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CONTENTS

Research Papers

WORK COMMITMENT, JOB DESIGN AND INNOVATIVENESS IN THE INDIAN IT INDUSTRY

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ABSTRACT

Promoting the contemporary latent of employees is the main challenge for HR professionals. Earlier studies have already tensed the role of job design for employee innovativeness. The main objective of this work is focusing on the relation between job design, work commitment, and innovative work performance (IWP). The results show that job control is positively related to both IWP and work engagement, job demands are negatively related to work commitment, yet their relation to IWP is more ambiguous. Significant contact effects between job demands and job control variables concerning work engagement and IWP are found, yet their nature differs significantly. Finally, it is observed that active jobs (high control and high demands) are related to lower levels of IWP than low-strain jobs (high control, low demands), which has significant managerial consequences.

Keywords: Innovative Work commitment, Job Design, Time Pressure, Work performance Employee Innovation.

1. INTRODUCTION:

Human resources are now recognized as significant factors in workplaces, and increasing notice is being given to the motivational crash of giving and receiving social support. Our study builds on this work to determine the role of such Human mechanisms in a work commitment, a concept that simultaneously captures drive and well-being. Data from Indian IT Industry exposed a best-fit model where perceived supervisor support, social support from peers, prosaically impact on others, and autonomy explained variance in work commitment. Furthermore, perceived prosaically impact acted as an essential partial mediator between job design and work commitment. This study provides evidence for the importance of perceived prosaically impact and the role of immediate supervisors in facilitating work commitment in midwifery. Results highlight the value of Human resources and suggest their open addition in current models of work commitment.

Innovative capability is supposed to be a crucial asset for the durable competitiveness of both organizations and nations. Illustratively is the first flagship initiative of the European Union in its 'Europe 2020' strategy paper concerns the need to become an 'innovative union'. Yet, innovation does not only stem from R&D investments and technological inventions. Day-to-day innovations in the workplace are essential for an organization's survival and prosperity (Janssen, 2000; Oldham & Cummings, 1996). Therefore, HR professionals, managers, and social scientists seek to stimulate the innovative performance of broad categories of employees. Multiple levers and antecedents for workplace creativity and creative employee performance have already been recognized. For example, a recent meta-analysis of Hammond et al. (2011) stressed the essential role played by the job design and job kind in promoting individual innovativeness. Already long before, work by Herzberg (1966), Hackman & Oldham (1980), Karasek & Theorell (1990), and recent studies of Bakker & Demerouti (2007) covered the relationship between job design and employee outcomes. Both Karasek & Theorell (1990) and Bakker & Demerouti (2007) categorized job characteristics in essentially two dimensions, job control/resources, and job stress.

They further stress the need to consider interaction effects between these categories in the relation between job design and employee outcomes. For example, job stress such as high time pressure is potentially stressful when employees can't answer the demands but can be demanding and motivating when an employee has a high degree of control over his work. Surprisingly, only a few studies focused on these interaction effects in the relation between job design and innovative work performance (IWP) (Martín, Salanova, & Maria Peiro, 2007).

In this article, we fill this literature gap as we focus on the job design-IWP relation. In doing so, we concentrate on both the direct effects of job design on IWP and the indirect effects of job design on IWP through changed levels of work appointment. Building on Karasek & Theorell (1990) work, we distinguish between job demands and job control and research their relations with IWP and work commitment. The predicted maximum effects of so-called 'active jobs', combining high job demands and high control capabilities, are under particular study.

The article starts by defining the concept 'Innovative Work Performance' and stressing the possible double motivational nature of IWP. Next, the paper reviews the literature on the relation between job designs on the

one hand and work engagement and IWP on the other hand. Multiple hypotheses are proposed. Next, we discuss the measures and data is observed. The results of the data analysis are given with a special focus on the interactions and indirect relations between job design and IWP. After briefly discussing the study's limitations, we conclude with a general discussion of the results and their practical significance.

2. INNOVATIVE WORK PERFORMANCE:

Innovative work performance is here defined as "All employee performance directed at the generation, introduction and/or application (within a role, group or organization) of ideas, processes, products or procedures, new to the relevant unit of adoption that supposedly significant benefit the relevant unit of adoption". IWP thus includes the performance of employees that directly and indirectly stimulates the development and introduction of innovations in the workplace. Different authors distinguish different dimensions in the concept of innovative work performance. Already Scott Bruce (1994), building on the work of Kanter (1988), proposed three distinct dimensions: idea generation, championing, and implementation of the innovation. Later research took over this three-dimensional view on IWP (Holman et al., 2011; Janssen, 2000; Messmann & Mulder, 2010). Other authors nevertheless conceived more dimensions in the IWP concept (e.g., de Jong & Den Hartog, 2010; Kleysen & Street, 2001). Yet, few studies can empirically distinguish between the different dimensions and thus use a single, additive scale for IWPin their analysis (Janssen, 2000; Salanova & Schaufeli, 2008; Scott & Bruce, 1998).

According to many researchers, contextual factors such as job design affect IWP through increased levels of motivation (Amabile et al., 1996; Shalley, Zhou, & Oldham, 2004). This approach is reflected in various empirical studies which study the effect of different factors on IWP through a changed level of motivation (Carmeli & Spreitzer, 2009; Yuan & Woodman, 2010). Yet, various other studies stressed that IWP is triggered by high motivation and can be a coping strategy to reduce the negative effects of high job demands (Janssen, 2000) or job dissatisfaction (Zhou & George, 2001).

IWP, therefore assumingly, has a dual motivational nature (Martín et al., 2007). On the one hand, employees engage in innovative activities as a genuine optimization effort rooted in high motivation levels and a challenging job. But, on the other hand, they also engage in innovative strategies when they face low motivation, high pressure, and strain. Creative performance is then a part of an employee plan to smoothen the work process in order to reduce the experienced work strain. This study focuses both on the relation of job demands in combination with high and low levels of job control and on the direct and indirect relation of job design to IWP running partly through work engagement, indications for such a double motivational nature IWP are under study.

2.1 The Job Design

Building on Karasek & Theorell (1990) work, we approach job design with a focus on job demands on the one hand and aspects of control on the other hand. Job demands refer to job aspects that require sustained, physical or psychological effort of the employee. Job demands aren't necessarily opposing but can turn into job strain and stress if the employee doesn't have sufficient means to answer the demands (Bakker & Demerouti, 2007). Aspects of job control refer to the decision latitude of the employees in performing their job. Building on these two alliances, four different types of jobs are identified, as illustrated in figure 1. Passive jobs are jobs that combine low demands and low control. Low strain jobs combine high control and low demands, active jobs combine both high demands and high control, and high-strain jobs at last combine high demands and low control.
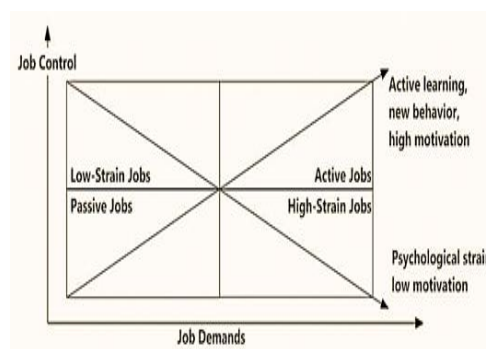
Figure 1 - Karasek model

From this, Karasek (1979) develops two main hypotheses. First, the 'strain hypothesis predicts that the most negative outcomes are associated with high-strain jobs. The second hypothesis, the 'learning hypothesis, predicts that activation and learning are associated with Active jobs, which combine both high demands and high resources. Research predominantly focused on the first hypothesis and less on the second (Witte, Verhofstadt, & Omey, 2007). Moreover, most research related to the 'learning hypothesis' used motivation or work engagement as an outcome variable. Using the Karakek (1979) model as a basis, this article researches the association between job design and positive employee outcomes: work engagement and innovative work behavior. We approached the job control concept referring to autonomy in the workplace, to the degree in which the employee has a responsibility to organize the job himself, and to the degree in which an employee can develop his professional skills in the position. We also included a negative indicator of job resources, routine work. Job demands are approached here using two concepts: time pressure and emotional pressure.

2.2 Work commitment

An optimal job design should contribute to the employee's work commitment, the feeling of being challenged by the work, and having sufficient resources and capabilities to answer these challenges and demands. We, therefore, use the concept of work commitment conceptualized by Kahn (1990) and used in various studies (e.g., Salanova & Schaufeli, 2008). It can be defined as follows: "commitment is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

Building on the previously described theories, we assume that job control variables as independence, organizing tasks, and learning opportunities will be positively related to work commitment as they give a sense of self-determination, crucial for the primary motivation of employees (Deci & Ryan, 2000). Furthermore, empirically independence is already linked to idea generation and implementation by various studies (Krause, 2004; Ramamoorthy, Flood, Slattery, & Sardessai, 2005; Slåtten & Mehmetoglu, 2011). On the other hand, as routine work is a negative indicator for job control, the relation between everyday work and work commitment will be pessimistic.

2.3 Job design, work commitment & IWP

Feeling motivated at work is considered the core antecedent of workplace creativity and innovation by various authors and empirical studies (Amabile et al., 1996; Carmeli & Spreitzer, 2009; Shalley et al., 2004; Yuan & Woodman, 2010). High levels of work commitment result in a greater openness to experiences and ideas on optimizing and changing the work process of products. It also serves as a motivational base to further develop, defend and implement innovative ideas and can thus be assumed to be positively related to the overall IWP.

The relation between job control and IWP is assumed to be relatively straightforward and optimistic, which is not so for the job demands. As previously mentioned, IWP is assumingly rooted in positive motivations and can also be triggered by problems regarding the workload or complexity of the job. Yet, the potential negative effect of these job demands on employee motivation and commitment is equally well recognized. Empirical research generally points to the multiple interaction effects in the relation between job demands and employee outcomes. For example, Janssen (2000) found a positive relationship between job demands and innovative work performance when the perception of effort-reward fairness was high. Likewise, Martin et al. (2007) found that high job demands can increase individual innovation when job control is high.

Further, Fritz & Sonnentag (2009) found that job stressors positively relate to proactive work performance. However, a meta-analysis of the new studies on the relation between stressors and creativity found that the relationship is highly complex and dependent on how stress-inducing the stressor is (Byron, Khazanchi, & Nazarian, 2010). Indeed, the level of stressors matters as much as the type of the stressors and the context of the stressors. For example, high time pressure or emotional pressure can negatively affect innovative work performance when the employee doesn't control the work situation. At the same time, the relation can be positive in the other case. We, therefore, assume to find a direct positive relation between job demands and IWP, but at the same time an essential interaction of job control in the relation between job demands and innovative work performance.

2.4 Hypothesis of the study

Hypothesis 1: Job control is positively related to work commitment

Hypothesis 2: Job demands are negatively related to work commitment

Hypothesis 3: Job control buffers the antagonistic relation between job demands and work commitment

Hypothesis 4: Work commitment is positively associated with IWP

Hypothesis 5: Job control is positively related to IWP

Hypothesis 6: There is a positive relationship between job demands and IWP

Hypothesis 7: Job control strengthens the positive relationship between job demands and IWP

3   METHODOLOGIES
3.1 Population
The data used to test the hypotheses mentioned above were obtained through a survey completed by 600 employees from 4 different companies from various industries of the Flemish region in Hyderabad. The data were gathered in organizations participating in social innovation. Before any intervention took place. The surveys were distributed to all employees who would participate in the upcoming project. The response rate was 100%. As the survey was distributed in the context of email, the motivation and involvement of the organizations was high, which led to an unusually high response of the employees.

3.2 Measures
All ways were included in a paper-and-pencil survey using 5 point Likert scales ranging from 'totally agree' to 'totally disagree.' All job demands and job control measures were taken from the email. Job control is measured by employee independence and organizing tasks. The measure for independence included eight items, including questions like 'I can arrange my own work pace". Organizing tasks is measured using four items including 'I discuss how the tasks are to be planned with others". Four things measure learning opportunities, including 'By doing my job, I learn new stuff" and „I have the opportunity to develop my professional skills." At last, routine work is measured using three items, including questions like 'my job is tedious." Job demands were measured using items referring to time pressure and emotional pressure. Time pressure is measured using four things, including questions like 'I have to hurry on my job, and I have to work under time pressure". The three items referring to emotional pressure included questions like "My work is heavy from an emotional point of view, and My job puts me in emotional situations."

Innovative work performance is measured using an adaption of the questions used by Scott and Bruce (1994), Janssen (2000), and De Jong & Den Hartog (2010). Respondents indicated how much something occurred in their job, ranging from 'very rarely' to 'very frequent. Sample items are "finding an original solution for work-related problems and developing innovative ideas into practical applications." Work engagement is measured using nine items developed by Salanova & Schaufeli (2008), including questions like "If I'm working, I'm feeling fit and strong and 'I'm proud of the work I'm doing." Further, control variables such as gender, age, educational level, and sector of activity are included.

4.   RESULTS
4.1 Descriptive analyses
After omitting the partially completed surveys from the database, all 5-point scales were put in the same direction and rescaled on an easy to interpret scale from zero to ten. Negatively worded items were reversed, and a first exploratory data analysis was performed. In the first step, exploratory principal factor analysis is performed on all the evaluation questions included in the survey. This factor analysis partly confirmed the previously defined concepts. For some scales, superfluous or ambiguous items were excluded. Cronbach alphas of the found factors are all but one (routine work) higher than 0.80 indicated high reliability. The Cronbach alpha of everyday work is slightly lower than 0.70 indicated moderate reliability. This finding is in line with other research, which finds routine work an ambiguous variable with relatively low reliability (Karasek et al., 1998).

In line with the suggestions made by Mortelmans & Dehertogh (2008), restrictive summated scales were computed for the found factors to include observations with some missings but delete observations with multiple missings on the items. This method also keeps the 10-point scale and thus facilitates the interpretation of the results. Extra exploratory factor analysis is performed on the items related to IWP in order to check for the dimensions as proposed by the literature (e.g., de Jong & Den Hartog, 2010; Kleysen & Street, 2001). Yet, building on the results and the literature (Janssen, 2000; Scott & Bruce, 1994), a single additive scale is computed for IWP. Means, standard deviations, alpha's, and correlations between the different scales are given.

5   DISCUSSION & CONCLUSION
As innovation is central in the current discourse on keeping the European companies competitive and affluent, the individual innovative contribution of employees is to be stimulated. The meta-analysis of Hammond et al. (2011) stressed the central role of job design in explaining employee innovativeness. This article further developed the relationship between job design and IWP and specifically searched for indirect and interaction

effects. Using the traditional theory on job design of Karasek & Theorell's (1990) Job Demands-Control model, a series of hypotheses were developed on the relation between job design, work engagement, and innovative employee performance. Using multiple regression analysis, it is observed that two job control variables (organizing tasks and learning opportunities) are positively related to work engagement and IWP.

Autonomy was insignificantly related to IWP and very weakly to work engagement. The negative indicator for job control, routine work, didn't significantly relate to IWP but negatively affected work engagement. Finally, job demands (emotional and time pressure) are negatively associated with work engagement, while their relation to IWP is very mixed. Possibly, a distinction should be made between different types of job demands, as proposed by Van Den Broeck et al. (2010), between job hindrances and challenges. Here, the first category is hard to overcome, yet the second can stimulate if sufficient control.

It is found that significant interaction effects between job demands and job control concerning IWP and work engagement when searching for interaction effects. For work engagement, organizing tasks served as an effective buffer in the antagonistic relation between time pressure and work engagement. For IWP, the interaction effects are more complex. Here, the highest degrees of IWP were found in low-strain jobs, combining high control and low demands. According to Karasek (1979), active jobs that would lead to new kinds of employee performance are therefore not superior in terms of IWP. On the other hand, facing low demands intensity, employees assumingly have the time and space to think about alternatives, experiment with work procedures, and therefore develop practical innovations. Nevertheless, it should not be left out of consideration that the main difference in terms of IWP is found between jobs with high control and jobs with low control.

As this study observed that employees in high-strain jobs tend to show more innovative performance than employees in low-strain jobs and that job demands are both, directly and indirectly, related to IWP and it can interpret these results as solid empirical proof for the existence of two sorts of triggers for IWP. On the one hand, innovative performance is triggered by high degrees of employee motivation and high job control. On the other hand, IWP is triggered by a lack of job control combined with high demands. Yet, in terms of levels of IWP, the first trigger is far superior to the second. These findings have critical managerial consequences. HR policies focusing on increasing employees' innovative performance should first and foremost focus on enhancing the employee's control over his work task. Yet, active jobs are inferior in terms of IWP as compared to low-strain jobs. Keeping the number of job demands low thus enables employees to utilize their innovative potential fully.

6. LIMITATIONS:

The primary limitation is the cross-sectional character of the study, which makes any causal prevention impossible. Reverse causality is therefore possible. It could well be imagined that employees who behave innovatively receive more autonomy and learning opportunities in their workplace. Further, the measurement of IWP as a unitary concept is troublesome given the various studies that stressed the need to distinguish between the different dimensions of IWP (de Jong & Den Hartog, 2010; Kleysen & Street, 2001). Next, a single method is used to measure all the used concepts in this analysis. Different authors suggested that this could inflate associations between concepts, yet others state that this problem is not overestimated (Spector, 2006).

Moreover, finding interaction relations in the data makes a problematic common method bias very unlikely (Siemsen, Roth, & Oliveira, 2010). Future research should further develop the presented model and confirm the findings using multi-source data. The inclusion of variables referring to the employment relation of the employee with the employer could further enrich the insight into how to stimulate the innovative performance of employees.

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REMOVAL OF CHROMIUM (VI) TOXIC ION FROM WASTE WATER WITH GRAPHENE-SPINEL COMPOSITE ELECTRODE BY ELECTROLYSIS: A MINI-REVIEW.

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ABSTRACT
The rapidly growing population, Industrialization and urbanization have increased the pollution level which in turn increases health hazards in human beings and in aquatic animals. Many processes are adopted to remove the organic and inorganic pollutants from surface and ground water bodies as water is a matrix for life. Various nano-composites with greater efficacy are used to remove toxic heavy metal ions by adsorption, photo-catalytic degradation and electrolysis. This mini-review focuses on establishing the potential use of various graphene-spinel composite electrodes in the electrolytic reduction process for the remediation of Cr(VI) from the waste water. Various spinel composites are evident to possess the desired properties than any other composite electrodes for this purpose. Different techniques for the synthesis of the desired composites and its properties are discussed through this study.

