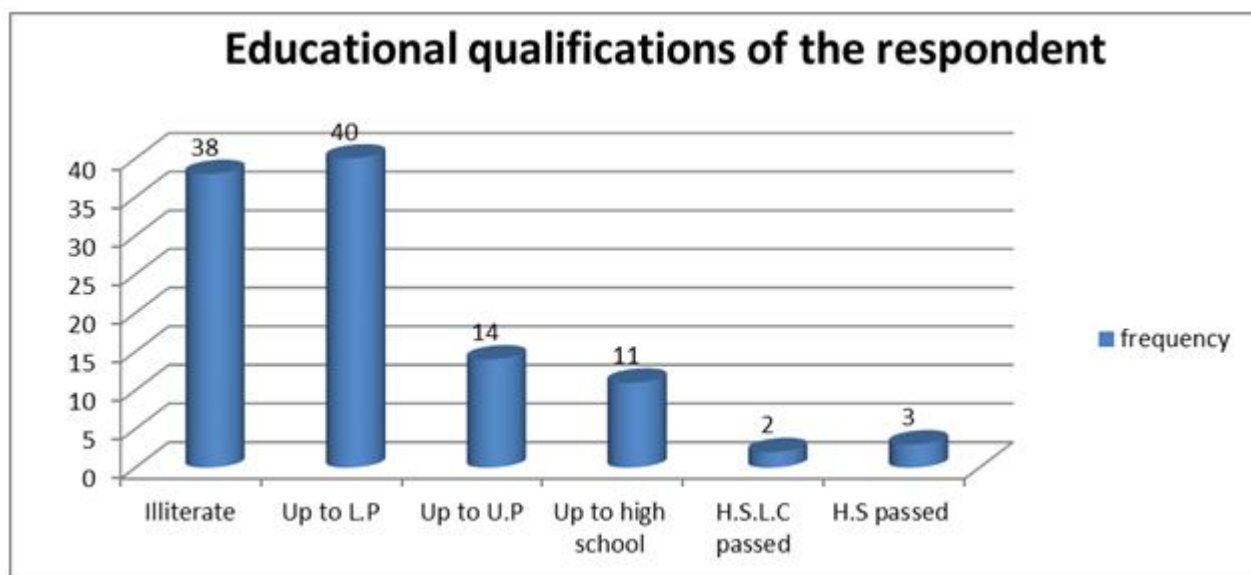

6. Educational qualifications of the respondents

Table-1.6 Educational qualifications of the respondents

Educational qualification	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Illiterate	30	38.96	8	25.81	38	35.18
Up to L.P	26	33.76	14	45.16	40	37.04
Up to U.P	11	14.29	3	9.68	14	12.96
Up to high school	7	9.09	4	12.90	11	10.18
H.S.L.C passed	2	2.60	0	00	2	1.85
H.S passed	1	1.30	2	6.45	3	2.78
Graduate	0	00	0	00	NIL	00
Total	77	100%	31	100%	108	100%

In Deohall tea estate, it can be inferred that out of 77 total respondents 30 (38.96) respondents are illiterate, 26 (33.76) respondents are studied upto L.P, 11(14.29) respondents are studied upto U.P, 7 (9.09) respondents are studied upto high school, 2(2.60) respondents are H.S.L.C passed and only one higher secondary passed respondent is there.

In Hollonghabi tea estate, it can be inferred that out of 31total respondents 8 (25.81) respondents are illiterate, 14 (45.16) respondents are studied upto L.P, 3 (9.68) respondents are studied upto U.P, 4 (12.90) respondents are studied upto high school and only two higher secondary passed respondent is there.

So, it is seen that majority of the respondent are illiterate. There are no any graduate respondents in both the state.
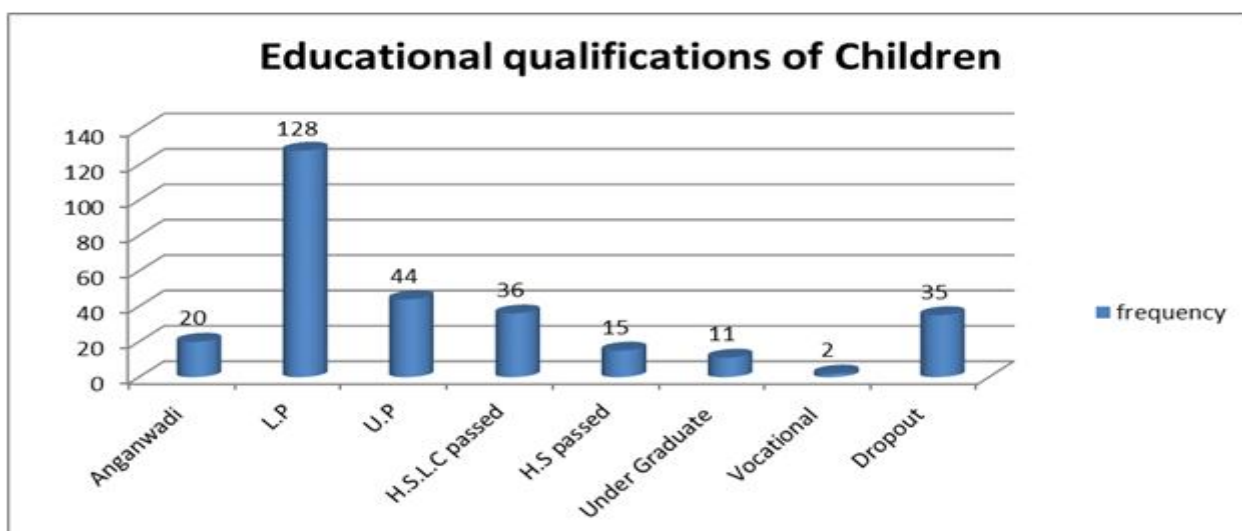
Educational qualifications of the respondent

7. EDUCATIONAL QUALIFICATIONS OF CHILDREN

Table-1.8 Educational qualifications of children's of respondents

Educational qualification	Deohall		Hollonghabi		Total	
	fq	%	fq	%	Fq	%
Anganwadi	12	5.74	8	9.76	20	6.87
L.P	93	44.50	35	42.68	128	43.99
U.P	34	16.27	10	12.19	44	15.12
H.S.L.C passed	23	11	13	15.85	36	12.37
H.S passed	10	4.78	05	6.10	15	5.15
Under Graduate	08	3.83	03	3.66	11	3.78
Post Graduate	NIL		NIL			00
Vocational	Nil		02	2.44	2	0.68
Dropout	29	13.88	06	7.32	35	12.03
Total	209	100%	82	100%	291	100%

The table reveals that out of 108 respondents of both the garden, 20 (6.87%) children of total respondents are studying in Anganwadi Centres. 128 (43.99%) children of total respondents are studying in L.P school and 44 (15.12) children of total respondents are studying in U.P school. 36 (15.15) children of total respondents are H.S.L.C passed and 15 (5.15%) children of total respondents are H.S passed. There are also 11 (3.78%) respondents children are undergraduate. 2 students are also there who have enrolled in vocational courses. So overall educational status of tea garden labourer showing quit good.

But it is also seen that both the garden education faces the problem of dropout child. There are total 35 (12.03%) dropout children found which come as a major problem in their education.