Keywords: Graphene NP, Spinel composite, Electrolytic reduction, Cr(VI) removal, mechanism.

INTRODUCTION:
The rapidly growing world population causes the increase in pollution level and continuous need of energy and food also increases, which in turn increases the industrial setup and thus affect the pollution level in aquatic bodies. There is a need to explore an effective method that does not take long time for treatment of waste water, does not require extensive land area for its disposal, and does eliminate the production of sludge produced by the discharge of waste water. The discharges from the industries contain heavy metals and other impurities such as: volatile organic compounds (VOCs), fertilizers, pharmaceutical products that adversely affects the environment as well as human health. Hence an efficient and effective method should be employed in this regard. Electrolytic reduction is one such method that can be efficiently and safely employed for this purpose [1]. This process involves the reduction of heavy metals and other pollutants in the water body by the application of high voltage electricity, in the presence of cathode and anode, by the addition of catalysts that facilitates the reduction of heavy metals. Therefore, the electrolytic reduction is convenient, safe and clean process for treatment of waste water containing pollutants such as: VOCs, heavy metals, fertilizers, pesticides, pharmaceutical discharges, etc. The survey explores the treatment of hexavalent chromium [Cr (VI)] by electrolytic reduction using graphene-spinel composites as electrodes. This technique possess many advantages over the conventionally used other metal composites as it provides resistance to high temperature variance, is environment friendly, most durable, 200 times more stronger than iron, conduct efficiently and possess high surface area to volume ratio, can be used for longer period of time without getting damaged and can provide high yield. Hence exploring this field of research can be very helpful in removing the toxic Cr (VI) waste water and make it portable[2].

Materials and Methods
The techniques may involve the synthesis through various chemical processes. Through this survey some of major techniques introduced for the synthesis of graphene-spinel composite electrodes are discussed [3]. This involves:

Synthesis of rGO-nZVI composite:
This process involves the synthesis of Nano-scale zero-valent iron (nZVI) composites assembled on graphene oxide (GO) through reduction of GO and ferrous ions with potassium borohydride, for its application in removal of Cr(VI) aqueous solution. This process may cause the over accumulation of nZVI that can be inhibited by the 2D structure of graphene oxide, which provides a skeletal support for Fe^0. The reduction process used for the preparation involves the mixing of $FeSO_4 \cdot 7H_2O$ and GO at certain concentration range and constantly stirring with KBH_4 aqueous solution under specific reaction conditions.. Cr(VI) removal occurs firstly by transfer of electrons from Fe^0 cores *via* their Fe(II)/Fe(III) shells to the GO sheet where negatively charged Cr(VI) receives electrons and get reduced to less toxic Cr(III). This was then adsorbed by the negatively charged GO sheet, thus avoiding the capping and passivizing of nZVI. The composite is subjected to further characterization[4].
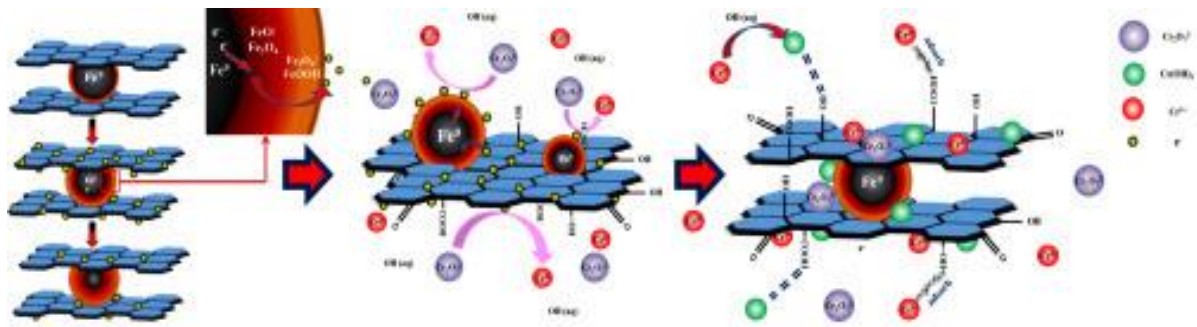
Fig1. Possible mechanism for incorporation of ZVI in rGO nano-sheets[4].

Synthesis of (Fe₃O₄/G) Nano composite:

To achieve the high power output without sacrificing extra amount of input energy, a (Fe_3O_4/G) Nano-composite can be used as negative electrode material, whereas 3D Graphene material with high surface area as positive electrode material. The synthesis of the composite cathode involves the GO as the precursor and the mixture solution of $FeCl_3.6H_2O$, urea and ethylene glycol as the solvent phase. The reaction process occurs through solvothermal reaction method inside a Teflon-lined stainless steel autoclave under appropriate temperature and conditions. The synthesis of anode involves the mixing of homogeneous GO with sucrose in different mass ratios as the main constituents. This synthesis also occurs inside the autoclave. The Fe_3O_4/G Nano-composite shows a high reversible specific capacity as well as excellent rate capability and improved cycle stability [5].

Synthesis of graphene-magnesium aluminate spinel:

This process involves the synthesis of graphene-magnesium aluminate spinel. In situ multilayer graphene/$MgAl_2O_4$ composite powder along with homogeneously distributed graphene was synthesized with magnesium citrate via one-step carbon-bed sintering process. Magnesium citrate serves as the source of both MgO and carbon [6].

The sintering process involves the following reactions:

$$C_{12}H_{10}Mg_3O_{14}.3H_2O \longrightarrow C_{12}H_{10}Mg_3O_{14} + 3H_2O$$

$$C_{12}H_{10}Mg_3O_{14} \longrightarrow 2C_5H_4MgO_4 + MgO + 2CO_2 + H_2$$

$$2C_5H_4MgO_4 \longrightarrow MgO + CH_4 + CO_2 + 2C$$

$$CH_4 \longrightarrow C + 2H_2$$

$$CO_2 + H_2 \longrightarrow CO + H_2O$$

$$C + H_2O \longrightarrow CO + H_2$$

$$C + CO_2 \longrightarrow 2CO$$
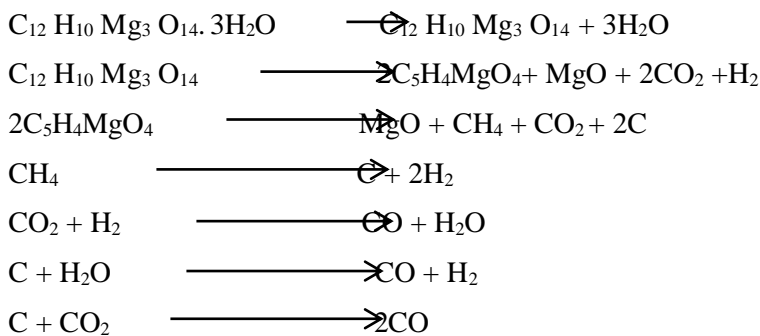
Synthesis of Co[Co,Fe]O₄/nitrogen-doped graphene composite:

In this process the composite is prepared in 3 different steps:

a) Synthesis of nitrogen-doped graphene

b) Synthesis of Co[Co,Fe]O₄/N-doped Graphene

c) Synthesis of Co[Fe₂]O₄/N-doped Graphene

The composite electrode exhibit high initial capacity, remarkable cyclability, and good rate capability along with decreased over potential of the cells. The improved reduction performances are attributed to the good property of Co[Co,Fe]O₄ with an inverse spinel structure and the improved electronic conductivity of N-doped graphene. The inverse spinel surface in Co[Co,Fe]O₄/NG is more active than that of the normal spinel phases for the redox reactions. Apart from providing high efficiency, Co [Co,Fe]O₄/NG catalyst maintains its stability for more than 110 cycles with limited capacity and at a low current density[7].
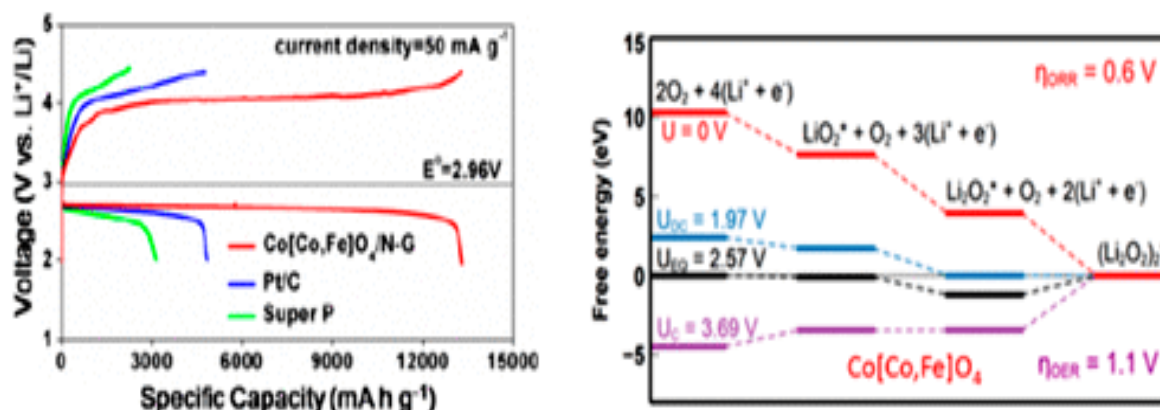
Fig2. Co[Co,Fe]O₄/NG catalyst maintains its stability for more than 110 cycles with limited capacity and at a low current density [7]

Synthesis of nitrogen-doped graphene-LiMn₂O₄ Spinel:

A super capacitor is prepared using $LiMn_2O_4$ as the anode and nitrogen-doped graphene/porous carbon composite as the cathode to achieve high energy and power densities in Li_2SO_4 aqueous electrolyte. The preparation of the composite electrode involves the synthesis of MnO_2 through the oxidation-reduction reaction between $KMnO_4$ and ethyl alcohol. The synthesis of $LiMn_2O_4$ involves a superficial hydrothermal technique which includes the dispersion of MnO_2 in distilled water along with LiOH in an autoclave. The synthesis of nitrogen-doped graphene composite is done by one-step pyrolysis of the mixture of graphene oxide and polyaniline in the presence of KOH[8].

Synthesis of Spinel NiCo₂O₄- graphene Nano-sheets:

Spinel $NiCo_2O_4$ 3-D Nano-flowers supported on graphene nano-sheets (GNs) are prepared by a simple solvothermal synthesis method as non-noble metal electro catalysts for OER (oxygen evolution reaction). This composite sample can be prepared by mixing $Ni(NO_3)_2.6H_2O$ and $Co(NO_3)_2.6H_2O$ that is dissolved in isopropyl alcohol. Finally the reaction takes place inside an autoclave and it undergo sintering and characterization to get the desired composite. $NiCo_2O_4$/GNs composite has many advantages of nanostructures, porous interlayers, high surface area, abundant catalytic sites and high stability [9].
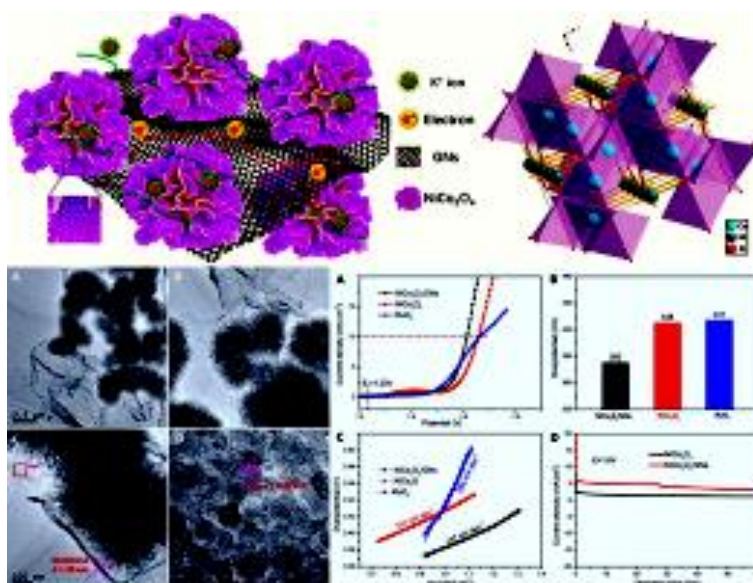
Fig3. NiCo₂O₄/GNs composite has many advantages of nanostructures, porous interlayer, high surface area, abundant catalytic sites and high stability [9]

Synthesis of CoFe₂O₄ spinel/rGO composite aerogels:

Spinel-type oxide/reduced graphene oxide (rGO) composite are fabricated as anodes where the spinel nanoparticles (NPs) are integrated in an interconnected rGO network[10]. The fabrication of the spinel/rGO composite involves the following steps:

a) Mixing of GO and nanoparticles homogeneously under sonication.

b) The mixed solution was transferred into a closed container and it was treated under calculated temperature, pressure and duration.

c) The aerogel formed was dried and a monolith film was obtained.
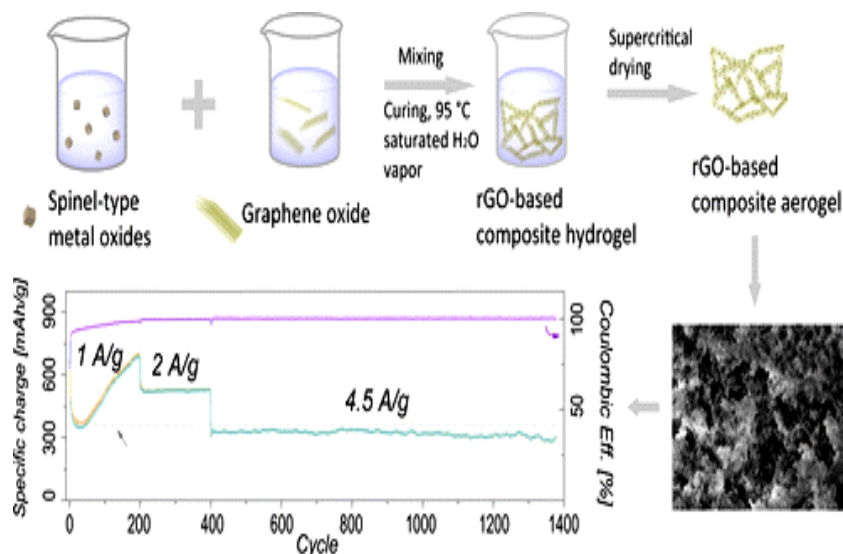
Fig4. The fabrication of the spinel/rGO composite and SEM image inset [10].

DISCUSSION:

✓ **rGO-nZVI composite:** Characterization of rGo-nZVI explains the 2D structure of the rGO sheet. The large no. of particles of zerovalent iron nano-particle gets deposited over the surface of rGO sheets producing rGO-nZVI. The final reactivity of the system increases with increase in the thickness of the oxide film. The amount of the composite produced depends on the concentration of Cr (VI) and this rGO-nZVI would enhance and accelerate electron transfer and exhibits high rate and capacity for Cr (VI) removal. The remediation capacity of the spinel composite is far better as compared to pure nZVI. The pH also plays and important role as the removal is more efficient as lower pH[4].

✓ **(Fe_3O_4/G)- graphene spinel Nano composite:** (Fe_3O_4/G) Nano-composite can be used as negative electrode material, whereas 3D Graphene material with high surface area as positive electrode material. The Fe_3O_4/G Nano-composite can possess a high reversible specific capacity, excellent rate capability and improved cycle stability. The hybrid super capacitor Fe_3O_4/G//3DGraphene is believed to demonstrate an ultrahigh energy density and hence can be one of the efficient super capacitors. The energy density of the hybrid super capacitor is comparable to lithium ion batteries which makes these super capacitors a he source of energy [5].

✓ **Graphene-magnesium aluminate spinel:** The solid products obtained by sintering magnesium citrate trihydrate indicate that the phases of the products have low crystallinity. The increase in sintering temperature can be implied as the organic acid magnesium has been decomposed to MgO. The diffusion rate decelerated after the formation of the product layer. The degree of graphene increased with sintering temperature[6].

✓ **Co[Co,Fe]O_4/nitrogen-doped graphene spinel composite:** The composite electrode exhibit high initial capacity, remarkable cyclability, and good rate capability along with decreased over potential of the cells. The improved reduction performances are attributed to the good property of Co[Co,Fe]O_4 with an inverse spinel structure and the improved electronic conductivity of N-doped graphene. This can prove as a promising bifunctional catalyst for anodic reduction as well as offers a rationally design catalysts for various applications [7].

✓ **Nitrogen-doped graphene- LiMn$_2$O$_4$ Spinel:** $MnO2$ constitutes of an irregular spherical shape with particle size in the range of 60- 100 nm. Spinel LiMn$_2$O$_4$ that is prepared by a hydrothermal procedure exhibits greater electrochemical performance, such as high specific capacitance and excellent rate capability. The above optimized setup delivers a high specific energy at a specific power. This process provides a promising reduction reactor having high-performance and exhibit high energy density. The nonlinear charge/discharge profiles demonstrate the pseudo capacitive behaviour of LiMn$_2$O$_4$. The

excellent rate capability and superior cycling stability could be attributed to its nanoscale structure, which provides a short diffusion and transport channel for Li+ and consequently increases the interface area [8].

✓ **CoFe$_2$O$_4$ spinel/rGO composite aerogels:** The properties exhibited by the spinel composite such as: porosity, conductive network and mechanical stability make the system synergistically enhanced, robust and flexible. The CoFe$_2$O$_4$ spinel/rGO composite aerogels demonstrate greatly enhanced rate capability and long-term stability without losing the capacity. This electrode design can successfully be applied to several other spinel ferrites such as MnFe$_2$O$_4$, Fe$_3$O$_4$, NiFe$_2$O$_4$ or Co$_3$O$_4$, all of which lead to excellent electrochemical performances and can also be used as super capacitors or catalysts [9].