Educational qualifications of Children

8. PROBLEMS FACED BY THE CHILDREN

Table-1.9 Problems faced by the children's of the respondents in pursuing education

Problem faced	Deohall		Hollonghabi		Both	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Economic problem	68	88.31%	26	83.87%	94	87.04%
Lack of school	NIL	NIL	NIL	NIL	NIL	NIL
Language problem	NIL	NIL	NIL	NIL	NIL	NIL
Illiterate parents	NIL	NIL	NIL	NIL	NIL	NIL
Lack of awareness	3	3.90%	2	6.45%	5	4.63%
Others	6	7.79%	3	9.68%	7	6.48%
TOTAL	77	100%	31	100%	108	100%

It is seen from the above table that Problems faced by the children's of the respondents in pursuing education not significantly differs in the Deohall and the Hollonghabi Tea estate. Majority of the respondents faced economic problem in pursuing education. 87.04% respondents of total sample faced same type of problem in pursuing education i.e. economic problem. Also some of the respondents faced other problem like lack of awareness of related to education, electricity problem, lack of higher institution etc.
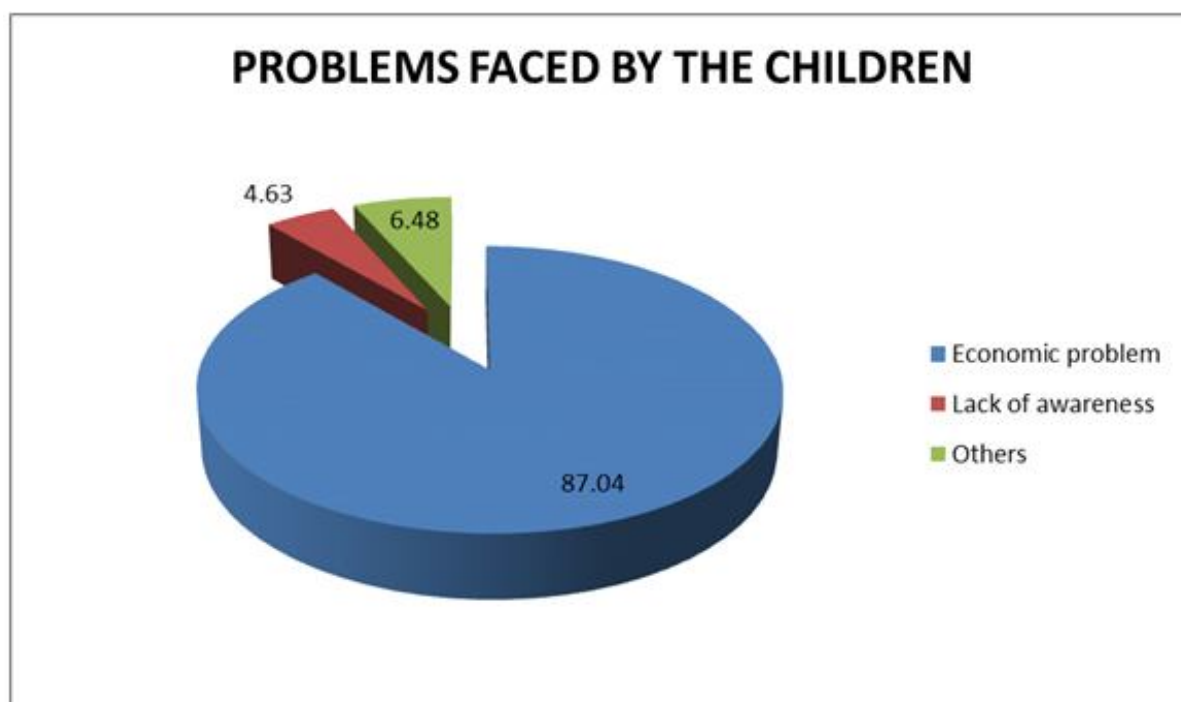
MAJOR FINDINGS

1. Majority of the respondents are male i.e. 85 (78.70%)

2. All the respondents belong to OBC (Other Backward Classes) caste.

3. 99 (91.67%) respondents belong to Hindu religion.

4. 95 (87.96%) of respondents have come from nuclear family.

5. Majority of respondent's i.e. (99) 91.67% have Pucca house.

6. Majority of respondent's i.e. 38 (35.18) respondents are illiterate.

7. 128 (43.99%) children of total respondents are studying in primary school which is higher than other level of education.

8. There are also 35 (12.03%) dropout children which show their educational backwardness.

9. Majority of respondents i.e. 87.04% respondents faced economic problem in pursuing education.

SUGGESTIONS

To solve the problem in pursuing their education, we can give the following suggestions:

1. **Economic backwardness**: The economic condition of the tea garden labourers has to be improved. To do this, the wage structure of the labourers must be raised. The income of the family should be sufficient for a better economic holding. The school going children of the tea garden labourers should be awarded some economic benefits like scholarships, book grants etc.

2. **Illiteracy:** The education of the parents is as important as the education of the children in plantations. Massive adult education programmes should be taken up tea garden area so as to enable the parents to appreciate the value of children's education. For that purpose night schools should be established in the gardens by the planters in co-operation with the concerned department. These schools should be provided with all the requirements and the labourers should be compelled to attend such schools.

3. **School facilities**: The physical facilities of the school must be improved. The garden authorities should be made responsible for providing all such facilities. A, minimum of physical facilities like school building, school compound, school furniture, teaching aids, books, pictorials and other study materials for the children, drinking water, mid-day meal, urinal etc., should be provided to every garden school. The schools buildings should be properly maintained and should be spacious so that it can accommodate students of all classes without any inconvenience.

4. **Fair wages:** tea garden labourers are paid the lowest wages in comparison to any other labourers in the organised sector. During the peak season, tea gardens employ temporary workers at wages much lower than the actual minimum wage. So, Fair wages must be given to compensate loss of family income.

5. **Alcoholism:** Children, adolescents and women of tea garden labourers should be educated on the evils of alcoholism. House to house propaganda and through documentary shows massive anti-alcoholism orive should be taken up. Introduction of total prohibition may not practically be possible immediately. Therefore, propaganda should be made for weekend drinks rather than daily.

CONCLUSION

At last, it can be said that the educational status of the tea garden labours of Deohall Tea Estate and Hollonghabi Tea Estate is very low and it is mainly for the economical backwardness among them. As we all know that the need of education is very important for the economic development of the society, so emphasis should be given by government and other concerned authorities for the solving problem of education and enrichment of educational status among tea garden labourer.

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RURAL NON-FARM SECTOR AND A COMPARATIVE ANALYSIS OF THE QUALITY OF EMPLOYMENT – A PILOT STUDY ON SELECTED DISTRICTS OF WEST BENGAL

Samprit Chakrabarti[1] and Dr. Pallavi Kumari[2]

Research Scholar[1], ICFAI University Jharkhand & Associate Dean (Academics), ICFAI Business School, Kolkata
Assistant Professor[2] & Faculty of Management Studies, ICFAI University, Jharkhand

ABSTRACT

Analysis of rural labour market and hence livelihood pattern in the context of developing or less developed countries has been crucial to understand the development of these countries. Majority of people of these countries are still rural and agriculture is the dominant source of employment. However, with the increasing number of workers in the rural areas, agriculture alone will not solve the problem of unemployment in the rural areas. For most rural people in developing economies, rural non-farm activities are part of a diversified livelihood portfolio. The current trend in Indian Economy reveals that the excessive dependence on agriculture as a source of livelihood shows a steady decline and rural economy has witnessed a modest degree of diversification. The rural non-farm sector, therefore, have become an important source of employment. The present study is a pilot study of the proposed research work to understand the nature of rural non – farm employment scenario in some of the selected districts of West Bengal.

Keywords: Employment Diversification, Quality of Employment, Rural Non-farm Sector

1. INTRODUCTION

Importance of non-farm sector as a source of employment is well recognized in the process of development. For most rural people in developing economies, rural non-farm activities are part of a diversified livelihood portfolio. However, there are large variations in the share of non -farm income in poor countries. In regional terms, average non -farm income shares in rural areas are higher in Africa (42%) and Latin America (40%) than Asia (32 %) (Reardon, 1997). There is also some evidence to suggest that income diversification may have increased in recent years. For example, Bryceson (1996 and 1997) has found that rural Sub-Saharan Africa is becoming steadily less agrarian and increasingly more reliant on non -farm sources of income. Also in rapidly growing East Asian countries like South Korea, the rate of growth of income generated in the rural non -farm sector has been substantial. In surplus labour countries of South Asia such as India and China, this sector is absorbing a growing amount of human labour.

In the context of India, diversification in rural employment has gained significant importance over time which has been studied by several researchers over the past two decades (Basant and Kumar, 1989; Visaria, 1995; Chadha and Sahu, 2002; Bhaumik, S.K, 2002b, 2007a; Mukhopadhyay and Rajaraman, 2007). Importantly, the non -farm sector's share in employment (principal and subsidiary status) increased during the period 1993-94 to 2009-10. However, if we compute the growth rate of non -farm employment (NFE) for different periods and make a comparison, we can note that the annual growth of non -farm employment has decreased during 1993-94 to 1999-00, the early years of economic liberalization. However, the situation changes during 1999-00 to 2004-05, when the growth rate of non -farm employment show an upturn. The situation again reversed during 2004-05 to 2009-10.