✓ **Spinel NiCo$_2$O$_4$- graphene Nano-sheets:** Spinel NiCo$_2$O$_4$ 3-D Nano-flowers supported on graphene nano-sheets (GNs) are prepared by a simple solvothermal synthesis method as non-noble metal electro catalysts for OER (oxygen evolution reaction). NiCo$_2$O$_4$/GNs composite has many advantages of nanostructures, porous interlayers, high surface area, abundant catalytic sites and high stability. NiCo$_2$O$_4$/GNs composite exhibits a better OER performance than NiCo$_2$O$_4$ and RuO$_2$ in alkaline medium that has a low onset potential and a small Tafel slope. It can have potential application as electrodes in electrolytic reduction process as well as catalytic material in energy conversion and storage system[10].

ADVANTAGES AND LIMITATIONS:

✓ **Advantages:** Discharge of the high power supply, Resistance to high temperature variance, environmentally friendly, Can be used for longer time without wearing, 200 times stronger than iron, most durable, conduct efficiently and possess high surface area to volume ratio.

✓ **disadvantages:** Low first cycle efficiency of graphene composite anode materials, Increase in the weight and cost of the electrode, Low initial columbic efficiency, high charge and discharge platform.

CONCLUSION:

From the above observations, although the graphene based spinel composite electrodes possess some disadvantages but these cons can be overshadowed by the wide range of advantages it possesses. Moreover, some metal ion composites are very much expensive while some others are non-resistant to high temperature and needs regular disposal that affects the efficacy of the system. Hence much better advantageous electrode composite can be prepared by combining the special properties of graphene along with metal coordinated spinel. The composite formed also has all the positive properties required for an ideal, efficient and stable electrode that can resist high change of temperature, can adsorb much more materials than others, 200 times stronger than the strongest and many more. Thus, ignoring some mere disadvantages, it is one of the best composite electrodes that can be used for the removal of hexavalent chromium Cr(VI), from the waste water through the electrolytic reduction process. So, Graphene-Spinel composite can be one of the desired electrodes for such purpose.

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FACTORS AFFECTING THE PERFORMANCE OF REAR SURFACE OF BIFACIAL PANELS AND EFFICIENCY IMPROVEMENT USING REFLECTORS: A REVIEW

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ABSTRACT

The solar photovoltaic is proved to be one of the most promising renewable energy resources, but the high cost and complicated fabrication technology of solar cells become the constraint of this technology for its wide application in many fields. The better conversion efficiency, along with the efficient preparation technologies and flexible structures would make a significant positive impact on the usage of Solar PV. People are looking forward to the applications of solar PV technology in day to day life due to fast degradation of conventional sources of energy. In this paper, the focus is given on a special type of solar panel which is capable of producing electricity from both of its surfaces, called Bifacial Solar Panel. An enhancement of 30% more Electricity generation is possible due to conversion of direct as well as reflected (Albedo) component of light. Monocrystalline bifacial panels are more efficient than polycrystalline ones because the later is composed of fragments of Si melted together whereas the former one has a Single Si Crystal giving more space for electrons to move. The performance of these panels can be enhanced with optimized use of reflectors. Appropriate orientation of the reflector below the back surface of a panel play a crucial role in increased power generation. However, it is observed that if slope and direction of the bifacial panel is optimized then they proved to be effective without reflectors also.

Keywords: Bifacial Solar Panels, Albedo, Reflectros, Bifaciality.

I. INTRODUCTION

It is well known that bifacial panels convert Sunlight falling on both of its surfaces into electricity. This paper mainly talks about performance of rear surface of bifacial panel. The rear surface generates voltage by receiving a light reflected from ground. The performance gets affected due to various factors like quality of Albedo (Reflected light), different surfaces giving rise to albedo, reflectors of various shapes and overall design of the Bifacial PV system. The performance also depends on geographical location, time of the day, height of the panel from ground, tilt of the panel, tracking scheme, etc.
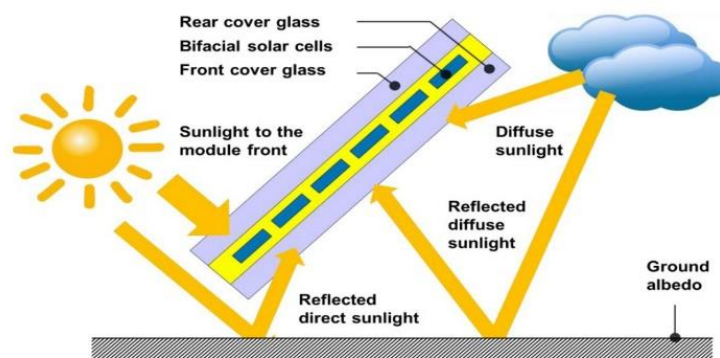
Figure 1: Bifacial Panel PV System

The overall rating of the panel is called bifaciality factor which is defined as the ratio of rear surface efficiency over front surface efficiency:

$\beta = P_{mp, rear} / P_{mp, front}.$

If bifaciality factor is more, energy yield is also more. Proper market survey and analysis can reduce the LCOE with the use of bifacial panels. The overall cost can also be reduced as fewer bifacial panels are needed to produce certain amount of power as produced by their mono facial counterpart. Moreover, bifacial systems require smaller array footprint and less space. The efficiency of these panels depends on transmittance of panel glazing, packing factor of the panel, reflection performance of the reflector, etc.

Construction options:
There are two ways of constructing a Bifacial Solar Panel;

1. **Dual Glass Approach**: Both the surfaces are covered by Solar Glass, rigid in nature, permits less water to safeguard the inner components, protects the panel from heavy wind, snow, rain, moisture, etc., longer life time, has lower failure rate, longer warranties offered by manufacturers, degrades only 0.5% per year so LCOE (Levelised cost of energy) is less.

2. **Glass - Polymer Approach**: Front surface is covered by glass and the rear one by transparent polymer back sheet. Sheets with white grid allows extra reflectivity, they are lighter, easier to transport and install, They degrade 0.7% per year so life time is less and seems to be costlier in long run than the first approach.
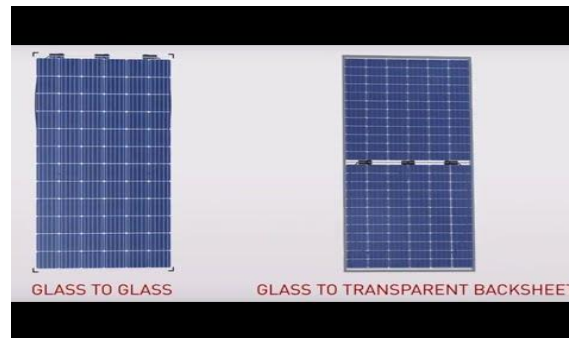
Figure 2: Construction approaches

The factor called Bifacial Gain plays a crucial role in deciding the performance of the bifacial panels. It also differentiates how bifacial panels are more feasible over monofacial panels despite of their costlier manufacturing.

These panels can perform better, when they are used with reflectors. The generation of electricity from the rear surface varies with reflectance of various surfaces. They can be naturally available or can be purposefully kept below the panel to improve its performance. Various types of reflecting surfaces and their capacity to produce albedo are mentioned in the table 1.

When reflectors are not used, the front surface receives the Sunlight directly whereas the rear surface captures reflection from diffused sky radiations or/and the reflection from the ground i.e. Albedo. When reflectors are used, the bifacial panel is expected to generate additional electricity, provided slope of the reflector, efficiency of the reflector and height of panel from the reflector is optimized.

Figure 3: Albedo falling on Rear Surface

II. METHODS AND MATERIAL
[1] FACTORS AFFECTING THE REAR   SURFACE PERFORMANCE:

1.1 Height: Less height of panel from the ground permits less reflected light to reach the back surface. In a simulation Expt. It is found that, the energy boost curve is steepest between 0 to 7.9 inches. After 20 Inches, the curve flattens and additional energy gain is negligible. A panel would be efficient if height of the leading edge from the ground is 18 to 36 inches

1.2 Albedo: This effect is observed from light reflected from various surfaces like ground, grass, sand, snow, etc. Depending on location and project specifications the colored surface can control the albedo effect. (Figure 4)

Surface Type	Albedo %
Green filed (Grass)	23
Concrete	16

White painted concrete	60-80
White gravel	27
White roofing metal	56
Light gray roofing foil	62
White roofing foil	> 80

Table 1: Estimated albedo of different surfaces

Figure 4: Actual Site

[2] OVERALL DESIGN:

Mono facial Panels are based on racking system which includes rails that cross over the rear side of the panel. If same structure is used for bifacial panels, the cells on rear side will be covered by rails which lead to hotspots damaging the panel. Hence, bifacial panels should be employed with narrower rails or vertical supports to minimize the shading effect. The junction boxes should be located at the perimeter of a Panel. The bifacial modules can be mounted in various ways.

To avoid self-shading the panels are mounted in Two-up landscape layout. This layout minimizes degradation also. One up portrait layout is found to produce better cost effectiveness. Shading can also be minimized by providing gaps in between adjacent cells so that light falls directly on the reflector through the gaps and reaches the rear surface after reflection.
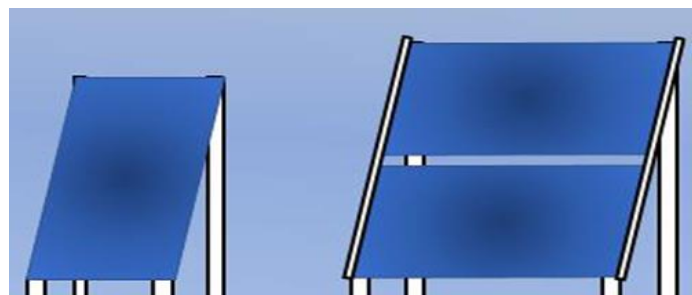
Figure 5: Left – One up portrait Layout Right – Two up Landscape Layout

Bifacial panels produce extra power. So the rating of cable, connectors, over current protection, electronic equipment, etc. should also be higher. They should be sized properly so as to handle the maximum current produced by the panel. The maintenance of these panels should be done more frequently to clean the rear surface so that albedo effect from the ground can be maintained at higher level.

[3] BIFACIAL GAIN:

To quantify the advantage of bifacial modules, the energy yields at different times of the day are compared using the bifacial gain, which is the relative increase of the energy yield of a bifacial module compared to a monofacial module, and is defined as,

$$BG = \frac{Ybi - Ymono}{Ymono}$$

Here,

Y_{mono} = electricity yield of Monofacial module

Y_{bi} = electricity yield of Bifacial module

This gain is found to be 50% more than the identically oriented and tilted monofacial counterpart. Due to high efficiency, compatible manufacturing process, extra energy production by rear side and longer life time, bifacial modules result in lower LCOE (Levelised Cost of Energy) despite of the fact that their manufacturing is more expensive.

3.1 Factors affecting the bifacial gain:
1. Clearness Index

2. Elevation

3. Optimal Azimuthal Angle

4. Low Albedo

5. High Albedo

6. Critical Latitude

7. Optimal Tilt Angle

3.1.1 Clearness Index:
It indicates the extraterrestrial irradiance transmitting through the atmosphere and reaching the ground. It is found that bifacial gain decreases with clearness index. It is more profound in cloudy locations than in clear sky areas i.e. the gain is found to increase due to higher concentration of diffused Sunlight in lower atmosphere.

EX. In Shanghai KT (A) = 0.35 and in Cairo KT (A) = 0.7. So in Shanghai Bifacial Gain is found to be 5% more than in Cairo. This happens due to additional absorption from rear side of the bifacial panel.

3.1.2 Elevation:
Highly elevated modules suffer considerably less from the self-shading. At elevations beyond the limit, the loss due to self-shading diminishes and becomes negligible at much higher elevations. The energy production of modules plateaus at high elevation from the ground, Thus there is a certain value of the elevation from which the bifacial gain starts to saturate. This value is called E95 which is the elevation required to attain 95% of the maximum energy production. It is observed that E95 decreases linearly with latitudes of various locations and it increases with higher ground Albedo. Elevating the solar module enhances the convective cooling power due to increase in wind speed thereby reducing the operating temperature.
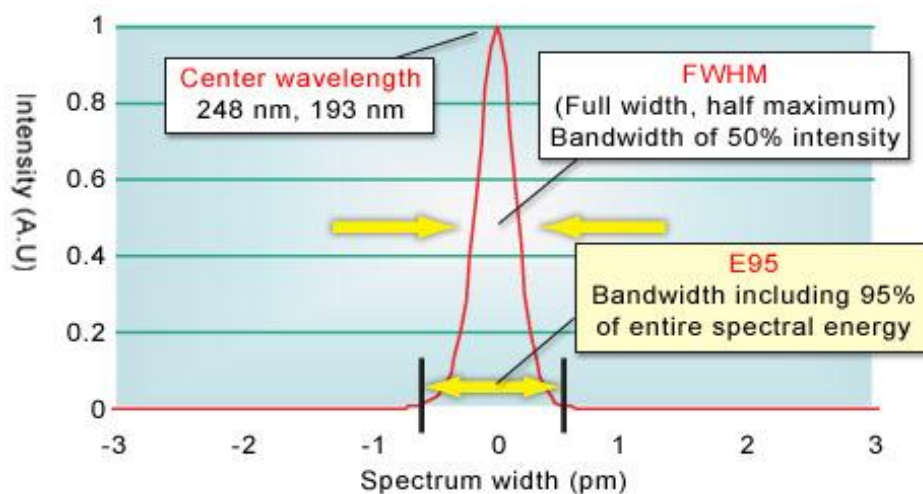
Figure 6: Fluctuation of E95.

The horizontal axis indicates the pulse consumption while the vertical axis indicates E95.

3.1.3 Optimal Azimuth Angle:
After the elevation is decided, azimuth angle should be optimized to maximize the energy production. The azimuth angle of the module should be measured in either East-West (Bi_{EW}) OR South-North facing (Bi_{SN})
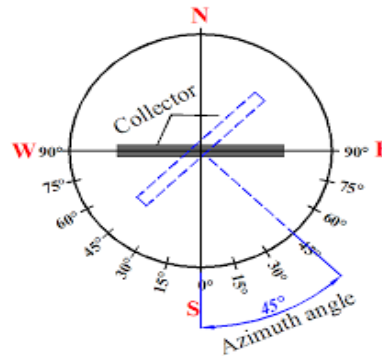
3.1.4   Low albedo:

It is found that Bi_{SN} can outperform vertical Bi_{EW} by about 15% worldwide for a ground mounted system with a low albedo of 0.25. Here total production happens almost due to direct light collection by front side of the module. There is no direct collection at noon by vertically mounted module.. Hence Bi_{SN} is more favorable than Bi_{EW} at low albedo

3.1.5   High Albedo:

If albedo is increased to 0.5 in ground mounting case, it is found that Bi_{EW} can produce more electricity than Bi_{SN} configuration upto 15% within 30^0 latitude. This happens due to self-shading of albedo light which diminishes the energy production in Bi_{SN} configuration. Conversely, Bi_{EW} at higher albedo has an advantage of reduced soiling of the rear side arising from higher tilt angle. Due to reduced soiling, the energy output increases and cleaning cost decreases. But at higher latitudes (more than 30^0), at optimal tilt angles and at high albedo the loss due to shading effect in Bi_{SN} configuration diminishes and it outperforms the Bi_{EW} configuration.
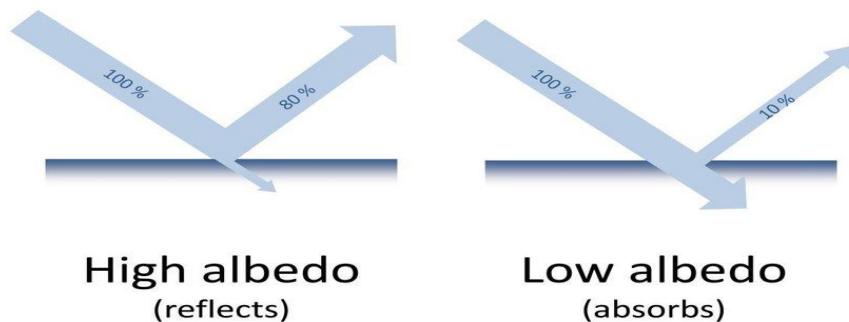
Figure 7: High & Low Albedo

3.1.6   Critical Latitude:

The self-shading varies as a function of elevation and ground albedo at given location. There exists a critical value of latitude (Lat_{Cri}) below which Bi_{EW} is more productive than Bi_{SN} and vice versa. At a location discussed in previous slide, the $Lat_{cri} = 30^0$. Lat_{cri} is a function of elevation and ground albedo at different clearness index values. An empirical formula is developed to calculate Lat_{cri} which depends on elevation E, Module height H and ground albedo R_A:

$Lat_o = E/H \times (44 \times R_A - 62) + 37 \times R_A + 12$

$If\ Lat_o \leq 0,\ Lat_{Cri} = 0^o$ and $If\ Lat_o > 0,\ Lat_{Cri} = Lat_o$

3.1.7   Optimal Tilt Angle:

For Bi_{EW} vertical installation the tilt angle 90^0 produces the most electricity. For Bi_{SN} the optimal tilt angle is higher than its monofacial counterpart. The increased tilt in bifacial modules enhances the rear side albedo collection and makes them more soiling resistant which in turn increases the bifacial gain. The set of equations developed for optimal tilt angle in Bi_{SN} orientation taking into account the self-shading is as follows:

$\beta o = a \times Lat + b$ ………… *(i)*

$a = 0.86 - 0.57 \times R_A \times \exp(-E/H)$ …………. *(ii)*

$b = 4.5 + 62 \times R_A \times \exp(-E/H)$ …………. *(iii)*

$If\ \beta o \geq 90^o,\ \beta Op = 90^o$ and $If\ \beta o < 90^o,\ \beta Opt = \beta o$

[4] REFLECTORS:

As discussed above, the insolation received by the rear surface from reflectors enhances the energy production. Various types of reflectors contribute differently to the final energy yield.