The analysis of the quantitative significance of non-farm sector in the process of development is important. However, the presence of significant percentage of poor in the rural areas raises question about the nature and conditions of work in which worker is participating and the earning from their present job.

2. RESEARCH METHODOLOGY

Since the study is causal in nature, it identified the dependent variable and 13 independent variables that describe the quality of non – farm employment sector. The details of the variables are listed in the table 2.1.

Table-2.1: Initial Research Variables

Dependent Variable
Quality of Employment
Independent Variable
1) Household Facilities
2) Ownership of Household Assets
3) Size of Land Holding
4) Average per day Earnings

5) Average number of days of working in a year
6) Average working hours per day
7) Non – wage benefits
8) Job Location
9) Other source of income
10) Participation in skill enhancement programmes
11) Sponsored skill enhancement programmes of the organization
12) Nature of job
13) Availing loan facilities

Source: Exploratory Research

2.1. Selection of Variables

The 13 variables are identified through review of literature and exploratory research with the target respondents. But it is not sufficient to take all the variables directly in the final questionnaire as the variables may not be suitable in the study location. For this reason it is decided to go for reliability of the variables using Cronbach Alpha measurement technique.

A small pilot survey was conducted among the target respondents initially with the help of draft questionnaire where all the variables are incorporated. These variables are developed in a statement form so that the responses can be captured in a 5 point Likert Scale. This was done to capture the perception of the respondents towards the variables. Later the variables are transformed into categorical variables to develop the employment quality index.

2.2. Selection of Study Area

Selection of study area is a crucial thing in research as it helps to identify the target respondents. There must be criteria on the basis of which the study area may be selected. In this study two districts are identified on where rural non – farm workforce participation gives two different pictures. The table below may throw some light on this.

Table-2.2: District Level Percentage of Non – Farm Workers (Main & Marginal) in Rural West Bengal

State/District	1991		2001		% point change in RNFP between 1991-2001	2011		% point change in RNFP between 2001-2011
Bankura	21.26	(12)	30.28	(12)	9.02	29.94	(12)	-0.34
Burdwan	27.55	(9)	37.62	(9)	10.07	35.35	(9)	-2.27
Birbhum	22.80	(11)	35.47	(11)	12.67	29.56	(13)	-5.91
Cooch Behar	20.08	(13)	27.77	(14)	7.69	26.72	(14)	-1.05
Darjeeling	50.50	(2)	65.04	(2)	14.54	68.16	(1)	3.12
Hooghly	34.30	(5)	44.94	(8)	10.64	41.14	(5)	-3.8
Howrah	50.68	(1)	70.48	(1)	19.8	67.68	(2)	-2.8
Jalpaiguri	47.20	(3)	55.96	(3)	8.76	51.94	(3)	-4.02
Malda	27.90	(8)	45.62	(7)	17.72	41.08	(6)	-4.54
Midnapur	26.51	(10)	35.72	(10)	9.21	32.80	(11)	-2.92
Murshidabad	34.66	(4)	46.39	(5)	11.73	41.08	(6)	-5.31
Nadia	30.61	(7)	46.23	(6)	15.62	36.17	(8)	-10.06
24-Pgns. (N+S)	33.69	(6)	50.71	(4)	17.02	48.37	(4)	-2.34
Purulia	17.06	(14)	28.31	(13)	11.25	33.36	(10)	5.05
West Dina. (N+S)	14.47	(15)	24.44	(15)	9.97	26.10	(15)	1.66
West Bengal	29.33		41.60		12.27	38.56		-3.04
India	18.43		26.16		7.73	27.72		1.56

Source: Census of India,1991, 2001, 2011

In table 2.2 above district wise non – farm workforce participation is shown among all the districts of West Bengal. Since the objective is to judge the quality of non – farm employment it has been decided to identify two districts where the non – farm employment gives bipolar result. The data reveals a maximum negative growth of -10.06 in Nadia district of West Bengal between two Census years. On the other hand district of Purulia shows

maximum positive growth of 5.05 between two Census years. A negative growth indicates less number of non – farm employment generation and a positive figure indicates opposite of it. On the basis of this available secondary data it has been decided to identify these two districts as the study district during pilot survey period. In total 43 respondents were selected from these two districts (19 respondents were selected from Nadia district and 24 respondents were selected from Purulia district to run the pilot study).

2.3. Research Instrument

A pilot study with close ended questionnaire is prepared to get the initial information from the target respondents. This has been done after finalization of study area. The draft questionnaire is administrated among the target respondents of those districts to test the reliability of it.

2.4. Reliability of the Research Instrument

Table-2.3: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.774	13

The alpha value shows 0.774 which is good enough to judge that the variables are fit for the final study. Normally a value higher than 0.70 is accepted in social science research.

2.5 Analysis of Data

This section describes the outcome of the pilot study conducted to understand whether any short comings exist in the questionnaire. Though the study is pilot in nature but it helps to identify some interesting characteristics of the target respondents. The study first analyzed the demographic characteristics of the target respondents surveyed in both the study districts and also try to ascertain some important socio economic variables. These variables help to develop a complete picture of the two districts in relation to non – farm employment and quality of employment. The details of the study are discussed subsequently.

Table-2.5. Gender and District Wise Distribution of Respondents

| District	Gender	Frequency	%
Nadia	Male	10	23.3
	Female	9	20.9
Purulia	Male	16	37.2
	Female	8	18.6
Total		**43**	**100.0**

Source: Pilot Survey Data
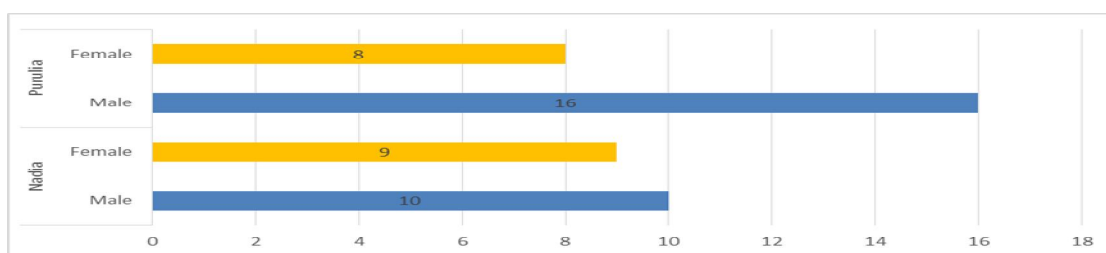
Observation: The table 2.5 shows gender wise distribution of respondents. The study reveals that most of the respondents in both the districts are male. Participation of male members are more in Purulia district (37%) as compared to Nadia district where the participation of male members is around 23%.

Table-2.6: Age wise Distribution of Respondents

| District	Age	Frequency	%
Nadia	< 18 Years	4	9.3
	18 Years - 35 Years	10	23.3
	36 Years - 55 Years	4	9.3
	> 56 Years	1	2.3
Purulia	< 18 Years	6	14.0
	18 Years - 35 Years	11	25.6
	36 Years - 55 Years	3	7.0
	> 56 Years	4	9.3

Source: Pilot Survey Data
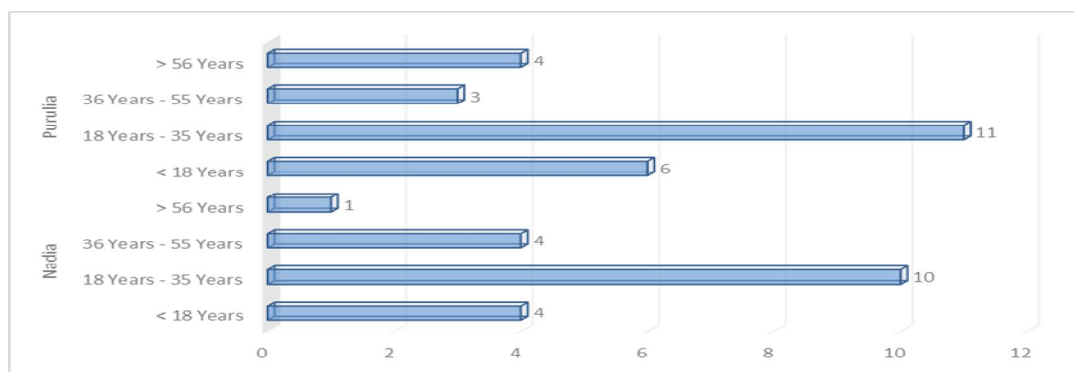
Observation: Table 2.6 shows age wise distribution of respondents. The result shows that in both the districts most of the respondents are in the age group 18 years to 35 years. This age group also represents legally eligible working population. So, it can be said that most of the