4.1 Types of Reflectors:

Mirror type reflector: Only one beam of the reflected light is directed to the rear surface. Fig (8a)

Semi-mirror type reflector: This type reflects some portion of incident light towards the rear side of the panel and remaining portion scatters elsewhere. Fig (8b)

Diffuse reflector: It scatters the reflected radiation all over the rear surface of the bifacial panel. Fig (8c)
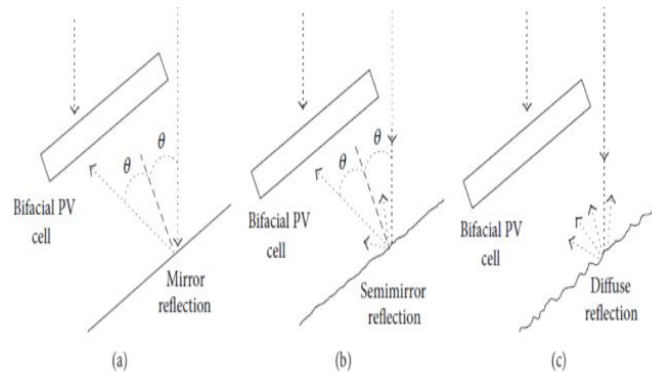
Figure 8: Types of Reflectors

Reflectance of various colours is also mentioned in below table:

Sr. No	Colour	Reflectance (%)
1	White	75
2	Yellow	69
3	Orange	61
4	Red	55
5	Green	49
6	Blue	45
7	Brown	43
8	Purple	40
9	Grey	38
10	Dark Green	34
11	Dark Blue	32

Table 2: Reflectance of various colours

4.2 Mathematical Formalism

Let

I1 - Solar Insolation received by Front surface

I2 - Solar Insolation received by Rear surface

a- Length of the reflector

b- Breadth of the reflector

β – Slope of the reflector

α1 - Slope of the panel / an angle at which light is incident on the front surface

α2 - an angle at which light is incident on the rear surface

h – Height of the panel from reflector

L – Dimension of the panel

4.2.1 Bifaciality Factor of a cell:

$$Cell\ Bifaciality = \frac{rear\ surface\ efficiency}{front\ surface\ efficiency}$$

$$K_{bif} = \frac{\eta\ pv\ rear}{\eta\ pv\ front}$$

4.2.2 Bifacialty Factor of the Panel:

$$Panel\ Bifaciality = \frac{rear\ electrical\ output}{front\ electrical\ output}$$

$$= \frac{Erear}{Efront}$$

Rear Surface efficiency,

$$\eta\ pvrear = \frac{Erear}{I2\cos(\alpha2)}$$

Front Surface Efficiency

$$\eta\ pvfront = \frac{Efront}{I1\cos(\alpha1)}$$

Panel Bifaciality =

$K_{bif} . \boldsymbol{\eta}$reflector. $\frac{\cos\alpha2}{\cos\alpha1}$

Here if both the surfaces are assumed to receive same intensity of solar radiation. Also, area of both surfaces is same Hence; both of them would produce same energy.

4.2.3 Packing Factor of Panel:

In bifacial panels the solar radiation can pass through the transparent gaps between the cells and reach the reflector. They in turn reach the rear surface to further enhance the overall efficiency of the panel. The parameter which includes this fact is called Packing Factor which is defined as ratio of total area of four cells to the area of a panel. If a & b are length and breadth of a cell and L is side of square shaped solar panel then

$$Packing\ Factor = \frac{4\,ab}{L^2}$$
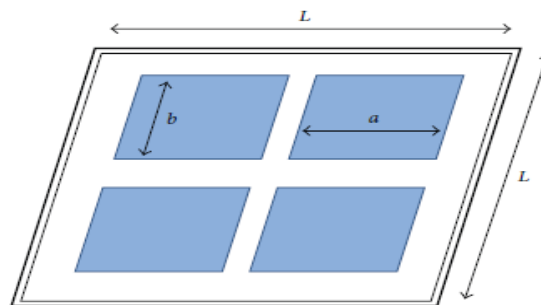
Figure 9: Packing Factor

4.2.4 Total Panel Efficiency:

If a panel and reflector are considered to be of same size then the rear surface receives the radiation which was incident on the reflector through gaps on the front surface. Efficiency of such a panel is given by

$$\eta panel = \eta pvfront . P + \eta pvrear$$

$$(1-P).\boldsymbol{\tau glass} . \eta pvrear. P$$

For a panel having four 5" X 5" cells, the packing factor is found to be 0.69. When slope of the panel is varied between 0 to 50^0, the bifaciality of the panel as a function of slope is found to be:

Panel Slope (degree)	0	10	20	30	40	50	Avg
K$_{bif}$	1	1	0.98	0.96	0.94	0.92	0.97

The total efficiency of the panel can be calculated by placing a reflector in parallel to the panel i.e. ($\alpha_1 = \beta$), and by varying height of the panel from reflector. (Height is varied from 75mm to 215mm)

For a panel with packing factor of 0.69, around 31% of the solar radiation passes through the gaps on front surface. When slope of the panel is zero, the gaps between the cells are the only source of electricity generation from the rear surface. For a bifacial panel with semi mirror type reflector gives maximum panel efficiency at 115mm separation between the panel and a reflector. Whereas, for the same panel with diffuse reflector, the maximum efficiency was found at 75mm and 115mm
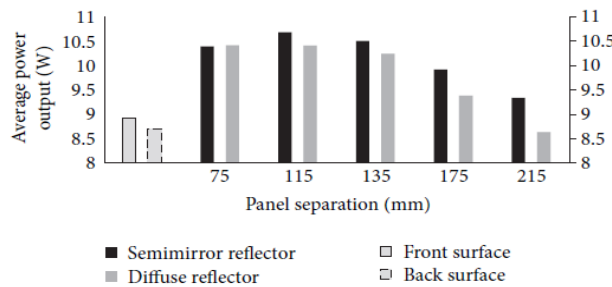
Graph 1: Avg. output as a function of Panel Separation

4.2.5   Max power production:

The bifacial panel integrated with a diffuse reflector reaches the maximum power production at 10^0 tilt and is relatively independent of panel separation. Meanwhile the optimum panel slope of the semi mirror type reflector varies with separation of the panel. The bifacial panel integrated with a diffuse reflector reaches the maximum power production at 10^0 tilt and is relatively independent of panel separation. Meanwhile the optimum panel slope of the semi mirror type reflector varies with separation of the panel.
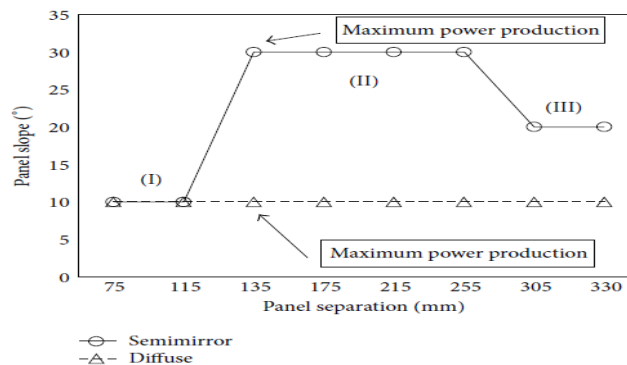
Graph 2: MPP at various values of panel slope and panel separation

[5]   FUTURE SCOPE AND CHALLENGES:
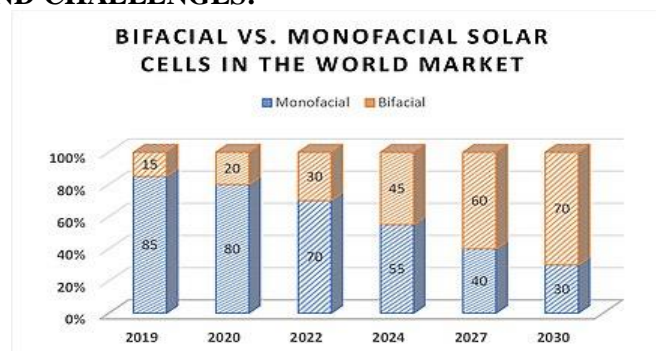
Graph 3: Forecast of the worldwide market shared for bifacial solar cell technology according to the International Technology Roadmap for Photovoltaic (ITRPV)

By 2020, the ENF Solar directory of solar companies lists 184 producers of bifacial solar panels, and according to the International Technology Roadmap for Photovoltaic, they held a 20% share of the overall PV market and its forecast is that this share will rise to 70% by 2030. When looking back on the development history of the BSC, it seems clear that fully industrializing the monofacial PV solar cells and the development of its nowadays

booming market, was a necessary condition for BSCs to become a next step in the advancement of PV solar cell technology, with a solar market and industry that can thus make the most of its performance advantages.

III. CONCLUSION

For 0.25 albedo, only 10% bifacial gain is achieved. If albedo is increased to 0.5, the gain also increases up to 30%. At high albedo (0.5-more shading) and low elevation Bi_{EW} is superior to Bi_{SN}. With low albedo (0.25 – less shading), Bi_{SN} is more beneficial than Bi_{EW}. Above the minimum elevation value E95, the bifacial module gives insufficient benefits. Below critical value of latitude the east-west configuration is more favorable over south-north configuration. The empirical equations used to calculate tilt angles enables rapid design of bifacial modules in global perspective.

If the parameters like separation between panel and reflector (h), tilt angle (β), and Slope of the panel (α) are optimized, the semi-mirror and diffuse reflectors are found to generate equal amount of energy. At small separation, majority of the energy yield is due to the Front surface. Large enough separation allows rear surface to absorb sufficient energy to add its energy production to the front surface energy yield. For very large separation, beyond 250mm diffused light can't be captured by rear surface which lowers the output. Unlike monofacial panels, the maximum power production does not occur for solar radiations normal to the surface. Integrating an external reflector with the bifacial solar panel increases the total panel power production for a semi-mirror type and a diffuse type reflector by 20% and 15%, respectively.

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COMPUTER ORIENTED STATISTICAL ANALYSIS- ENHANCING INTEREST INEDUCATION BY INDUCTING HUMAN VALUES, ETHICS AND MORALS IN FRESHERS OF ENGINEERING GRADUATES

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ABSTRACT

Engineer should upgrade the society in terms of the quality and standards, by providing products and services to meet the basic needs of living, food, body wear, housing, enjoyment, communication, transportation, spiritual and others. A competitive world of solving problems by engineers and technologists is the key to drive continuous improvements in happiness of the world. The past few decades this race has led to unethical practices which led to the deterioration of values, ethics, and morals in the corporate world. We are seeing contamination of air, water, earth and loss of flora and fauna. The Corona virus pandemic 2019-till now has opened the minds of the world with the message to be eco friendly and to realize the true values of life. Co incidentally, the 2019-20 batch of fresher of Sreyas Institute were given an orientation by Lead India. The orientation not only made them take social responsibility but also improved their overall grades. A statistical comparison of the results obtained by this batch with the results of the previous batch in their first semester final exams. A significant improvement was observed.

1. INTRODUCTION

Amir Mohammed, et al [1], have estimated the final year pass percentage based on the second year student performance. The 50 female and male students of Information Technology branch were estimated in their Information Technology fundamentals course. The prediction was in three levels of poor, medium and good performance to achieve level 3 of the Blooms Taxonomy Levels of testing. The Rasch model used helped them in setting up the Blooms Taxonomy levels of examination. This method evaluates the question paper level and acceptance to another important aspect for a student writing exams is their anxiety which might affect their performance. The other positive aspect in a student is his self-efficacy to perform. These two aspects counter his state of mind as he is attempting to write the final exam. Jennifer Barrows et al [2] reported that at teen and adolescent age there are many contradictions and diversions they need to face as they are positioning themselves in a formatted society. They are using the educational qualifications to further their life into the world. The importance of grades and their own personality building is a core crux of undergraduate education.

The hurdles of doubts are faced by the students both in their social behavior and in their academic performance. Sometimes they end up in poor grades and in even failing in courses. But, this is a necessary and essential step all students need to and will undergo in their academic journey. The authors conducted survey using questionnaires for both pre-and post- assessing anxiety and self- efficacy on 110 college students. The final results of the exams indicated that these two are influencing factors, test anxiety is the first and self efficacy is the second important factors which determine the outcomes of exam results. A multi variant analysis feedback can be given to the studentsto self evaluate. Abdi & Baeri [3] also evaluated anxiety and self efficacy among students and their affect on academic performance and in the grades obtained. A multivariate analysis was used. The results could be used by the academic councilors in lowering their anxiety levels and Students with high levels of self-efficacy imagine how they can succeed and they trust in their own abilities.

Nelson and Knight"s [4] Bandera, [5], have concluded that students can be helped by the mentors in high lighting their past achievements to overcome the negative hurdles in their academic path. As grades improve self confidence builds and anxiety decreases, self efficacy improves. Jana Hackathorn, et al,[6] evaluated the importance of evaluation of students during the course. Conducting three intermediate evaluations have resulted in improved results in the final exams. For example, Middlecamp [7],measured students" perceptions of a review game for an abnormal psychology course. The findings suggested that most of the students enjoyed the review game and felt it was challenging. However, King, D. [8], in a psychological score introduced a playing the game on exam scores. This method was difficult to correlate the student"s perception of their academic shortfalls and could not upgrade in their final exams. Suresh Akella et al [9], have analyzed different classes of

students of different engineering branches to see their distribution. All the classes evaluated fitted to a normal distribution.

Sudershan Acharya [10] Founder member of Lead India an organization which teaches values, morals and ethics have done exhaustive workshops to train the youth of India to be upright citizens. The basic foundation incurred in the teens with related field visits to the needy, mostly in the rural areas, brings awareness to the youth, students of the reality in the deprived society. This makes them focus on the academic performance. At Sreyas Institute of Engineering and Technology, located in Hyderabad, Telangana State, India Lead India oriented the students of 2019-20 batch to the values of life the students need to imbibe and carry throughout their professional and general life. Sreyas Institute of Engineering and Technology started in 2011 with Civil, Mechanical, Electronics and Computer Science branches of engineering about 660 students join every year; the cumulative UG andPG students in the institute are about 2500. The institute is affiliated to Jawaharlal Institute of Engineering & Technology technical University and operates with AICTE, academic guide lines. The Sreyas Institute of Engineering and Technology follows the Blooms Taxonomy levels of imparting courses to students in the teaching learning pedagogy. The institute is accredited by NAAC and NBA in recognition of their academic standards. One of the major concerns in upgrading the student"s academic performance is the diversity of both male and female students. The diversity is in understanding the English language as medium of instruction, transforming from science to Engineering & Technology which involves application, analysis and evaluation steps. Shyness, inferiority or superiority complex, different socio- economic- religious backgrounds apart from the natural personality differences cause hurdles in the student"s attitude and performance. The Universityhas about 150 affiliated colleges, Sreyas Institute of Engineering and Technology is one of them. The internal evaluation of assignments and midterm papers are set by the instructors of the institute and thefinal exam papers are centrally set by the University and also they control the evaluation. The syllabus and academic schedules are set by the University and maintain uniformity. Each constituent Institute formulates their own pedagogy and improvement plans to upgrade the academic performance of students.

For the 2019-20 batch of fresher"s, Sreyas Institute introduced a two week personality building program by Lead India of Sudershan Acharya group [10]. They conduct workshops, seminars; lectures in purpose of education in society and make students set their short term and long term life goals and make them take pledge in front of teachers and fellow students. They also are advised to do social service and spread the good among society, throughout their lives. A live successful student is Mr. Ravindra nath Chintala, our Institute Secretary who undertook this course as a adult and formed his life journey of performance and achievements and in supporting society. Our Secretary requested Dr. Sudershan Acharya to provide the orientation to students of 2019-20 batches.

The first year results of this batch had improvements over the previous 2018-19 batch. Though there could be multiple reasons for the improvements like, student"s efficacy, professor"s delivery, the exam preparation and the pedagogy improvements one definite inputs was this attitudinal induction.

Statistical analysis of exam results and co relation to the corrective actions taken has not been exhaustively studied earlier. To test the significance, z-test was done between like batches for specified courses to see the improvements between 2018-9 batch and 2019-20 batch.

2. ANALYSIS OF FIRST YEAR FIRST SEMESTER EXAM RESULTS
JNTUH, follows the grade point system for grouping the students marks course wise and later the overall average grade point is obtained. The grading: Marks range is: :O: (90-100) , A+:(80-90), A:(70-80), B+:(60-70), B(50-60), C:(40-50) and below 40 marks is fail F grade. The final 100 marks are divided into two parts of 25 and 75. The internal assessments and two midterm exams constitute 25 marks allotted by the instructor and the balance 75 marks are obtained from the final exam conducted by the university. All exams are to evaluate the results of the exams which are set to the Blooms Taxonomy levels and reflect the teaching learning outcomes.

3. ORIENTATION TO FRESHERS
As the students come from the intermediate school where they have yearly exams on science, mathematics, languages and social sciences the semester system of engineering needs some introduction. Also, some of the students come from with regional language as medium of instruction. Some are from nearby districts where communication shyness is there compared to the city educated students. There is a gender disparity as both girls and boys ratio in our institute is nearly same. The new engineering subjects like Engineering Mechanics, Drawing, Electrical engineering and computer science will be new to them. From blooms taxonomy levels they would have been mostly taught, learnt and tested on understanding and learning and also apply to some extent. In engineering courses quickly, they have to learn the basics and as well see the application and analysis in

finding engineering products and services. Also evaluate the effects of the application in meeting the desired outcomes otherwise make changes in design to create new versions to cause the technology up gradation.

Government of India, Through All India Council of Technical education, AICTE through the university, JNTUH has prescribed some time, two to three weeks to orient the fresher to the engineering level of teaching and learning; getting familiar with fellow class and batch mates, see the new locations of classes, labs, library, sports grounds, seminar halls, auditoriums etc to quickly getinto the new academic journey of eight semesters of program. Table 1 and Table 2 provides the orientation schedule provided to the 2018-19 and 2019-20 batches.

The two-week induction program covered broad aspects of the model curriculum including:

i. Physical activity: Conducted sports including both outdoor & indoor games. Yoga session was conducted by Mr. P Sandeep Kumar

ii. Creative arts: Singing, Dancing, Musical Instruments, Art classes were conducted.

iii. Lectures by eminent personalities: Mr. Krishna Chaitanya from CreateU on personality Development; Mr. Venkateshwar Reddy from ytrre Software Solutions gave an exposure on latest technologies. Dr. KVSG Murali Krishna about "Joy of Engineering"

iv. Literary and Proficiency: The English faculty has conducted activities like Role plays, Debate, JAM, Essay writing, including Language Lab Sessions. Principal Dr. Suresh Akella conducted SWOT analysis activity.

v. Human values: Session by Mrs. Surekha, Student Counselor on how to handle peer, academic pressures and how to enjoy learning.Session by Mr. Nishan, 4th year student on "What India Thinks". Played selected movies based on human values and ethics. Dr. Subramanyam conducted a session on Stress Management.

vi. Other Activities: Tree Plantation Activity, Dental Camp for oral hygiene

vii. Introduction of Departments: A brief talk by HOD of respective departments and visit to all the laboratories. Conducted bridge courses for all the 1st year subjects.