Table-2.9: Monthly Income wise Distribution of Respondents			
District	**Monthly Income**	**Frequency**	**%**
Nadia	< Rs.3000	3	7.0
	Rs.3001 - Rs.5000	13	30.2
	Rs.5001 - Rs.7000	2	4.7
	> Rs. 7000	1	2.3
Purulia	< Rs.3000	4	9.3
	Rs.3001 - Rs.5000	14	32.6
	Rs.5001 - Rs.7000	4	9.3
	> Rs. 7000	2	4.7

Source: Pilot Survey Data
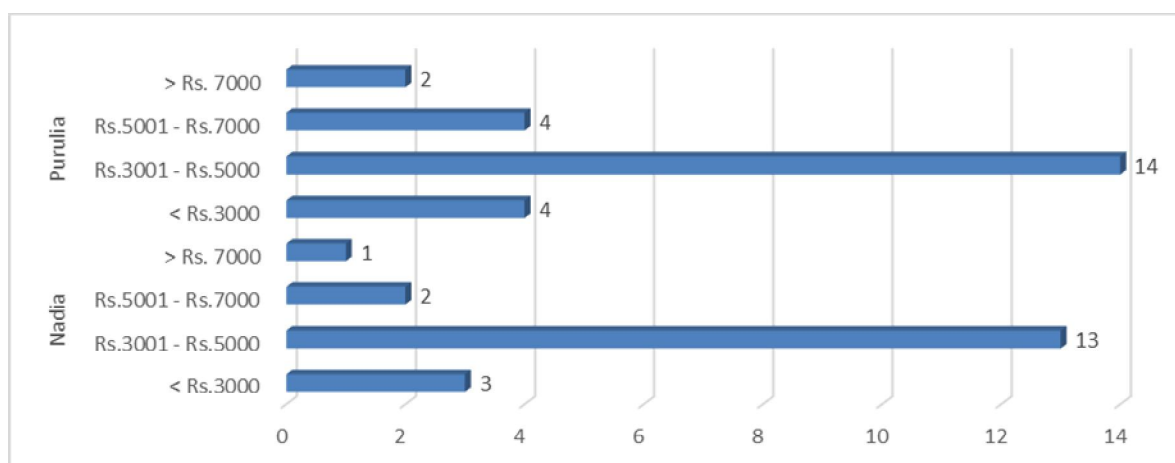
Observation: Table 2.9 shows level of income wise distribution of respondents. The graph shows that most of the respondents are in the monthly income bracket of Rs.3001 to Rs.5000. This is obviously a low level of income. This level of earnings becomes worse where number of family members is more. As a result of which most of them are forced to go for alternative source of earnings.

| Table-2.10: Occupation Pattern wise Distribution of Respondents			
District	**Occupation Pattern**	**Frequency**	**%**
Nadia	Agriculture Worker in Own Land	3	7.0
	Agricultural Worker in Other's Land	11	25.6
	Self Employed	3	7.0
	Engage in Non - Farm Activities	2	4.7
Purulia	Agriculture Worker in Own Land	3	7.0
	Agricultural Worker in Other's Land	10	23.3
	Self Employed	3	7.0
	Engage in Non - Farm Activities	8	18.6

Source: Pilot Survey Data
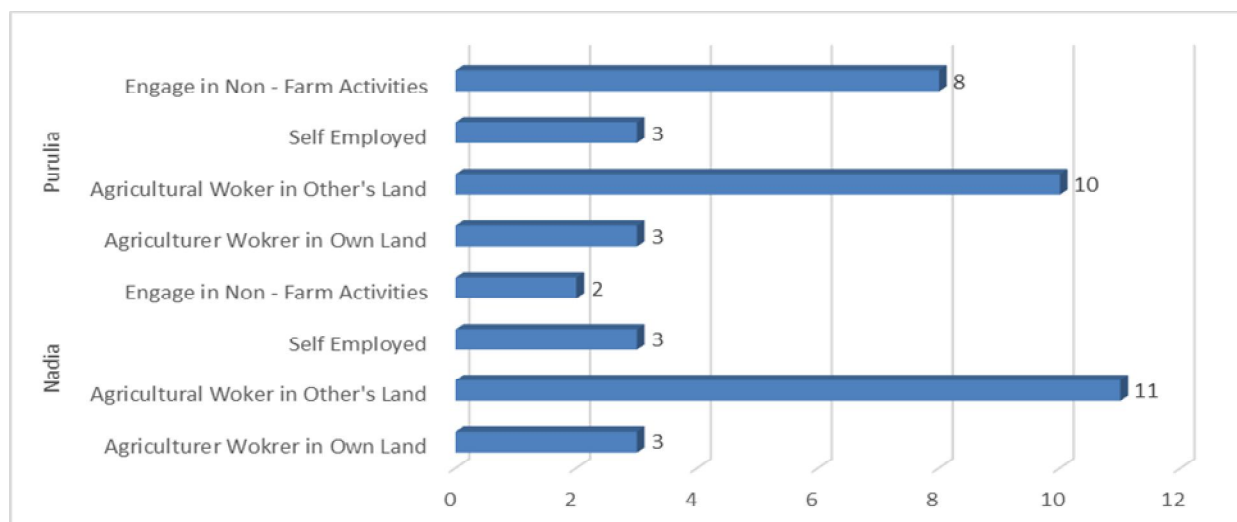
Observation: Table 2.10 shows occupation pattern wise distribution of respondents. The graph shows that a significant number of respondents are working as agriculture workers in other's land. This is an indication of low land holding among the target respondents. The data also reveals that participation in non – farm activities are relatively more in Purulia district than Nadia district. This is also matching with the Census observation.

District	Reasons	Frequency	%
	Table-2.12: Reasons for Opting Employment in Non - Farm Sector		
Nadia	Heredity	0	0.0
	Land Insufficiency	0	0.0
	Poverty	0	0.0
	High Earnings	2	100.0
	Irrigation Problems	0	0.0
	Better Transport Facilities	0	0.0
	Role of Government/SHG	0	0.0
	Urban Linkage	0	0.0
Purulia	Heredity	0	0.0
	Land Insufficiency	0	0.0
	Poverty	0	0.0
	High Earnings	8	100.0
	Irrigation Problems	0	0.0
	Better Transport Facilities	0	0.0
	Role of Government/SHG	0	0.0
	Urban Linkage	0	0.0

Source: Pilot Survey Data
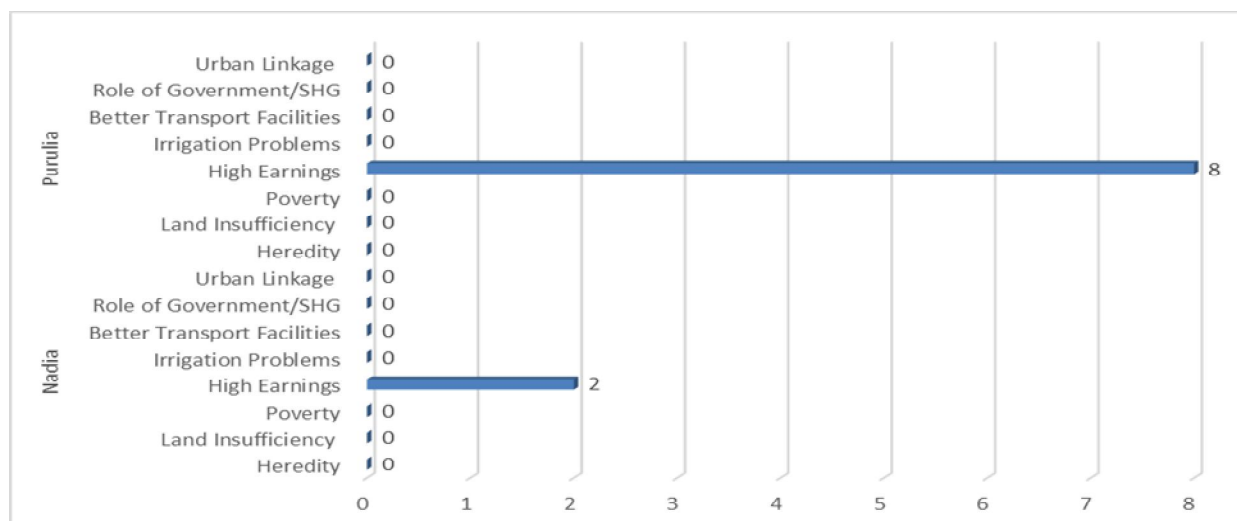
Observation: The table 2.12 shows reasons for opting for non – farm jobs. It can be seen that in both the districts, high earnings is the only reason that attracts people towards non – farm sectors. It also suggests that present income may not be sufficient to maintain the livelihood at the village level.