3.1. Additional four day lead India program for 2019-20 batch

The first objective of the program is to de stress the students who have joined the engineering stream. Lead India imparted courage in the students and taught them to see the society with empathy. The fourday program covered

- To be brave
- Greatness of India
- Patriotism
- Human Values, Mental development, Physical development
- Goal Setting &
- Soft, global and multifaceted Skills

The slogan of "Lead India" set by our former President of India. Dr. Abdul Kalam, and Dr. Sudershan Acharya is „Aap Bado Desh ko Badao". Which means: „You grow and be part of the national growth".Figure 1. Is the pledge of following the learnings by the participants.

Figure 1. Pledge to Lead India By Sreyas Staff & Students.

4.   STATISTICAL ANALYSIS

The affect of the orientation in the academic performance is evaluated by comparing the previous batch 2018-19 with 2019-210 batch first semester final university exam results. Table 1, gives the summary of the 2019-20 batch results and Table 2, for the 2018-19 batch. Overall there are eight subjects. The university specifies four subjects for circuit, (Mechanical & Civil) branches and four for non circuit, (ECE, CSE).

In the sum of marks the individual marks obtained by each student is added and a overall mean variance and standard deviation is obtained for each subject The maximum marks are for 100 in each subject.

Table 1: 2019-20 Batch, first semester results summary

2019-2020					
Subject	Total no. of students	Sum of marks	Mean	Variance	Standard deviation
Mathematics - I	562	32040	57.02	285.43	16.89
Engineering Physics	83	3880	46.75	161.85	12.72
Programming for Problem Solving	322	17070	53.02	209.59	14.48
Engineering Graphics	322	17800	55.28	267.37	16.35
Applied Physics	322	17800	55.28	195.37	13.98
Chemistry	240	13700	57.09	172.00	13.11
Basic Electrical Engineering	240	13745	57.28	197.44	14.05
English	240	15615	65.07	100.52	10.03
All Subject Marks	2331	131650	56.48	234.62	15.31

Table 2: 2018-19 Batch, first semester results summary

2018-2019					
Subject	Total no. of students	Sum of marks	Mean	Variance	Standarddeviation
Mathematics-1	620	32675	52.71	221.97	14.90
Engineering Physics	142	6415	45.18	108.66	10.42
Programming for Problem Solving	380	18015	47.41	220.85	14.86
Engineering Graphics	380	21190	55.77	246.92	15.71
Applied Physics	380	21190	55.77	228.29	15.11
Chemistry	240	12950	53.96	141.00	11.87
Basic Electrical Engineering	240	11800	49.17	107.64	10.37
English	240	15700	65.42	139.83	11.82
All Subject Marks	2622	139935	53.37	218.68	14.79

On comparison of subject wise means, the improvements can be seen in Mathematics1 from 52.71 to 57.02; Programming for problem solving from 47.41 to 53.02; Chemistry from 53.96 to 57.09; Basic Electrical Engineering from 49.17 to 57.28. In the other subjects Engineering Physics, Engineering Graphics, Applied Physics and English the mean values appear to be in similar range. To give a statistical significance a z- test is conducted as sample size 562 of the institute among the university population is high. The test follows a normal distribution given by Akella [9]. Sreyas student's sample is a random selection among all the JNTUH affiliated colleges.

4.1. Test for Significance (z-test) difference between the performances of students 2019-20 batch and2018-19 batch in their semester exam results. This test is conducted for All students Marks.

Null Hypothesis (H_0): There is no difference between the performance of studentsin 2019-20 and 2018-19 batch

Alternative Hypothesis (H_1): 2019-20 performance is better than 2018-19 batch in particular subject Mathematics-I (one tailed test)

Test Statistic:

$$Z = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\dfrac{\sigma_1^2}{n_1} + \dfrac{\sigma_2^2}{n_2}}} = \frac{56.48 - 53.37}{\sqrt{\dfrac{216.68}{2622} + \dfrac{234.62}{2331}}} = 7.29$$

Critical Value: $Z_\alpha = 2.33$ (5% Level of significance at one tailed test)

Since the calculated value is more than the critical value the alternative hypothesis is accepted. i.e.2019-20 batch performance is better than 2018-19 batch with 5% level of significance.

4.2 Test for Significance (z-test) between the performances of students in a particular subject Mathematics-1 (2019-20 batch and 2018-19 batch students) which has shown a difference in means is considered for this statistical evaluation.

Null Hypothesis (H_0): there is no difference between the performance of students in Mathematics-I, 2019-20 batch and 2018-19 batch

Alternative Hypothesis (H_1): 2019-20 performance is better than 2018-19 batch in Mathematics-I subject (one tailed test)

Test Statistic:

$$Z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\dfrac{\sigma_1^{\,2}}{n_1} + \dfrac{\sigma_2^{\,2}}{n_2}}} = \frac{57.02 - 52.71}{\sqrt{\dfrac{285.27}{562} + \dfrac{222.01}{620}}} = 4.63$$

Critical Region: $Z_\alpha = 2.33$ (5% Level of significance at one tailed test)

Since the calculated value is more than the critical value the alternative hypothesis is accepted. i.e. 2019-20 performance in Mathematics –I subject is better than 2018-19 batch with 5% level of significance.

5. CONCLUSION

The significant improvement has been observed and the students interest in education has been enhanced upon inducting the value education, ethics and morals.

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FEMINIST PERSPECTIVES IN MANJU KAPUR'S CUSTODY

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ABSTRACT
This paper attempts to explores issues like divorce, broken marriage and remarriage in upper middle class of urban Indian families in Manju Kapur's Custody. The suffering of women after their divorce, some focus battle for the custody of the children is shown in this research.The core finding of this research is that Ishita and Shagun manipulate both their kids for the sake of custody and for their welfare. Ishita needs Roohi as she can never bear a child of her own. Shagun, being the biological mother of Arjun and Roohi, claims their custody. The novel also reveals the unimagined uncertainties of marriage and gives an insight to go deeper into the heart of children who are torn between the crude and shrewd battle of their custody. In this battle of egos, Kapur has successfully presented the sufferings of innocent children, the complexities of life and different structures of values in her novel.

Key words: Manju Kapur , Feminist Issues

INTRODUCTION

Feminism is a range of social movements, political movements, and ideologies that aim to define and establish the political, economic, personal and social equality of the sexes. Feminist movements have campaigned and continue to campaign for women's rights. Feminist theory uses the conflict approach to examine the reinforcement of gender roles and inequalities. In patriarchal societies, the male's perspective and contributions are considered more valuable, resulting in the silencing and marginalization of the woman. So, feminism focuses on the theory of patriarchy as a system of power that organizes society into a complex of relationship based on the assertion of male supremacy.

The beginning of Indian Writing in English by women writers can hunt down to the last part of the nineteenth century. This advent is a significant breakthrough for feminism in India. Indian women came to know the Western culture, ideas, philosophy, literature and movements that were alluring and fascinating. They got a chance to exhibit their Indianness in the newly developed English language. Indian Writers of English have also come out of their cocoons and began to raise voice for the voiceless in their society. In particular feminists attempt to solve the issues of marginalized women. India has shifted from glorious past to degeneration, from spiritual dominance to communal clashes, from imprisonment to liberation etc.

Manju Kapur is a well-known novelist. She was born in Amristar in India in the year of 1948. She has received her M.A. in 1972 from Dalhousie University in Halifax, Canada. She has completed her M.Phil. from Delhi University and she has taught English at the same University. She has written five novels. In all of her novels she clearly shows her teaching experience and ability. In the novels of Manju Kapur, feminism can be traced out in different perspective in the so-called age of modernity. In the world of Literature, all of her novels have got great appreciation from the readers, the reviewers and the critical experts.She has explored the female status in family and the society. Family issues are the central theme of her all novels. She believes family situations, the nature of human relationship and persistence of human reality.

All the novels of Manju Kapur have the soul of modernity. Modernity is distinguished from freedom which is linked with Traditions, conventions and customs. Compassion, sympathy, sacrifice and culture loads are linked with womanhood. Kapur's unique sense of feminism in her novels is well displayed in her novels in outstanding manner. She presents human beings in the context of conflict, especially family conflict has been reorganized as the core issue of her novels. As a post-colonial writer, Manju Kapur considerably subsidized to the evolution of Indian Fiction. Instinctively she senses the position of women in the male dominated society and outlines the crisis of women. Her works not only portray women's hitches but also the social disputes such as freedom movement and partition etc. Her writings, highlights the problems of patriarchy, inter-religious marriage and family bond, and male-female bond, co-existence of past and present. She has narrated her women protagonist as a victim of biology, gender, domestic violence, and circumstances.

All the female characters of Manju Kapur are viewed as women striving against all odds. The intensity of feminism is obvious in her writing. This is clearly seen in the struggle of her woman characters, their vulnerability and quest for identity, attitude of liberation, the female psyche and the female biological world. Manju Kapur is regarded as a modern feminist. Through her artistic creativity, she presents new insight into the ambivalence of change in woman and man and human nature. She is convinced that freedom is deeply

connected to the abolition of poverty; therefore, she provides a platform of propagated against the evil of society. Kapur is brilliantly realistic because of her marvellous associate with the rural and urban life of India, particularly Southern part of India. It is admirable to be sure that in the broad range of her novels, she has effectively presented all most all the significant features and different colours of Indian receptivity throughout her novels. She has drawn the sensible characters and situation to represent the sensible change the world is going through. Kapur's keen sensitivity of realism and her influential thoughts that have gone a lengthy way to shape and style her vision of life within the confines of life in India. Her novels illustrate evidently a much broader variety, a greater reality of setting, character and affect, and really all embracing and persistent vision of Indian life. Her insight of Indian life as she bestowed in her novels is construct on her keen observation and dynamic creativity. She knows the real content of truth and how truths are containing and grasp in to art.

Manju kapur's first novel *Difficult Daughters* (1998), it has got appreciation from all type of readers. In South Asia, *Difficult Daughters* is the first best book so it awarded the Commonwealth Writer's Prize in 1999. *A Married Woman* (2003) is the second novel to her. It brings much more attention for her. *Home* (2006) is the third novel of her. *The Immigrant* (2009) is the fourth novel. Her fascinating fifth novel *Custody* (2011) was marked as her enormous achievement. Many critics regard this novel as a feministic novel; however, it covers all those facets of married and family life in Indian society which are correspondingly distressing as well as calming for everyone. Further this novel is not only curbed to man-woman relationship or the subjugation of feminine but also it delineates with the life of children of a broken family. The institution of marriage and the hollowness of modern matrimony is portrayed dolefully in this novel.These five novels have a background of urban in nature and catch the city life with sarcastic aloofness. The two different significances of modifies human relationship between men and women have been symbolized with detail and graphic surveillance in all her novels. Her works have a unique tone of universalization a plight from personal to universal, from innocence to experience in the so-called journey in this world.

In custody Manju Kapur has tried to explore the finer nuances of a divorce – both pre and post. The story takes us through the life of Raman, who works for the brand , a leading soft drinks manufacturing company. He has this respectable job, gets paid substantially, and leads a politely satisfied life with his beautiful wife Shagum, his smart teenager son Arjun and his adorable three year old daughter, Roohi. Parallelly, we are introduced to Ishita , who although not strikingly beautiful, is wise, kind and generous. Ishita gets married and leads a happy life, adapting to her new family, being everybody's favorite.

Raman, a dedicated employee, gets totally absorbed in his work and starts spending less time with his family. Shagum, after leading a happily married life so far, decides that she is fed up of being just a house -wife and now wants to start working. The entwine begins with the entry of Raman's bold and dashing boss-Ashok. For Ashok, it is love at first sight. He manages to some how persuade Shagun that an affair without the knowledge of her husband wouldn't harm anybody. But gradually the relationship begins to get serious and Shagun is forced to prefer.

Ishita on the other hand is diagnosed as sterile. The contentment in her married life slowly starts vanishing away. Her family's behaviour changes instantaneously and she ends up being a divorcee. She then begins to direct her energies into social work and leads a life at ease until she meets Raman. Shagun moves overseas, Raman refuses to divorce her and the case is moved to court, with each party trying to deprecate the other. As the title *Custody* suggests – here begins a crude battle for the responsibility of their children; a fatal game where the innocent children get trapped and are tattered between their two sets of parents who later re- marry.

Each character has a mindset, exclusive in its own way, reflecting the modern merits that we have been adapting. The author manages to generate an awe-inspiring atmosphere that reveals the various tragedies that a family can go possible melodrama. Manju Kapur delves deeper to give us an insight in to the mindsets of the children. How a teenager boy misses his father while he applies for admission in a new school, a school where his new step-father has been a legend. How a timid and clingy girl of three is coerced into believing that her mother loves her no more. Really it is a tragic experience for a small girl like her. How a brother is twisted against his sister. These incidents made the readers to think that our culture and traditional thinking change drastically in course of time.

Custody depicts her rebellion at the age -old traditions without being fractional to anybody. She has brought out two aspects of feminist perspectives in her novel- faithlessness and childlessness in the form of her two female protagonists, Shagun and Ishita respectively. It is also a story of child custody and the Indian legal system. Kapur captures the lives of wealthy, urban middle- class Indians with their upsetting secrets, dysfunctional relationships, their longing for wealth, autonomy and harmony.

FEMALE DOMINATION IN *CUSTODY*

This novel portrays the conflict between the parents for the possession of their children and the ways in which modern Indian women aspire for independence. It clearly narrates the sorrows and assures of two women characters, Shagun and Ishita, and their various efforts to achieve fulfilment. Shagun the protagonist of the novel is bold enough to choose a good lifestyle in order to create her own space in the world, fearing no one. She is a middle-class woman, the wife of Raman, a corporate advertiser. Feeling bored, alienated and attracted towards modernity, Shagun the mother of two children, develops an extra marital affair with Ashok Khanna. Since her teens, Shagun had an infinite number of boys and she was looking forward to the freedom marriage would provide.

To demonstrate the performative operations of interpellation, Judith Butler cites a cartoon strip. In this strip, an infant is assigned its place in the sex-gender system with the exclamation that it's a lesbian. This illustration of Butler is cited below:

Far from an essentialist joke, the queer appropriation of the performative mimes and exposes both the binding power of the heterosexualizing law and its expropriability. Readers will return to expropriability and citation shortly. Here the point to note is that, since sexual and gendered differences are performatively installed by and in 6 discourses, it would be possible to designate or confer identity on the excluded gender.

The body is not visibly black. The baby, Clare, is only ousted when her white husband encounters her among a group of black people. Butler uses passing to confirm her point that race and sexuality are embedded and implicated. She discerns an overlapping of the mute homosexuality between the two women protagonists. Moreover, just as heterosexuality requires homosexuality in order to constitute its coherence. Whiteness requires blackness to offset itself. It confirms its racial boundaries.

Shagun reflects that woman now has stimulated to the core and has become a vital part in the society. It demonstrates illicit relationship between Shagun and her husband's boss Ashok Khanna who uses this sexual freedom as an instrument of resistance to patriarchal myths and values. This novel also depicts a female character Shagun who rejoicing her sexuality and appropriates its generative belief through a consciousness of patriarchal principles. Her sexuality is a dome of happiness and outfit in which she is empowered to employ her body for herself. She defies the male subjugated and patriarchal system of observation and control. She convenes Ashok Khanna, a business man who is attracted by her beauty.

According to Shagun love with Ashok is an experience to fulfill all her unfulfilled desires of her college days. Ishita went to hospital to diagnose her problem of infertility. Ishita shove from healer to seer, herbalist to hospital restlessly looking for some decision, obsessed with optimism, doubt and desolation. So, the greatest component of her infancy is shattered in the chase to accomplish motherhood. Her infertile issue makes in her marriage with snowed under her anxiety, social disgrace emotional abuse and psychological stress.

The novel describes the reality that in a conventional society woman faces disgrace due to her infertile body. Suryakanta is ready to give her divorce who was once did not live without her for a second, meanwhile Ishita thrown out from her in-law house. She undergoes with ethereal as she is penalized for her imperfect body. According to Simone de Beauvoir, the woman is "defined and differentiated with reference to man and with reference to her; she is the incidental, the inessential as opposed to the essential. He is the Subject; he is the Absolute she is the Other". Man, always thinks that he is in the right, while woman is in the wrong; all the negative qualities are assigned to her. He is afraid of feminine competition. De Beauvoir discusses about the topics like sexual initiation, sexual pleasure for women.

She states that woman is not a free agent in choosing the man of her erotic destiny. Man is never consistent; he wants his wife to be passionate with him but indifferent to other men as a whole. He wants her to be entirely his. Thus, she is betrayed from the day he marries her. Bound to one man, with children to tend, woman's life is over. She finds no future other than of her husband's. De Beauvoir says that the bond between man and woman should be based on common love and consent. She also deals with different issues such as unwanted motherhood, the unmarried mother and abortion. She concludes that women should be freed from the bonds of slavery.

REPRESENTATION OF INDIAN MODERN WOMAN

Custody is not only about infertility but also the issue of divorce, dichotomy of modern society, and relationship between parents and child and aspires for freedom also. It is entirely representation of Indian Modern woman, who tiled new path in the peripheral world. She demonstrates the new woman is rising in modern Indian society. This novel shows that woman should make an effort to realize and detain herself as a human being and

not just as an attachment to some male life. *Custody* discloses the deviations; modernity is leading in our society, and the hollowness of modern life. It also exposes the life of Metropolitan cities where people have become the victims of modernity.Raman gets attracted towards Shagun because of her extraordinary beauty. They fall in love with each other. Subsequently, when Ashok offers her to act as a model in and for the Brand, she agrees hastily, with a hope that it may offer her a chance to be a model and fulfil her dream. Thus Ashok, too much marvelled by Shagun"s looks, begins executing his plan of wooing her. Shagun starts the affair with Ashok just to add adventure to her monotonous life, but is dragged more and more into it. He desires to own her from the day he meets her. As soon as he possessed her, this strange hiatus in his life would be over.

The definition of the term feminism differs from person to person. According to the French models of feminism, it implies sexual expression. If we take into account the British models, all feminists slowly become respectable, or acclaimed into the male world order. If we consider American models, they are more outspoken.

Shagun had never thought of divorcing Raman or leaving her children to marry Ashok. When she started her affair, she had thought a lover would add to her experience, make up for all the things she had missed having married straight out of college. But Ashok, smart enough to manipulate people in his life as well as in his job, is determined to marry Shagun and take her with him when posted in New York. A son is considered to be the heir of the family, whereas daughter is taken as a burden. Shagun gets a significant status by giving birth to a baby boy. It's a bitter fact of our Indian society; when a son is born the need for daughter is not felt about, when a daughter is born people keep trying until they are blessed with a son. Hemant insists Astha for keeping on trying till the time they are blessed with a son. Jaidev explains in the article Problematizing Feminism as: Indeed, any sophisticated system today operates not by a direct and visible exploitation of people but by making they retain an illusion of freedom and free choice, by making them willingly give into its imperatives, and by subtly ensuring that they do not see that they are dupes or victims. It describes the inconsistency of relations through the incidents narrated in the novel. For getting his kids back, Raman can go to whatever extent, thus he files the lawsuit according to Nandan's instructions. He makes it clear that the case may go for a long period, but at least he will have visitation rights after filing the case and he will be able to meet and pass time with his children.

Throughout the novel, the sufferings and exploitation of children, which arise because of their parents" decisions. An increased rate of depression is noticed in the children, separated from their parents, because of marital problems and divorce. The children of divorced parents suffer more psychological problems than the children whose parents are not dissociated. It is not sure how far these problems precede the divorce and are related to disharmony between the parents or to the conduct of one or both parents that contributed to the conclusion of divorce.

Through Arjun, the writer depicts the side-effects of divorce on the mind and the body of the children. The separation of parents affects Arjun's life. Arjun starts complaining about his stomach pain, leg pain and refuses to go to school. His performance also falls in school, though he has perpetually been a superb student, but at present he is faring poorly in his academics. Raman used to teach Arjun for his class test and examinations. Shagun forgets the timetable of Arjun's test because of so many incidents happening in her life. Arjun. Arjun's behaviour changes badly, he forges his mother's signature on his test papers, pinches Roohi whenever he wants his mother's care. He knows if Roohi cries, his mother will come to their room.

Arjun is jealous of Ashok because he completely possesses Shagun's attention. Arjun's behaviour hurts Shagun, she knows the reason but she can't help him with that. Arjun has to learn to live without Raman. Simone de Beauvoir in her book The Second Sex argues that: One is not born, but rather becomes a woman. No biological, psychological or economic fate determines the figure that the human female presents in society; it is civilization as a whole that produces this creature, intermediate between male and eunuch, which is described as feminine. According to her, women are considered secondary in relation to men from the ancient time. It is not necessity of feminine feature but it is the result of education and social tradition under the control of men. Women's dignity failed but they stand on the same ground of intellectual and professional equality. This has given rise to social evils also.

Ashok suggests Shagun to send Arjun to boarding school for a change of environment. Shagun is hurt about everything Ashok says about Arjun .She understood he could never feel for the boy, it was her fault for leaving the child's father, she would pay for her sins for the rest of her life. She tries in every possible way to convince Arjun to attend his classes, but he is determined not to change his mind. Eventually Shagun considers the option, Ashok has suggested her, and conveys her son about sending him to Dehradun Public Academy boarding school. Arjun shows no interest in any suggestion, related to his studies and school. Arjun turned his head away. She stared at his back, Ashok had said, don't push, just drop the idea in his head, this is not going to

work if he doesn't want to go. And leave him alone, don't entertain him, don't mollycoddle him. Someone else was determining, directing, and deciding. It felt strange but her own method had failed. The idea looks like a sound one to Arjun of going to a place where no one will know his parents' separation; where he will not suffer to read pity and curiosity in the eyes of people around him and tolerate to avoid friends. But he is also insecure to leave his mother in Delhi with Ashok. He was afraid of leaving his mother with that man. Though Shagun behaves as the shifting from Raman Kaushik's life to Ashok Khanna's is as natural as changing clothes, but Arjun is not comfortable living with Ashok, a stranger who rarely talks to him and agrees to prepare for entrance exam.

Raman informs Nandan about Arjun who is leaving VV, one of the best schools in Delhi and going to DPA, a boarding school. Nandan enquires whether Arjun is willing to go, but how can Raman explain. But he is too sensitive about his children to expose them to any odd situation.So he files a case against Shagun for sending Arjun to DPA with a complaint that Shagun wants to keep the child away from his father. Raman gets hurt to realize the ignorance of his own son. He knows that all this is because of the manipulation and deviousness of Shagun. She wants to send Arjun permanently away from Raman to take revenge because of his denial of divorce. Ashok has stolen the essence of his family and Raman hates Ashok for this, as well as Shagun. Raman has always been a good father and thus he is granted visitation rights by the court. Raman is partially relieved that he at least can meet his children on weekends.

Manju kapur's women are no longer restricted within the four walls of the family and conventional values. They have the courage to break down the conventional perceptions and dogmas of the patriarchal society or the bonds of incompatible marriage. In their pursuit for identity the bold women characters of Kapur are presented by her as real women of flesh and blood who have their own emotions and sentiments.They also desire to be a part of the intellectual movements of the day,trying to establish their identity. Shagun tried to be honest with her love and life which means to revolution. Ishita on the other hand, stigmatized of infertility hopes to find a fresh life in Raman's broken family. She unhesitantly accepts Raman's daughter Roohi as her own child and showers love on the small child. Kapur doesn't hesitate to tell that woman like Ishita also exist in today's world who believes in showering love to family and remain happy being the guardian of other's children. On the other hand, Shagun's character is projected as an independent woman who dared to stray for lost identity. Kapur tries to bring both her protagonists from the marginal position assigned to her. They do not attain liberation through wider occupations or feministic revolts, but through deviational behaviour pattern depicting a process of psychological and spiritual aspect.

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AN EFFICIENT CLUSTER BASED ROUTING PROTOCOL (ECCRP)TECHNIQUE BASED ON WEIGHTED CLUSTERING ALGORITHM FOR DIFFERENT TOPOLOGIES IN MANETS USING NETWORK CODING

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ABSTRACT

All nodes are energy constrained in MANET. In such a scenario, reducing energy consumption is necessary. The goal of this study is to minimize the energy utilization of various types and environments in MANETs using network coding in a CBRP. Consider other CBRP such as energy-efficient unmanned aerial vehicle fitness (EEFUAV) and compare its performance with the ECCRP and CBRP by taking into account node mobility, traffic and transmission range. Network coding is a way to enhance the efficiency of wireless networks. Energy Requirements, of the EEFUAV approach is intended to be developed to improve the performance of the CBRP and Energy ECCRP.

Keyword- Effective cluster-based routing protocol (ECCRP), clustered-based routing protocol (CBRP), energy-efficient fitness of unmanned aerial vehicles (EEFUAV) Mobile adhoc networks (MANET).

I. INTRODUCTION

MANET (Mobile adhoc networks) [1] are essential when infrastructure does not exist or is difficult to set up. They are ideal for disaster recovery, remote place search and rescue, battle fields, patient tracking, Bluetooth, alarms, cyclone evolution research, earthquake detection, interactive museums or toys, public building safety, and object location. MANET make it easier for users to communicate without any physical infrastructure. It requires the construction of a temporary network without wires, and no administrative interference. Figure 1 shows MANET with five nodes.

In MANET, each node functioning as the router and host to forward data packets. The nodes are able to move randomly. The most significant networking considerations in a broad scale of the networking domain is the self-organizing capacity to respond complex circumstances well and the capacity for contact between the nodes [2].Protocol design is the major issue of such studies, particularly in this regard, energy efficiency. Many researchers have established different network layer routing protocols, but when routing data packets to the destination, they have considered transmitting energy, residual battery capacity, and self- organization [3].The lifespan of the network depends on energy resource management. The ability to use less power in the routing process has more advantages than saving the node's battery power [4]. A number of research efforts [5] have been made to develop energy efficient routing protocols in MANETs. They found two methods called minimizing active communication energy and inactive communication energy. Transmission power control and load balanced approaches are used to minimize the active communication energy. Sleep down mode is used to minimize the energy of inactive communication. The work above considers energy-efficient communication problems in MANETs without network coding. The goal of this paper is to use network coding techniques to minimize routing protocol energy consumption. My objective is to minimize CBRP energy consumption by integrating network coding technologies into the CBRP [6] protocol. Network coding is a popular mechanism for increasing the throughput of wireless networks. Performs the mixing of packets at intermediate nodes. It therefore reduces the number of packet transmissions and therefore also reduces the amount of redundant transmissions that occur as a result of broadcasting. The transmission of each packet absorbs energy and the consumption of energy is proportional to the number of packets transmitted. Cluster-based approach is used to reduce overall broadcast overhead. Cluster heads help prevent unnecessary network-wide flooding of MANETs. COPE [7] is the first protocol to implement the coding of wireless networks. In COPE, coding can be carried out at all nodes in the network to increase coding opportunities. It thus causes extra overhead computing. In order to reduce this overhead, to reduce the number of coding nodes, I apply network coding only to specific nodes. It is possible to perform this network coding at cluster heads. I use the CBRP to identify these cluster heads.

To minimize overhead coding and reduce redundant transmissions, I apply network coding to cluster heads, thereby reducing the number of transmissions. The energy consumption involved in the sending and receiving of packet transmissions is therefore minimized.
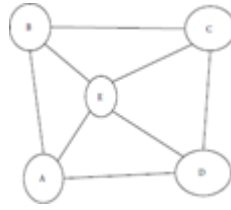
Fig.1: Mobile ad hoc network.

A network coding-aware energy-efficient fitness unmanned aerial vehicles (EEFUAV) for MANETs is introduced in this article. In the following respects, my job is distinct from current ones. Next, the nodes of the network are organized into clusters. In order to increase the life of the network and reduce energy consumption, I choose the cluster head as an energy-rich node. Network coding is then done only at cluster heads to reduce network coding overhead issues. Second, I change the queue layout of COPE when performing coding on cluster heads. I use a flow-based queue structure to maximize coding possibilities and decrease the number of transmissions, which helps to reduce energy consumption. The remainder of the paper is arranged as follows: In Section 2, Objectives of research work and implementation. In Section 3, Analysis of the proposed algorithm using simulation results. Finally, Section 4 summarizes the conclusions.

II.   OBJECTIVES OF RESEARCH WORK AND IMPLEMENTATION

To reduce the energy consumption of routing protocols, I aim to apply network coding technology. My aim is to minimize CBRP energy consumption by checking various CBRP [6] protocol and ECCRP protocol network topology technologies.

The proposed research will focus on developing multi-objective energy efficient routing protocol with the following objectives,

1.   To maximize network energy lifetime by avoiding nodes with little energy.

2.   To achieve link stability.

3.   To assure secure communication by integrating trust.

4.   To develop a security mechanism to reduce the effect of routing denial of service attack.

The research will be carried out using analytical and mathematical modeling along with simulations. The research objective is to develop routing protocol, which will be multi-objective, energy efficient and secure for MANET applications.

Implementation code

An Energy Efficient Framework for UAV-Assisted Millimeter Wave 5G Heterogeneous Cellular Networks

//Field Dimensions - x and y maximum (in meters)xm=100;

ym=100;

x and y //Coordinates of the Sink//sink.x=1.5*xm;

sink.y=0.5*ym;

//Number of Nodes in the field//n=200;

//Optimal Election Probability of a nodeto become cluster head//

p=0.2;

//Energy Model (all values in Joules)Initial Energy//

Eo=0.5;

Eelec=Etx=Erx ETX=50*0.000000001;ERX=50*0.000000001;

Transmit Amplifier types Efs=10*0.00000000001; Emp=0.0013*0.00000000001;

Data Aggregation EnergyEDA=5*0.000000001;

Values for Hetereogeneity

Percentage of nodes than are advancedm=0.2;

alphaa=1;

maximum number of roundsrmax=10;

III. RESULT AND ANALYSIS

The result of the research to various inputs is given in this chapter. In order to assess my proposed method. My research were conducted using MATLAB software. I observe energy consumption in sending, receiving, idle, and sleep mode. I executed the simulation for different number of nodes. The performance of the proposed EEFUAV protocol is compared with that of original CBRP protocol and ECCRP protocol. I simulate CBRP, ECCRP and EEFUAV by using MATLAB. Since I consider the effect of clustering on energy consumption, I primarily add the network layer and take into account the energy consumed. Each packet has a size of 128 bytes and a rate of transmission of 250 kbps. The simulation area is 3 km x 3 km in size and nodes are randomly included in it.
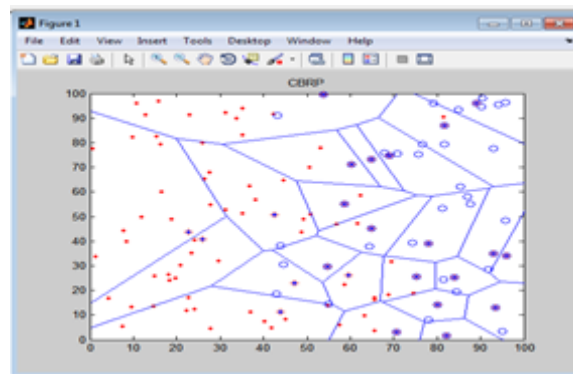
Fig 2: shows generating the initial nodes (CBRP)
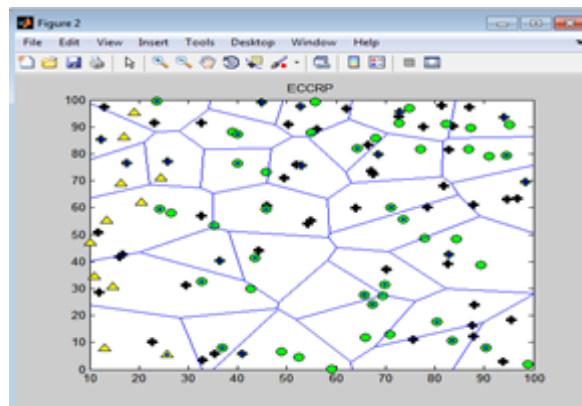
Fig 3: shows generating the initial nodes (ECCRP)
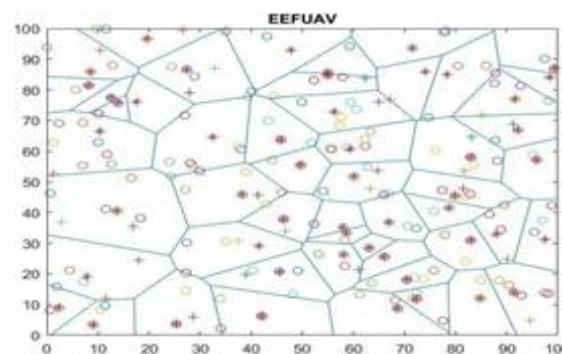
Fig 4: shows generating the initial nodes (EEFUAV)

3.1. Nodes' energy consumption. Within the given region, I consider 30 sources out of 60 nodes and the number of packets sent from 5 to 60 packets/s. Each node travels at a speed of 0-20 m/s and the simulation model has been executed 20 times. Each node is initialized at 510 J and the simulation has been completed for 1000 s. Figure 4 indicates this number of nodes with zero residual energy versus simulation time. The EEFUAV absorbs less energy relative to both the CBRP and ECCRP as the simulation time increases. In the proposed EEFUAV algorithm, the number of nodes with zero remaining energy at 700s is 41 nodes in the CBRP and ECCRP, respectively, as shown in Figure 2 and Figure 3. Here proportional to the number of transmissions. I

simulated the CBRP protocol, ECCRP and EEFUAV protocols here. Figures display the average energy consumption in the route search versus the number of network nodes at different nodes. I found that as the number of nodes increases energy consumption, the results show that EEFUAV algorithms are better than CBRP and ECCRP algorithms.

3.2 Energy Consumption. The amount of energy consumed is taken into account compared to the number of transmissions. I simulated the CBRP protocol, ECCRP and EEFUAV protocols here. Figure 5 shows the average energy usage for the identification of routes versus the number of network nodes at different nodes. From the results, I observed that energy consumption increases as the number of nodes increases and EEFUAV algorithm performance is better than CBRP and ECCRP algorithm performance.
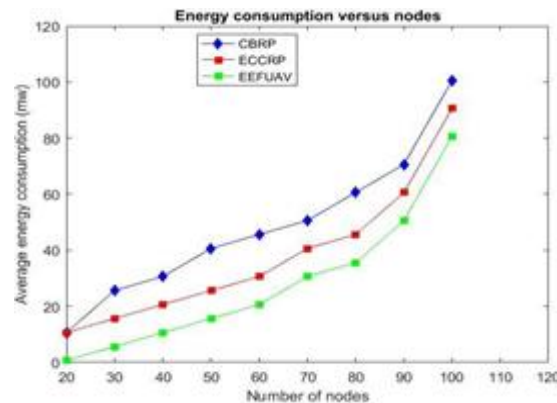
Fig 5: shows energy consumption versus nodes for CBRP, ECCRP AND EEFUAV

3.3 Energy Consumption versus Simulation Time. The energy consumed versus simulation time on the network is shown in Fig.6. As the simulation time increases, energy consumption increases and CBRP and ECCRP consume more energy, In order to minimize the number of transmissions, EEFUAV consumes less energy as it conducts network coding at the cluster heads. So the propagation of the total network packets requires less energy.
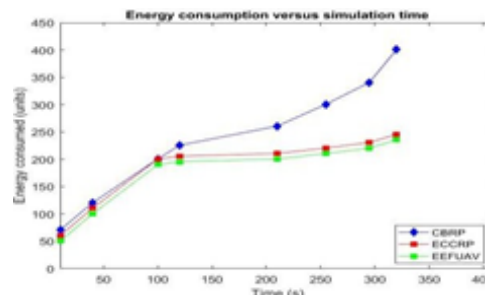
Fig 6: shows energy consumption versus simulation time

3.4 Data Packets Reached to Destination. In order to assess how these energy savings would impact the lifespan of the network when the EEFUAV protocol is used, each node was given an initial energy of 20 joules. The simulations were run for 5000 s in order to ensure that nodes ran out of resources. Fig.7 indicates the number of data packets successfully sent to destinations. It is obvious that, relative to the CBRP and ECCRP protocols, the amount of packets transmitted successfully to the destination using the EEFUAV protocol was high.
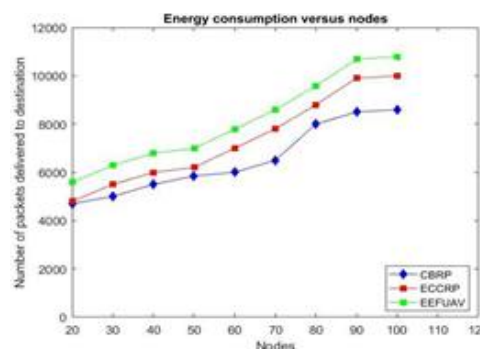
Fig 7: Number of packets delivered to destination for CBRP, ECCRP and EEFUAV

IV. CONCLUSION

In this work, I proposed an EEFUAV technique, designed to improve the performance of CBRP and EECRP in terms of energy consumption. EEFUAV makes use of an algorithm for Weighted Clustering. It ensures that the best cluster head is selected and increases the lifespan of the cluster by reducing energy consumption. In order to minimize the number of transmissions and further reduce energy consumption, network coding is used on cluster heads. I have used the structure of flow-based queues when conducting intermediate node coding to increase coding possibilities.