District	Types of Loan	Frequency	%
	Table-2.13: Type of Loans Availed by the Respondents		
Nadia	Loan from familiar persons for everyday needs	1	2.3
	Loan from familiar persons for production	3	7.0
	Loan from an agency for production	2	4.7
	Loan from an agency for some personal reasons	11	25.6
	No Loans	2	4.7
Purulia	Loan from familiar persons for everyday needs	3	7.0
	Loan from familiar persons for production	12	27.9
	Loan from an agency for production	3	7.0
	Loan from an agency for some personal reasons	2	4.7
	No Loans	4	9.3

Source: Pilot Survey Data
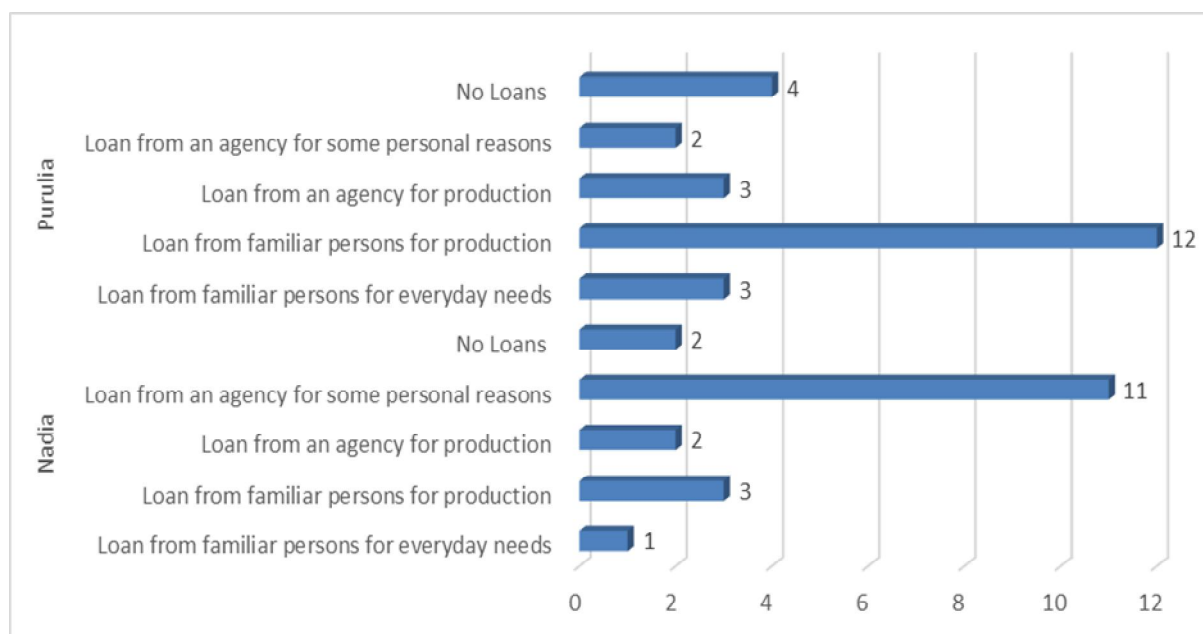
Observation: Table 2.13 shows types of loans availed by the respondents in both the districts. The figure shows that in case of Purulia, most of the respondents availed loan for production purposes but this may not be the case in case Nadia district. Availing loan for personal consumption is a dangerous thing and it is most likely put them under poverty trap.

District	Sources of Loan	Frequency	%
	Table-2.14: Sources of Loan		
Nadia	Family Members	1	2.3
	Neighbours	1	2.3
	Money Lenders	8	18.6
	SHG	6	14.0
	Private Financial Institutions	2	4.7
	Government Financial Institutions	1	2.3
Purulia	Family Members	1	2.3
	Neighbours	2	4.7
	Money Lenders	5	11.6
	SHG	12	27.9
	Private Financial Institutions	3	7.0
	Government Financial Institutions	1	2.3

Source: Pilot Survey Data
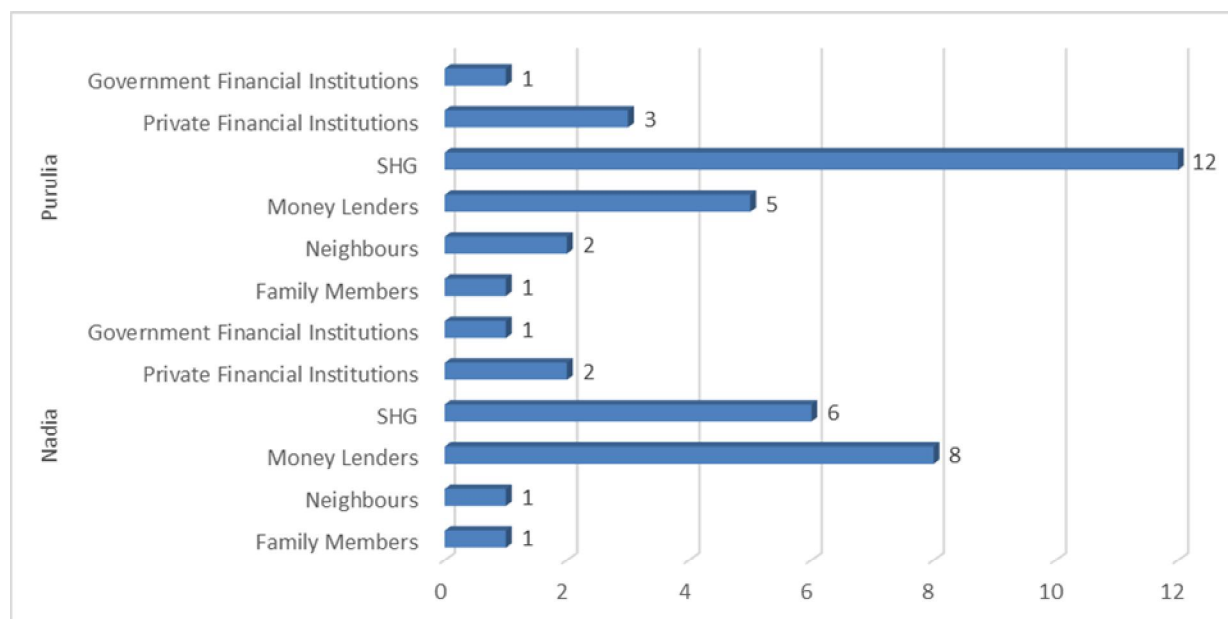
Observation: Table 2.14 shows sources of loans taken by the respondents in both the districts. It can be seen that in case of Purulia most of the respondents availed loan from SHG group as they are members of those groups. But this may not be the case in case of Nadia district. In this district since the purpose of availing loan is personal they are not able to get it from authorized sources. So, most of them are depending on money lenders. A higher repayment often makes them bankrupt. This is a bad practice observed in Nadia district.