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THE IMPACT OF JOB ROTATION ON ORGANIZATIONAL COMMITMENT AND EMPLOYEE DEPENDENTS

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ABSTRACT

The aim of this study was to analyze the consequences of job rotation on organizational commitment, job effort and job-to-dependents enhancement. There is substantial research on the consequences of job rotation on passive job performance, such as organizational commitment. However, studies analyzing job rotation on active performance, such as job effort, and outside job, such as job-to-dependents enhancement, are scarce. Two dimensions of job rotation are considered: powerlessness and meaninglessness. Hypotheses are tested using surveys collected among a national sample of midwives in the India (respondents: 790, response rate 61%).Findings indicate that job rotation (powerlessness and meaninglessness) influence organizational commitment, job effort and – to a lesser extent - job-to-dependents enhancement. High job meaninglessness, in particular, has negative consequences on these outcomes. When people feel that they have no influence in their job (hence, when they feel 'powerless') and especially when the feel that their job is not worthwhile (when they feel 'meaningless'), this has substantial negative consequences.

Keywords: Job rotation, autonomy, , job-dependents, organizational commitment, job effort

INTRODUCTION

This study analyzes the consequences of two dimensions of job rotation – powerlessness and meaninglessness - among employees. It focuses especially on midwives. Midwifery is often described as a calling (Carolan & Kruger, 2010; Skinner et al., 2011; Ulrich, 2009). But what happens when midwives feel that their job has no meaning and that they are powerless while doing it? In the India midwifery is an independent autonomous occupation, which promotes home birth. However, recently the medicalization of birth has increased and the practice of home birth has been criticized within public and scientific debates challenging the autonomous position of midwives (Christiaens et al., 2013) and possibly the meaningfulness of their job.To date, substantial research has focused on the consequences of job rotation on passive job performance, such as job satisfaction and organizational commitment (Clark et al., 2010; Hirschfeld et al., 2000; McKinlay & Marceau, 2011; Sulu et al., 2010). Passive performance indicators aim primarily at the functioning of the organization as it is at that present moment, where tasks are given. Conversely, active job performance focuses on self-starting and proactive behavior, going beyond given tasks (for an overview of the differences between active and passive performance, see Frese & Fay, 2001). Passive performance indicators are only one aspect of performance. For instance, a passive performance indicator is job satisfaction. An employee can be very satisfied, but can do only what he or she is supposed to do, not 'going the extra mile'. The consequences of job rotation on active performance - such as pro-activity or job effort - are understudied. This could be problematic, given that midwifery is often seen as a profession requiring high job effort and proactivity (Green, 2008). This study therefore explores the influence of job rotation among midwives on an active performance indicator: job effort.

Objectives of the study
1. To know the impact of job rotation on employee paradigm
2. To analyze the conditions of employee dependent
3. To understand the aftereffects of job rotation

The hypothetical questions
H1: Job rotation will be negatively related to passive performance at job (organizational commitment).

H2: Job rotation will be negatively related to active performance at job (job effort).

LITERATURE REVIEW
Allen, N. J., & Meyer, J. P.(2010)This study also analyzes whether job rotation influences job-to-dependents enhancement. Most scholarly literature has analyzed the relation between job and dependents from a rather pejorative perspective: job and dependents can conflict with each other, they are sometimes incompatible and their dual existence generates stress and exhaustion.

Amstad, F. T., Meier, L. L.,Fasel, U.,Elfering, A., & Semmer, N. K.(2012).The conflict approach is based on the 'scarcity hypothesis': the idea that people have a finite amount of time and energy, and that job and dependents compete for these resources (for examples in nursing and midwifery studies.

Munir et al., 2011; Skinner et al., 2011) Recently, however, scholars emphasize that job and dependents can also have positive interdependencies. Success at job can increase someone's self-worth, which can increase the quality of life in other life domains (Greenhaus & Powell, 2006). This is known as job-to-dependents enhancement.

Appelbaum, E.,Bailey, T.,Berg, P., & Kalleberg, A. (2015). Enabling resources are, for instance, skills and abilities learned at job. Psychological rewards are associated with feelings of esteemed and valued or meaningful job. This study focuses on the affective dimension of job-dependents enhancement defined as "when involvement in job results in a positive emotional state or attitude which helps the individual to be a better dependents member.

(Carlson et al., 2006:140). Job rotation may create a negative emotional state and consequently decreases the likelihood that job-to-dependents enhancement occurs. This brings us to the third, and last, hypothesis:

H3: Job rotation will be negatively related to life outside job (job-to-dependents enhancement).

METHOD
The impact of job rotation on organizational commitment, job effort and job-to-dependents enhancement was tested using a survey of Dutch midwives. A sample of 1,278 midwives was used, based on the databases of the nationwide associations for midwives (KNOV) and midwife ultrasound specialists (BEN). The midwives were asked to respond to the survey using an introductory email and two reminders. Furthermore, a student-assistant contacted midwives via telephone to stimulate them to fill in the survey. Based on these efforts, 790 midwives returned the questionnaire, a 61% response rate. Midwives who did not complete the survey were asked for reasons (a non-response research). The most important reasons were current job load and the fact that they had already filled out several surveys.

Of the valid respondents, 3% were men and 97% women. This balance is consistent with Dutch averages for midwives, which can be considered a traditional female occupation. According to a yearly national survey, 98% of the jobforce in this profession are women (Hingstman & Kenens, 2011). The respondents' average age was 40, which is comparable to the Dutch national average for this group being 37 (Hingstman & Kenens, 2011). On average, the respondents jobbed as a midwife for 15 years. Of the respondents, 32% followed a specialization for ultrasound specialist, meaning that they were able to conduct elaborate ultrasounds to examine the health of the child. Regarding the education level, very few had a degree below Higher Professional Education (1%), most of them (88%) received a degree from Higher Professional Education, and some were trained at a University (11%). Lastly, 20% of the respondents had a managing position.

The large number of respondents, their characteristics in terms of gender and age and the results of the non-response research indicate that our respondents are quite a good representation of the population.

Measures
All items use five point Likert-scales, ranging from strongly disagree to strongly agree, unless stated otherwise.

Job rotation – Powerlessness Job powerlessness was measured using the 7-item scale developed by Mottaz (1981). Sample items were "My daily tasks are largely determined by others" and "I have a good deal of freedom in the performance of my daily task" (R). The Cronbach's alpha was .77.

Job rotation – Meaninglessness
Job meaninglessness was measured using the 7-item meaninglessness scale of Mottaz (1981). Sample items were "Sometimes I am not sure I completely understand the purpose of what I'm doing", "I often wonder what the importance of my job really is" and "My job is really important and worthwhile" (R). In the current study, the Cronbach's alpha was .85.

Organizational commitment
The 8-item scale of affective organizational commitment, as developed by Allen and Meyer (1990) was used. Example items are "'I would be happy to spend the rest of my career at my organization" and "I really feel as if this organization's problems are my own". The Cronbach's alpha was .85.

Job effort

In order to study job effort, we used the scale as developed by Gould-Williams (2004), who developed an 8-item measure to capture employee discretionary effort. Sample items are "I stay late if necessary to help out" and "I volunteer for things that are not part of the job". The scale's Cronbach's alpha was .76.Job-to-dependents enhancement (Affective) job-to-dependents enhancement was measured using the 3-item scale of Carlson (2006). Sample items are "My involvement in my job puts me in a good mood and this helps me be a better dependents member" and "My involvement in my job makes me cheerful and this helps me be a better dependents member". The Cronbach's alpha was .74.

Control variables

Alongside the variables described above, control variables were used: gender, age, children at home (yes/no), management position (yes/no) and level of education, where 1=elementary school,Overall, respondents reported a low level of job meaninglessness and powerlessness, suggesting that midwives in our sample experience on average little job rotation, although there is variation amongst the scores. In general, midwives reported relatively high levels of job-to-dependents enhancement and job effort, and moderate levels of organizational commitment and job pressure. Furthermore, the Table shows that all bivariate correlations for the variables linked through the hypotheses were statistically significant and in the anticipated direction. For example, job meaninglessness was negatively related to job effort.

The consequences of job rotation

Multiple regression analyses were conducted to examine hypotheses 1-3. The results are shown in Table 2. Hypothesis 1 states that job rotation will be negatively related to passive performance at job (organizational commitment). Job powerlessness and meaninglessness both have a significant negative influence on organizational commitment of employees (β=-.16, p<.01, respectively β=-.38, p<.01). This means that when midwives feel that their job is meaningless and have no power over their job, they will be less committed to the organization. More in general, it can be concluded that midwives in general do not feel alienated (based on the low average scores), but when they do, they will be less committed to their organization.

Hypothesis 2 states that the dimensions of job rotation will influence the degree of job effort. The data indeed shows that this is the case for both dimensions. When midwives feel that their job has no meaning, they are less inclined to put effort in their job (β=-.28, p<.01). In addition, when midwives feel powerless at job, they are also less inclined to put effort in their job (β=-.13, p<.01).

The third hypothesis examines the consequences of job rotation on job-to-dependents enhancement. We expected that job rotation will negatively influence job-to-dependents enhancement. This proved to be the case for job meaninglessness. When the midwives felt that their job was not important and worthwhile, they experienced less positive spill-over consequences from job to their dependents life (β=-.25, p<.01). No effect was found for job powerlessness.

Table: 1 Regression analyses for consequences of job rotation on organizational commitment, job effort and job-life enhancement (n=790)

	Effect 1 – Organization	Effect 2 – Job effort	Effect 3 – Job-to-dependents
Job otation			
Job powerlessness	**-.16****	**-.16****	.03
Job meaninglessness	**-.38****	**-.38****	**-.25****
Control variables			
Female (male=ref.cat.)	-.05	.02	.03
Age	.04	.05	-.05
Education: Intermediate Vocational	.01	.05	-.01
Education or secondary education			
Education: Higher Vocational Education	.02	-.04	-.03
Managing position (Non-managing = ref. cat.)	.06	**.16****	.05

Children at home (no=ref.cat.)		-.05	**.10***
Job pressure	-.03	**.09***	**-.24****
Overall R^2	**.24****	**.18****	**.13****

The following criteria are met for all three regression analyses (see Field, 2015):

Criterion of independent residuals (Durbin-Watson 1.9/2.1/2.0,1<criterion<3).Criterion of no multi co- linearity (no VIF values above 10 and average close to 1,for all regressions). No exclusion of influential outlying cases was required (using case wise diagnostics: 3,1%/ 2,5%/1,8% above standardized residual >|2|, Cook's distance max.05/.11/.57 (criterion < 1). Criteria of homoscedasticity and normality met.

Note: Standardized beta coefficients are presented. * p < .05 ** p < .01.

Besides the influence of job rotation on active and passive job performance and job-to-dependents enhancement, other striking results were found. First, having a managerial position positively impacts the effort midwives put in their job (β=.16, p<.01). Secondly, job pressure positively impacts job effort. This suggests that the more job pressure midwives experience the more effort they put into their job (see also Bakker & Demerouti, 2008). Also in relation to job-to-dependents enhancement job pressure is a relevant factor: the more job pressure midwives experience the less job-to-dependents enhancement they report (see also Valcour, 2007). On the other hand, having children at home increases job-to-dependents enhancement, although the effect is small (β=.10, p<.05).

CONCLUSIONS AND DISCUSSION

The main goal of this article was to analyze the consequences of job rotation among midwives on their a) passive job performance (organizational commitment), b) active job performance (job effort) and c) outside job (job-to-dependents enhancement). In this way, we could determine whether job rotation had strong consequences on different levels and thereby underscore (or nuance) the usefulness of the job rotation concept. Hypotheses were constructed for examining the consequences of job rotation. These hypotheses were tested using a survey of 790 Dutch midwives. We showed that job meaninglessness in particular had a strong influence on organizational commitment, job effort and job-to-dependents enhancement. The first conclusion is that job rotation could be a useful concept when studying the experiences of midwives within their job, especially given the strong consequences of the meaninglessness dimensions on different outcome indicators. This is based on the results, where we found that when midwives feel alienated from their job, this negatively influences the effort they put into their job, their commitment to the organization and their job-to-dependents enhancement. Given the outcomes of this study, it can be argued that the concept of rotation remains an important concept in organization studies. Other studies confirm that the concept of rotation has the potential to help to understand why health care jobbers may feel less committed or discontent with their job (McKinley & Marceau, 2011).

Secondly, apart from highlighting the usefulness of the rotation concept, we also urge scholars to conceptualize and measure different dimensions of rotation, as we found that the different dimensions can have different impacts (cf. Pandey & Scott, 2002). We found that in particular the dimension of job meaninglessness mattered among midwives. For every effect, the meaninglessness dimension was more important than the powerlessness dimension. For instance, when midwives experience that their job becomes more meaningless, this will have a far greater effect than when they experience more powerlessness (given that their standard deviations are approximately equal, which is the case). This finding emphasizes that for midwives a sense of meaning with their job is highly important. Many studies in HRM, organization studies and studies on jobing conditions of health care jobers look at the degree of powerlessness, or autonomy, people have in the way they do their job or in general decision making (De Jonge & Schaufeli, 1998; Green, 2008; Spence Laschinger et al., 2001). However, given the results of this study, we urge scholars to center their attention on the perceived meaninglessness/meaningfulness of job, rather than to restrict their focus on power aspects. When studying meaninglessness among health care jobbers, such as midwives, the question needs to be raised why midwives experience less meaning in their job. As noted in the introduction regarding the medicalization of health care, it could be the case that they think that their job should be done by more qualified people, such as gynecologists. This is especially relevant in the India, where historically midwives play a very dominant role in the guidance process of pregnancy and child delivery, as women predominantly give birth at home and midwives assist them in this process. Nowadays, the midwifery profession is continually discussed (Christiaens et al., 2013). For instance, there is debate about the risks of child delivery at home (Croonen, 2014). Gynaecologists point to these risks and prefer speedier referral to medical experts, with a hospital delivery. It could be the case that

midwifes therefore feel their job is less meaningful, as it could involve more risks for the mother and child. Furthermore, Dutch midwives experience policy pressures as they have to implement a somewhat controversial policy known as 'structural ultrasound assessment'. When a woman is 20-22 weeks pregnant, she visits a midwife who, using ultrasound techniques, examines the unborn child. The midwife examines the health of the child, especially its physical development. In this way, defects may be detected which sometimes can be treated before the child is born. Furthermore, in the India, parents can decide to have an abortion based on these ultrasound results. Some midwives experience this as a very negative aspect of the policy (Tummers, 2013). Hence, some factors could possibly explain the meaninglessness felt by midwives. It would be worthwhile for scholars to study this in depth, using both qualitative and quantitative techniques.

This brings us to the limitations and future research suggestions. An area for further research would be to test the proposed model in other professions, such as nurses or general practitioners. A comparative approach might job adequately, examining different professions in various countries. Furthermore, in this research the role of the practice environment (and more general, the organization) was not take into account. It could be worthwhile to include these contextual variables into account for explaining the relationship between job rotation and outcomes such as organizational commitment, engagement and job-to-dependents enhancement (see also Othman & Nasurdin, 2012; Utriainen & Kyngäs, 2009).

A second limitation concerns the chosen method. This study used cross-sectional quantitative analyses to examine the degree of job rotation, and its consequences. A qualitative approach could also be applied, to increase the understanding of the context in which these public professionals job. This approach can be very beneficial when examining sociological/psychological phenomena such as subjective rotation. A sequential strategy can be used, where scholars start with a quantitative approach, which is followed by a qualitative approach to further understand and contextualize the feelings and perceptions of the midwives (see also Holloway & Wheeler, 2009:19).

In sum, this study shows that job rotation has important consequences, and that the concept can be useful for analyzing the experiences of people with their job. Future studies could continue this line of research by analyzing various consequences of job rotation, such as organizational citizenship behavior or engagement (Bakker & Demerouti, 2008; Organ & Ryan, 1995). Furthermore, antecedents of rotation can be analyzed, such as New Public Management, leadership behavior and jobplace relationships (Hood & Peters, 2004; Tummers et al., 2009). All in all, embracing and further researching job rotation, including ways to reduce it, could be a valuable endeavor for both researchers and practitioners.