3. CONCLUSION

Rural sector is the next big market where 70% of the Indian population is living. Their contribution in GDP is huge. Such is the market that India still depends more on rural economy. Unfortunately, the opportunity is not utilized properly by any of the stakeholders of the economy. As a result of which the sector remains unproductive. It is obvious that if the sector grows then it will help to move the economy in a different direction. Two major problems that the sector is facing is migration and disguised unemployment. People are migrating from one place to other for better income opportunities. Too much dependency on agricultural sector alone will lead to uncertain income. So, there is a need to see whether any alternative source of earnings can be generated. But this source of earnings should be quality one. Not like any other informal sector jobs. Another important thing that should be taken into consideration is quality of employment and to do so, only job creation will not be sufficient. Along with it there is a need to upgrade the skills of both existing workforce as well as new workforce.

In the study district, the creation of non – farm job is on the lower side where as district Purulia shows a positive growth. This different movement of two districts may have different implications. It may not be sufficient to draw conclusion based on pilot survey data. The final study with the help of 13 independent variables may help to draw new action plan to understand the non- farm employment pattern as well as quality of employment in non – farm sector.

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SPECTRAL AND ANALYTICAL STUDIES OF *p*-DIMETHYLAMINOBENZALDEHYDE DERIVATIVES OF α-BENZILMONOXIENTHIOCARBOHYDRAZIDE COMPOUND

Priya Belavale[1], Raj Badekar[2], Santosh Kulkarni[3] and Rama Lokhande[4]
[1,2,4]School of Basic Science, Jaipur National University, Jaipur
[3]Department of Chemistry, K. M. Agrawal College, Kalyan

ABSTRACT
The title compound was obtained by condensation reaction between α-benzilmonoximethiocarbohydrazide and p-dimethylaminobenzaldehyde in the presence of glacial acetic acid. Synthesized derivatives have been characterized by elemental analysis, FT(IR), NMR, UV-Visible spectral data. Melting point of the synthesized derivatives is very high, due to strong bonding between all atoms. The synthesized compound is insoluble in water, but soluble in most of the common organic solvents such as, ethanol, methanol, chloroform, acetonitrile, nitrobenzene, etc.

Keywords: α-Benzilmonoximethiocarbohydrazide, p-dimethyelaminobenzaldehyde, FT(IR), NMR, UV-Visible

INTRODUCTION
Schiff base compounds are synthesized easily and almost form complexes with all transition metal ions. Many Schiff base derived compounds reports on their application in anti-bacterial[1-2], antioxident[3], antimalarial[4], antiviral[5], anticancer[6-7], antifungal[8-9] and antiinflammatory[10] activities. The Schiff base derived benzilmonoxime and its derivative are reported many researches earlier[11-12]. In this paper, we wish to report synthesis and characterization of the *α*-Benzilmonozimethiocarbohydrazide-*p*-dimethylaminobenzaldehyde compounds. IUPAC name of the title ligand is N''-[4-(Dimethylamino)Phenyl]Methylidene-"N'''-[(2-Hydroxyimino)-1-Phenylpropylidene]Thiocarbonohydrazide", for sake of convenience able as HBMTDAB . The HBMTDAB have been synthesized and studies by elemental analysis and various spectroscopic techniques.

EXPERIMENTAL
All Chemical were used by analytical grade. ^{1}H-NMR Spectra in d_6 DMSO were recorded on Brucker AV300 NMR Spectrometer instrument using TMS as internal standard. The UV-Visible spectra in methanol were recorded with a JASCO V-650 Spectrometer. The FT(IR) Spectra were recorded in the range 400-4000 cm^{-1} by KBr pellets using a Perkin-Elmer spectrum 100' mode FT(IR) Spectrometer and molecular weight of the synthesized derivative determinate by Rast method[13].

PREPARATION OF THE TITLE COMPOUND
α-Benzilmonoximethiocarbohydrazide prepared by reported method[14]. The α-Benzilmonoximethio carbohydrazide-*p*-dimethylaminobezaldehyde derivative is prepared by condensation reaction, in the presence of glacial acetic acid. This mixture was refluxed continuously for 3h and then flask was allows to stand overnight. Isolate the reaction mixture in ice-cold water. The precipitated of the synthesized compound was collected and purified by recrystallization by 60% alcohol.
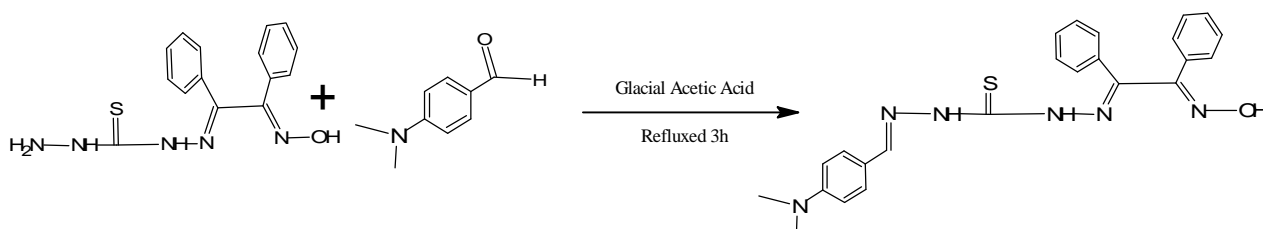
RESULTS AND DISCUSSIONS
The prepared compound yellow crystalline solid, it was melts at 204^{0}C. Molecular weight of the prepared compound is 444.55g/mole and this is confirmed by Rast method. The prepared derivative is soluble in common organic solvents such as, Alcohol CHCl$_3$, CCl$_4$, DMF, DMSO, Acetonitrile. The synthesized compound purity checked by GC instrument by standard procedure[15], purity of the prepared compound is 93.30%. The structure investigation of the prepared derivative elucidated on the basis of elemental analysis, FT(IR), NMR, UV Spectral data.

UV - Visible Spectrum
The electronic spectra of the derivatives in methanol solution in the UV region shows high intensity bands at 366.5 nm (ε=20397 dm^{3}mol^{-1}cm^{-1}), 298nm (ε=12866 dm^{3}mol^{-1}cm^{-1}), 225nm (ε=11401 dm^{3}mol^{-1}cm^{-1}). These

bands occur at similar position and intensity are reported $\pi \to \pi^*$ transition in present compound[13-14]. These bands are assigned by $\pi \to \pi^*$ type of transition.

The ultra-violet spectrum of HBMTDAB in dilute NaOH solution shows that the band at 366.5 nm (ε=20397 $dm^3mol^{-1}cm^{-1}$) in the methanolic solution spectrum has suffered a suppression along with a bathochromic shift to 374nm (6237 $dm^3mol^{-1}cm^{-1}$). It means that this band could have its origin in the oximino linkage in the molecule.

Table-1: UV – Visible spectra of the HBMTDAB compound

Solvent	Wavelength in 'nm'	Absorbance	(ε $dm^3mol^{-1}cm^{-1}$)		Assignment
Methanol	366.5	1.95	20397	$\pi \to \pi^*$	Oximino
	298	1.23	12866	$\pi \to \pi^*$	Azomethine
	225	1.09	11401	$\pi \to \pi^*$	Azomehtine
0.1N NaOH	374	1.21	6237	$\pi \to \pi^*$	Oximino
	327	1.23	6340	$\pi \to \pi^*$	Azomethine
	233	1.98	10206	$\pi \to \pi^*$	Azomethine

FTIR Spectra

FT(IR) Spectrum of the α-benzilmonoximethiocarbohydrazide-*p*-dimethylaminobezaldehyde (HBMTAB, absence of band between 3300-3350 cm^{-3} due to – NH_2 vibration, reported at $3300cm^{-1}$ in the α-benzilmonoximethiocarbohydrazide[14] indicating a successful replacement amino group by azomethine group during Schiff base formation. The broad band observed at 3316 cm^{-1} suggests that, presence oximino (-OH) environment in the synthesized compound.

The title compound observed the band at the same frequency in the comparison (1571 and 1537 cm^{-1}) bands with Azomethine and oximino. All major observed bands and their assignments are listed in **Table-2.**

Table-2: FTIR Spectra of the benzilmonoximethiocarbohydrazide-*p*-dimethyl-aminobezaldehyde

| Assignment	-OH	Ar-C-C	-CH	δ(C-S-H)	-NH-	>< =N-N	>< =N-O	N-O	Phenyl Ring
Cm^{-1}	3316	3181	2926	2357	1599	1571	1537	1006	722

¹H NMR Spectrum

¹H NMR Spectra of the synthesized compound was recorded in d_6 DMSO solution reveals a singlet at □12.56, suggesting the highly acidic nature of this proton and singlet observed at δ11.03 ppm ascribed to proton of the (-NH) amine. Another singlet observed at round δ9.58 assigned to either NH-SH Moiety. A singlet at δ4.8, ascribed to methane group in prepared Compound. The two multiplets observed at δ7.3- 7.7 and 7.8-8.0 assigned as mono-substituted and di-substituted benzene respectively in the synthesized compound.

Table-3: ¹H NMR data of α-benzilmonoximethiocarbohydrazide-*p*-dimethylaminobenzaldehyde.

Assignment	-OH	-NH	-SH/-NH	Mono-sub benzene ring	Di-sub Benzene Ring	Methine	Methyl
δ	12.56	11.03	9.58	7.3-7.7	7.8-8.0	4.8	2.5

CONCLUSION

The title derivative compound have high M.P and soluble in alcohol $CHCl_3$, CCl_4, DMF, DMSO, Acreonitrile, The molecular weight as the title derivatives is found to be 444.55g/mole by using Rast method. On the basis of the structural studies, prepared derivative structure tentatively assigned as;
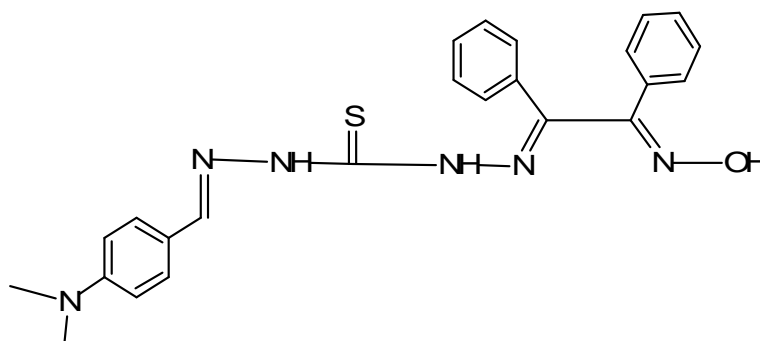
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STRUCTURAL AND ANALYTICAL STUDIES ON *o*-HYDROXY BENZALDEHYDES DERIVATIVES OF *N''*-[-2-(HYDROXYIMINO)-1,2-DIPHENYLETHYLIDENE] THIOCARBONOHYDRAZIDE

Deepak Patekar[1], Raj Badekar[2] and Rama Lokhande[3]
[1,3]School of Basic Sciences, Jaipur National University, Jaipur
[2]Riva Industries (p) Ltd, Ambernath MIDC, Thane

ABSTRACT
The proposed compound is formed by reaction between o-Hydroxybenzaldehyde and Benzilmonoximethiocarbohydrazide in the presence of hydrochloric acid and ethanol solvent. The IUPAC name of the title compound is N''-[(1E,2E)-2-(hydroxyimino)-1,2-diphenylethylidene]-N'''-[(E)-(2-hydroxyphenyl)methylidene] thiocarbonohydrazide and its abbreviated as HBMTSA. The synthesized compounds have been characterized on the basis of various physico - chemical techniques and analyzed by some spectral techniques such as PMR, UV, FT(IR) etc.

1. INTRODUCTION
Schiff bases are formed when any primary amine reacts with an aldehyde or a ketone. Structurally, a Schiff base and they are also known as azomethine or imine) is a nitrogen analogue of an aldehyde or ketone in which the carbonyl group (CO) has been replaced by an amino group. Schiff base compounds are synthesized easily and almost form complexes with all transition metal ions. Many Schiff base derived compounds reports on their applications in anti-bacterial[1-2], anti-oxidant[3], anti-malarial[4], anti-viral[5], anti-cancer[6-7], anti-fungal[8-9], anti-inflammatory[10] activities and also used as catalyst in several reactions such as polymerization reaction, reduction of thionyl chloride, oxidation of organic compounds, reduction reaction of ketones, aldol reaction, Henry reaction, epoxidation of alkenes, hydrosilylation of ketones, synthesis of bis(indolyl) methanes and Dielse Alder reaction. In many biochemical reactions Schiff bases plays an important role.

The Schiff bases derived benzilmonoxime and its derivatives are reported many researchers[11-12]. Benzilmonoximehydrazone[13-16] and benzilmonoximethiocarbohydrazide and its various metal complexes are reported earlier. In view of these we wish to the present study deals with the preparation of new Schiff bases derived from *o*-hydroxybenzaldehyde and benzilmonoximethiocarbohydrazide. IUPAC name and abbreviated of the prepared compound is *N''*-[(1*E*,2*E*)-2-(hydroxyimino)-1,2-diphenylethylidene]-*N'''*-[(*E*)-(2-hydroxyphenyl)methylidene] thiocarbonohydrazide (HBMTSA). The solid compounds have been synthesized and studied by elemental analyses and various spectroscopic techniques.

2. EXPERIMENTAL
Materials and instruments
All chemicals were used by AR grade and were used without further purification. Melting points were determined in an Electrothermal 9200. ^{1}H-NMR spectra in CDCl3 were recorded on Brucker AV300 NMR spectrometers using TMS as internal standard. The FT-IR spectra were recorded in the range 400–4000 cm^{-1} by KBr pellet using a 'Perkin- Elmer spectrum 100' model FT-IR spectrophotometer. The UV–Vis spectra in methanol were recorded with a JASCO V-650 Spectrophotometer.

Preparation of o-hydroxybenzaldehyde derivatives of benzilmonoximethiocarbohydrazide

Benzilmonoximethiocarbohydrazide were prepared by reported method[18]. A mixture of 0.100mol of o-hydroxybenzaldehydes in 50mL ethanol was added to alcoholic solution of 0.125mol of benzilmonoximethiocarbohydrazide und agitation and added dropwise 2ml of conc. HCl. The final mixture was refluxed continuously for 4h and then allowed to cool. The yellow compound was collected and purified by crystallization method using 70% methanol (yield: 80%).
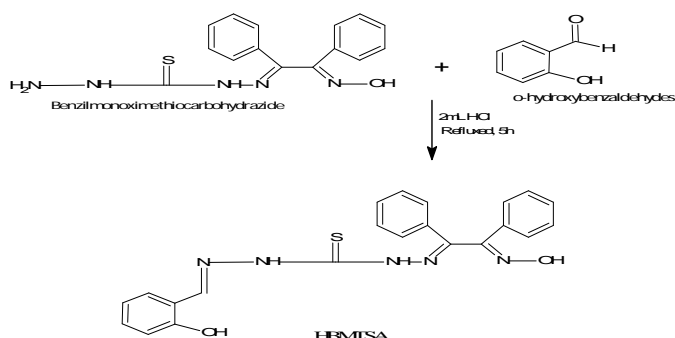
3. RESULTS AND DISCUSSIONS

Characterization of the prepared compounds are done by using analytical data obtained from UV-VISIBLE, FT(IR), ^{1}H NMR spectroscopy and elemental analysis etc. The molecular weight of proposed compound is 417gmol^{-1} determined by Rast method[19]; melts at 190^{0}C. Appeared in Yellow crystalline solid, soluble in common organic solvents such as, methanol, chloroform, acetone, DMF, DMSO, dioxane, dilute alkali etc. partially soluble in ethanol. Structure of the synthesized compound elucidated on various spectroscopic techniques such as FTIR, PMR, UV-VISIBLE spectroscopy and elemental analysis etc.

Table-1: Analytical and physical data for HBMTSA compound

Compounds	Color	% Yield	MP in ^{0}C	% of the expected (observed)				
				C	H	N	O	S
HBMTSA	Yellow	80.00	190	63.29 (62.92)	4.59 (4.51)	16.78 (16.29)	7.66 (7.53)	7.68 (7.29)

UV-Visible Spectral study

The UV- spectrum of the prepared compound in the ultra-violet region show high intensity band at around 339nm ($\varepsilon = 13166$dm^{3}mol^{-1}cm^{-1}) suggested $\pi \to \pi_*$ (allowed) transition of the oximino group of the proposed compound and another two bands observed at 249nm ($\varepsilon = 20899$dm^{3}mol^{-1}cm^{-1}) and 221nm ($\varepsilon = 12218$dm^{3}mol^{-1}cm^{-1}), these are due to the $\pi \to \pi_*$ (allowed) transitions of azomethine environment in the title molecule. In many isonitrosoketones[20-21], a bands occurs at similar positions and intensity, are reported as the ($\pi \to \pi_*$) transitions in the present compounds[17-18].

Table-2: UV-Visible spectra of the *o*-hydroxybenzaldehyde derivatives α-Benzilmonoximethiocarbohydrazide

Compounds	λ (nm)	ε (dm^{3}mol^{-1}cm^{-1})
HBMTSA	339	13166
	249	20899
	221	12218

^{1}H NMR

^{1}H NMR spectra of the HBMTSA was recorded in CDCl$_3$ solvent and important bands summarized in **Table-2**. Two (singlets) at δ11.24ppm and at δ10.37ppm were observed. The oximino group is expected to release the proton much more easily than the phenolic proton of the salicyaldehyde moiety of the HBMTSA, since the deshielding effect is more on the proton of the oximino group than that on the phenolic group, therefore the singlet at δ11.24ppm may be ascribed to oximino proton of the HBMTSA. A singlet observed at region δ8.2 and δ8.6 ppm (s, 1H) assigned to either the NH -SH moiety, such an assignment is favored by the thione- thiol tautomerism[17] possible in the proposed compound. A singlet at δ3.15ppm assigned to the methyl group of the HBMTSA. The multiplets in the region δ 6.9-7.3ppm were ascribed to the aromatic ring protons in synthesized HBMTSA compound.

Table-2: ^{1}H NMR data of *o*-Hydroxybenzaldehyde derivatives α-Benzilmonoximethiocarbohydrazide in ppm

Compounds	-OH	Phenolic -OH	>C=N-NH-	-SH	-CH=	Phenyl rings
HBMTSA	11.24	10.37	8.60	8.20	3.15	6.9-7.3

FTIR Spectra

FTIR spectrum of HBMTSA in the range of 4000-400cm^{-1} was recorded in KBr disk on Perkin- Elmer instrument. The spectrum is quit complex due the presence of a large number of bands with varying intensities. It is therefore impossible to assign all the bands. An attempt however has been made to assign some of the important bands on the basis of the reported FTIR spectrum of several isonitrosoketones and diacetylmonoxime. The prominent infrared spectral data with the tentative assignments of the HBMTSA is presented in **Table-3**. The spectrum shows a broad band at 3286cm^{-1} due the presence of two –OH groups (oximino and phenolic) in the HBMTSA. Assignment of this band was based on comparisons with other Isonitrosoketones and their hydrozonyl derivatives[1-5]. For the phenolic –OH group in the salicylaldehyde, a very weak band at 3200cm^{-1} is observed due to the intramolecular hydrogen bonding. Since in the HBMTSA also, the phenolic –OH group is strongly hydrogen bonded with nitrogen of the same molecule (intramolecular hydrogen bonding), the band for phenolic –OH group may be merged in the broad band of oximino –OH group. The band observed at 3115 cm^{-1} in the FTIR spectrum of the HBMTSA is ascribed to the aromatic C-H stretching vibrations. The band at 1644 cm^{-1}and 1616cm^{-1}may be chiefly due to the perturbed >C=N- stretching vibrations of the azomethine (>C=N-N=) group in HBMTSA and 1600cm^{-1} is due to the aromatic >C=C< vibrations. The band observed at 973 cm^{-1} may be assigned to =N-N= stretching vibrations. Rest of the bands observed in title compounds are almost at the same frequencies in comparisons with bands of benzilmonoximethiocarbohydrazide (**Table-3**).

Table-3: FT(IR) spectra of the -*Hydroxy*benzaldehyde derivatives α-Benzilmonoximethiocarbohydrazide in cm⁻¹

Compounds	-OH	ν(C-S-H)	ν(C=NO)	ν(C=NN)	ν(N-H)	ν(N-O)	ν(N-N)
HBMTSA	3236	2363	1644	1616	1571	1018	1095

4. CONCLUSION

The title compounds are soluble in most of the common organic solvents and they have high melting point, indicating strongly bonded all functional groups and other molecules. The synthesized compounds are monobasic in nature concluded on the basis of the compounds-KOH titration curve method. On the basis of the spectroscopic methods tentatively assigned the structures of the proposed compounds as follow;
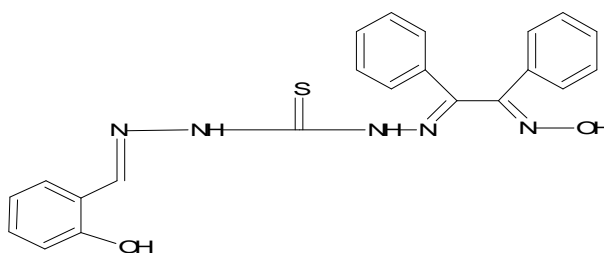
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MANUSCRIPT SUBMISSION

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1. Manuscripts should be submitted preferably through email and the research article / paper should preferably not exceed 8 – 10 pages in all.

2. Book review must contain the name of the author and the book reviewed, the place of publication and publisher, date of publication, number of pages and price.

3. Manuscripts should be typed in 12 font-size, Times New Roman, single spaced with 1" margin on a standard A4 size paper. Manuscripts should be organized in the following order: title, name(s) of author(s) and his/her (their) complete affiliation(s) including zip code(s), Abstract (not exceeding 350 words), Introduction, Main body of paper, Conclusion and References.

4. The title of the paper should be in capital letters, bold, size 16" and centered at the top of the first page. The author(s) and affiliations(s) should be centered, bold, size 14" and single-spaced, beginning from the second line below the title.

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1Author Designation, Department, Organization, City, email id

2Author Designation, Department, Organization, City, email id

3Author Designation, Department, Organization, City, email id

5. The abstract should summarize the context, content and conclusions of the paper in less than 350 words in 12 points italic Times New Roman. The abstract should have about five key words in alphabetical order separated by comma of 12 points italic Times New Roman.

6. Figures and tables should be centered, separately numbered, self explained. Please note that table titles must be above the table and sources of data should be mentioned below the table. The authors should ensure that tables and figures are referred to from the main text.

EXAMPLES OF REFERENCES

All references must be arranged first alphabetically and then it may be further sorted chronologically also.

- **Single author journal article:**

Fox, S. (1984). Empowerment as a catalyst for change: an example for the food industry. *Supply Chain Management*, *2*(3), 29–33.

Bateson, C. D.,(2006), 'Doing Business after the Fall: The Virtue of Moral Hypocrisy', Journal of Business Ethics, 66: 321 – 335

- **Multiple author journal article:**

Khan, M. R., Islam, A. F. M. M., & Das, D. (1886). A Factor Analytic Study on the Validity of a Union Commitment Scale. *Journal of Applied Psychology*, *12*(1), 129-136.

Liu, W.B, Wongcha A, & Peng, K.C. (2012), "Adopting Super-Efficiency And Tobit Model On Analyzing the Efficiency of Teacher's Colleges In Thailand", International Journal on New Trends In Education and Their Implications, Vol.3.3, 108 – 114.

- **Text Book:**

Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2007). *Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies* (3rd ed.). New York: McGraw-Hill.

S. Neelamegham," Marketing in India, Cases and Reading, Vikas Publishing House Pvt. Ltd, III Edition, 2000.

- **Edited book having one editor:**

Raine, A. (Ed.). (2006). *Crime and schizophrenia: Causes and cures.* New York: Nova Science.

- **Edited book having more than one editor:**

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Bessley, M., & Wilson, P. (1984). Public policy and small firms in Britain. In Levicki, C. (Ed.), *Small Business Theory and Policy* (pp. 111–126). London: Croom Helm.

- **Chapter in edited book having more than one editor:**

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- **Electronic sources should include the URL of the website at which they may be found, as shown:**

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Central Bank of India (2005). *Income Recognition Norms Definition of NPA*. Retrieved August 10, 2005, from http://www.centralbankofindia.co.in/ home/index1.htm, viewed on

7. The submission implies that the work has not been published earlier elsewhere and is not under consideration to be published anywhere else if selected for publication in the journal of Indian Academicians and Researchers Association.

8. Decision of the Editorial Board regarding selection/rejection of the articles will be final.