IMPLICATIONS FOR NURSING MANAGEMENT

Managers and leaders in healthcare organizations should take actions to increase the meaningfulness people attach to their job, thereby maintaining a high-quality jobforce (Whitehead, 2006). Firstly, this can be done by giving employees positions which 'fit' with the values and beliefs of these employees, hence aiming for a good person-role fit (or broader: person-job or person-organization fit) (May et al., 2004). The values of some employees are better aligned with the position of a front-line healthcare professional than that of a manager. Promoting such employees to managerial positions – which means being in meetings most of the time (Arman et al., 2009) - might not be a good idea. Secondly, it has been shown that high-quality relationships with colleagues and managers increase meaningfulness at job (Kahn, 1990). Appreciation for each other's job, no personal harassment or bullying in the job place, and not focusing only on the job role but also the person behind it are therefore beneficial to increase meaningful job. Thirdly, managers and leaders can aim to better communicate the results employees help deliver, which becomes more important given the increased hyper specialization in healthcare (Porter & Teisberg, 2007).

ETHICAL APPROVAL
Permission for the study was granted by the nationwide association for midwives (KNOV) and midwife ultrasound specialists (BEN). Because the study did not involve patients, ethics committee approval was not needed.

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PERCEPTION OF STUDENT-TEACHERS TOWARDS USE OF MOBILE LEARNING IN ENHANCING TEACHING PROFICIENCY

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ABSTRACT

This paper highlights the perception of student teachers, who were exposed to mobile learning strategies in enhancing their teaching proficiency and a group who was not exposed to any treatment. An experimental study was conducted using 'Pre-test – Post-test Control Group Design. The sample of the study was selected randomly and three groups were created: two treatment and one control. Prior to the experiment, the data on availability and know-how for the mobile technology among student-teachers was also taken and the data revealed 100% availability of mobile devices and 80-90% have the know-how of the various features of the devices. During the experiment, video recording of the classroom teaching of student teachers was done and videos were shown to the respective student teachers along with feedback and teaching tips which were also shared through messages for the treatment group. No treatment was given to the controlled group. The data on the self-developed perception scale was collected prior to the experiment and after the experiment. The results indicated that the treatment had a significant effect on the teaching proficiency of student teachers. Further the acceptance of technology was also confirmed using the three components of the Technology Acceptance Model.

Keywords: M-learning, teacher education, supervision, teacher training, Pre-service teacher education

INTRODUCTION

The field of computer based learning has grown enormously during the last one decade. E-learning, Online courses, mobile learning, use of social media platforms for learning and collaboration are the visible uses of computer based learning. (Politou et al., 2017). As it is being witnessed that mobile technology has altered the way of living and it is also changing the way of learning. The adoption of these technologies by learners or teachers at different levels (school level, higher education levels, training etc) is visible through new educational apps coming up. It has had an impact on teaching and learning and has become a media to create a link between informal and formal learning (UNESCO 2013). (Mtega, Bernard, Msungu & Sanare 2012) also mentioned that mobile devices are being used for learning as well. Mobile phones are used for storing data, clicking pictures, recording information through audio and video recorders on the device, accessing the internet for educational and other uses, sharing information in form of text, audio, video and movies through social media platforms like whatsapp, telegram, Bluetooth, apps like ShareIt, Google Drive, and improving links between classroom and field. These are some of the

mobile phone applications which can be used for learning. Now the devices are coming with more advanced features like applications for creating videos using screen recording while writing on screen, interactive apps in education are being available for phones and much more.

Mobile learning or m learning has been conceptualised and defined by different groups of researchers in different ways. Some have taken the technical aspects to define it keeping in mind its hardware and others have focused on learning using mobile devices and a different group have taken contextualisation of learning and mobility for enhanced learner experience (Ally 2009). Literature review reveals various characteristics of mobile learning. When learning is spontaneous, informal, personal, portable, ubiquitous, contextual and pervasive (Kukulska-Hulme and Traxler 2005). (O'Malley et al.2005) say mobile learning is when learning happens beyond a fixed location and at learners' convenience using mobile technologies. Acceptance of mobile learning has also been investigated focusing particularly on the Technology Acceptance Model. Technology Acceptance Model is considered the most influential model for acceptance of technology (Chuttur 2009). TAM explains the motivation of users by three factors; perceived usefulness, perceived ease of use, and attitude toward use (Taherdoost 2018). To explore the acceptance of an m-learning procedure it was tried to find out the parameters that contribute to it, it was observed that generally there is a positive attitude towards it and the cause is the availability of the device. The availability of Mobile technology is massive in comparison to any other technology and around the world people are using it for various purposes. Developing countries are taking a lead in it (Ally 2009 and UNESCO 2012). It is further seen that poorer communities have also come forward in accepting this technology (UNESCO 2012). The data shows that the world's second largest internet population i.e. 749 million users in 2020 is in India. Fifty three percent of India's total population is accessing the internet from their mobile phones in 2020 (Statista 2021). It is found that the size of mobile devices, cost-effectiveness, easy and comfortable mobility and its personal ownership are a few reasons for the high

penetration of mobile phones in comparison to other devices like computers and even Laptops (UNESCO 2012, Uden 2007, Nawocha 2010 and JISC 2015). Saxena et. al. (2015) found the positive attitude of students towards m-learning as 81% postgraduate management students were willing to use m-learning, as they owned the technology. Again approx. 81% of students saw a bright side of mobile learning and considered it as a good vehicle for learning. Further (Lundin et. al. 2010) shared that use of mobile for collecting field data and making notes didi not require any training and was easy to use for the learners. Baran (2014) in the meta analysis reported that mobile learning integration and use of mobile devices is primarily reported favourable and useful. Availability of mobile devices with teachers and the ability to use the devices for learning along with acceptance for m-learning was revealed. M-learning was believed to have the potential to engage the learners and also had the scope for collaboration which it provides, resulting in reducing the feeling of isolation amongst ODL learners.(Miglani et. al. 2017). The studies conducted on mobile learning indicate the ease of use, positive attitude and usefulness of the mobile technology which qualifies for application of the TAM model. The

acceptance of mobile technology can also be experienced in general uses that have increased so much from online shopping, to ordering foods and medicines, banking, gaming and entertainment. Mobile learning places its roots in many thoughts of learning whether it is Behaviourism, Cognitivism or Constructivism based on the content, learner and the environment. This paper focuses on learning being mobile i.e. situated learning and learning through self analysis, as the knowledge here is being applied and an individual's own meaning has been derived in real life situations (Fraga, 2012). So mobile learning is placed here in constructivism.

Mobile learning is making its place in Teacher education also. Researchers are coming forward to experiment with new technologies and study their effect. Teacher education is one such field where, if any change is implemented, it can be translated at different levels and in all the fields. (UNESCO 2013) mentioned in the policy guidelines about using these mobile technologies in learning, and training of teachers. Training of teachers is an important area for implementation and investment rather than investing in any kind of technology. With the use of mobile devices, technology enabled supervision and feedback can prove to be beneficial to teacher educators as well as student teachers The barriers of time and distance will be eliminated using mobile devices and this will also provide a comparative picture of the performance of student teachers with predetermined standards and also with the previous performances which will guide further for the actions required. Studies indicate that faculty with basic technology skill set and expertise can use mobile devices to provide feedback and it has been termed as eCoaching. (Dieker et al. (2014)). Schwartz has mentioned that audio and video recording are the objective way of self evaluation. Nagpal et. al. (2017) reported that use of mobile video recording for capturing the teaching session of student teachers and viewing them to improve upon the teaching proficiency has significantly more positive effect on teaching proficiency of experimental groups than the teaching proficiency of controlled groups.

Supervision of student teachers during teaching practice in any teacher preparation programme has been an area of concern and looking at the possibilities of mobile learning and availability of mobile devices, technology enabled supervision and feedback can prove to be useful to student teachers as well as teacher educators. Video recording has already been an important component of Micro teaching but now its usability can be tested during teaching practice. Use of mobile phone applications for video recording will give an opportunity to compare the teaching of student teachers with predetermined standards as well as with their own previous performances. At the infrastructural levels also minimum investment would be required. Keeping all these issues and challenges in focus and a few research-based directions on the uses and benefits of mobile learning, it was planned to conduct the study. So, the researcher tried to see the perception of student teachers in increasing their teaching proficiency. The perception was taken in an experimental setting where two treatment groups were exposed to mobile learning strategies and one was working in controlled settings. The perception of all the groups was taken before and after the experiment. The objective of the research were To find out the availability and usability of mobile phones. To ascertain the perception of student teachers on using mobile learning strategies during SEP to see the change in teaching proficiency after the intervention.

BODY OF PAPER
The experimental study was conducted using 'Pre-test – Post-test Control Group Design. The sample consisted of 30 student teachers of the second year ETE course of an ETE institute (DIET) of Delhi, NCR and it was identified using Random Sampling technique. Two treatment groups and one control group were formed for the study. Five-five teaching sessions were video recorded and shown/ shared with each student teacher in both the treatment groups. Feedback on these teaching videos were also sent through messages to the participants of treatment groups. Simple teaching tips were only shared with Treatment group I through messages and tips were

not given to the other treatment group. On the other hand, no treatment was given to the Controlled group, only videos of teaching sessions were recorded.

A perception scale was developed by the researcher to take the perception of student teachers on the use of mobile phones in teacher education and for educational purposes. Cronbach Alpha's reliability was calculated and it was found that the tool was reliable at .71. The final tool, having 20 items, was used for data collection of the study.

The perception scale was administered on all the three groups i.e. Control Group, treatment Group I and treatment Group II before and after the exposure to the treatment (Table 1). Before the study the basic information regarding age, gender and know-how of mobile phones was also collected, which could actually influence the study. The data were analyzed using (Post test scores - Pre test scores) i.e. Gain Scores and one tail t-test of differences between two measures (Statistical Inferences by Walker and Lev) was applied for studying the perception of m-learning.

RESULTS OF THE STUDY

The analysis of data indicated that all the student teachers were of similar age i.e. 18-19 years and out of 30 student teachers only 4 were boys. The data showed that all the participants owned their own mobile phone and were familiar with sending/ receiving messages on the phone. Further it was found that 90% participants were familiar with the video recording feature of the phone and 80% were comfortable using downloading/uploading data on Google Drive. These were a few

requirements for the study. The student teachers who faced difficulty were guided step wise prior to the study.

The perception of student teachers about the use of video recording to see the teaching sessions, feedback and teaching tips received in the form of messages was taken and the results of the study has been discussed. Findings indicate that:

Table 2 Pre-perception of Three Groups

Groups Under Study	N	Mean	SD	df	t ratio/ table value
Treatment Group I	11	65.36	6.07		
Treatment Group II	10	70.3	5.498	19	1.94/ 1.73
Treatment Group I	11	65.36	6.07		
Control Group	9	79.2	4.265	18	5.76/ 1.73
Treatment Group II	10	70.3	5.498		
Control Group	9	79.2	4.265	17	3.9/ 1.74

Significance level at .05

Perception of student teachers from all the groups was taken in the beginning as pre test and the mean of all the three groups was calculated (Table 2), treatment group I (65.36) treatment group II (70.3) and control group (79.2) and then one tail t test was applied to see the matching. Treatmentgroup I & II, treatment group I & control group and treatment group II and control group had obtained 1.94, 5.56, and 3.9 t ratio which was higher than the table value of t 1.73, 1.73 and 1.74 at .05 level with df 19, 18 and 17 respectively. From the t value and mean scores it was clear thatcontrol group is pro to mobile learning then other groups.

Table 3 Post-perception of Three Groups

Groups Under Study	N	Mean	SD	df	t ratio/ table value
Treatment Group I	11	79.63	7.59		

Treatment Group II	10	81.8	7.114	19	0.6739/ 1.33
Treatment Group I	11	79.63	7.59		
Control Group	9	76.22	6.96	18	1.03/ 1.33
Treatment II	10	81.8	7.114		
Control Group	9	76.22	6.96	17	1.724/ 1.33

Significance level at .10

Perception of all the student teachers was taken again at the end of the treatment (Table 3) and Mean scores of the three groups were treatment group I (79.63) treatment group II (81.8) and control group (76.22). Post test mean scores were totally reversed from pre test mean scores. To check the significance t test was applied pair wise and t ratio came out as 0.67, 1.03 and 1.724 and it showed no significant difference amongst the three groups on perception after the treatment whereas there was significant difference found amongst the groups on pre perception.

Table 4 Perception Gain Scores

Groups Under Study	N	Mean	SD	df	t ratio/ table value
Treatment Group I	11	14.27	7.96	19	0.936/ at .10=1.33
Treatment Group II	10	11.5	5.126		
Treatment Group I	11	14.27	7.96		
Control Group	9	-3	7.905	18	4.85/ at.025= 2.10
Treatment Group II	10	11.5	5.126		
Control Group	9	-3	7.905	17	4.79/ at .025= 2.11

To understand the results better, gain scores were calculated (Table 4), gain mean of all the groups was treatment group I (14.27) treatment group II (11.5) and control group (-3). Then one tail t test were calculated in pairs i.e. treatment group I & II (0.936) , treatment group I & control group (4.85) and treatment group II and control group (4.79), it was observed that both the treatment groups did not differ on significance at .025 significance levels but the perception of other two pairs were found to be significantly different at .025 level on the df 18 and 17 respectively. From these results it was clear that the perception of treatment groups changed after the experiment and it was found to be positive.

Similar findings of positive perception have been reported in the literature on the use of mobile phone or digital video recording. Wu & Kao (2008) reported that "Pre-service teachers perceived the streaming video as a very useful feature" from their study on streaming videos to support pre-service teachers. Savas (2012) also reported that video recording increased the self confidence of pre-service teachers, improved speaking skills as it helped them in watching and listening to their own presentation and also in planning and organising their lesson plans meaningfully.

There were certain challenges also which were faced by the researcher as well as student teachers regarding the acceptability of using mobile devices for educational purposes. Mobile devices created an unseen panic amongst the ETE institute and schools at the beginning which was handled carefully for the benefit of all. Further video recording was also an area of stress for the school authorities which was attended properly.

CONCLUSION

Mobile devices belong to everyone and people are familiar with its usage starting from calling messaging, taking photos, recording audios and videos, sharing the same further and much more. The time is to fully exploit its potential for education. The student-teachers who were exposed to the utility of their own devices put them in surprise. Use of video recording of sessions helped them analyse their own performance and improve it. They mentioned that video recording of teaching sessions should become a permanent part of teacher preparation programmes irrespective of the kind of practice teaching is going on i.e. micro teaching, simulated teaching or SEP. The perception of student teachers was positive in using mobile phones for enhancing the teaching proficiency. As per the Technology Acceptance Model it was found that the student teachers were positive about the usefulness of mobiles for learning, and were comfortable with their devices. There were certain challenges which were faced but steps can be taken to address them and make this technology stay in education.

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PARAMETRIC STUDY OF FATIGUE PERFORMANCE IN FLEXIBLE PAVEMENT

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ABSTRACT

Majority of roads in worldwide are constructed of flexible pavements, wherein, the failure of pavement is in the form of either cracking (fatigue) or rutting (permanent deformation). Fatigue cracking is a major distress in bitumen pavement because of repeated traffic loading that significantly affects the serviceability of pavement. The purpose of this paper is to study the effects of aggregate gradation, asphalt content, evaluation of the impact of a mix, temperature, road roughness and moving vehicular speeds asphalt property on fatigue performance of asphalt-treated base on pavement performance considering the effect of fatigue cracking. Also study of effect of water damage on the interface between asphalt pavements and water stability of asphalt mixture based on water-temperature and to summarize what is known about the factors that influence fatigue performance.

The conclusion shows that mixtures with fine-graded mixture exhibit better fatigue resistance than those with other mix gradation types. Cracking from the base of an asphalt pavement is mainly due to vehicle loading and is not strongly influenced by thermal loading cycles. Fatigue lives of the asphalt mixtures and binders increase with the increase in loading frequency. Usually, loading frequency signifies the vehicle speed on the pavement, it is logical that at higher vehicle speed fatigue life of the pavement increases.

Keywords- fatigue cracking, temperature, traffic loading, water stability, loading frequency.

INTRODUCTION:

History of Indian Road

The first evidence of road development in the Indian subcontinent can be traced back to approximately 2800 BC from the ancient cities of Harrapaand Mohenjodaro of the Indus Valley Civilization. Ruling emperors and monarchs of ancient India had constructed roads to connect the cities. Archaeological excavations give us fresh information about road connectivity in ancient India. The Grand Trunk Road was built by the Mauryan Empire and expanded over many different dynasties until being completely revived by Emperor Sher Shah Suri in 1540- 45connecting Sonargaon near Dhaka in Bangladesh with Peshawar in modern-day Pakistan linking several cities from in India. It was also further expanded by the Mughal Empire. In the 1830s the East India Company started a program of metaled road construction, for commercial and administrative purposes. The Grand trunk road, from Calcutta, through Delhi to Peshawar was rebuilt at a cost of £1000 / mile, roads from Bombay to Pune Camp, Bombay to Agra, and Bombay to Madras, were constructed, and a Public Works Department, and the Indian Institute of Technology Roorkee founded, to train and employ local surveyors, engineers, and overseers, to perform the work, and maintain the roads. The program resulted in an estimated 2,500 km (1,600miles) of metaled roads being constructed by the 1850s.In December 1934 the Indian Road Congress (IRC) was formed, on the recommendations of the Indian Road Development Committee (Jayakar Committee) of the Government of India. They proposed a twenty-year plan, in 1943, to increase the road network from 350,000 km (220,000 miles) to 532,700 km (331,000 miles) by 1963, to achieve a road density of 16 km, per 100 km2 of land. The construction was to be paid in part through the duty imposed, since1939, on petrol sales, and became known as the Nagpur Plan. The construction target was achieved in the late 1950s.In

1956 a Highways Act was passed, and a second twenty-year plan proposed for the period 1961- 1981, with the ambition of doubling road density to 32 km, per 100 km2. This second plan became known as the Bombay Road Plan. India inherited a poor road network infrastructure at the time of its independence in 1947.Beyond that, between 1947 and 1988, India witnessed no new major projects, and the roads11were poorly maintained. Predominantly all roads were single lane, and12most were unpaved. India had no expressways, and less than 200 kilometres of 4-lane Highways. In 1988, an autonomous entity called the National Highways Authority of India was established in India by an Act of Parliament and came into existence on 15 June 1989. The Act empowered this entity to develop, maintain and manage India's road network through National Highways. However, even though the Authority was created in 1988, not much happened till India introduced widespread economic liberalization in the early 1990s. Since1995, the authority has privatized road network development in India. One of the most ambitious projects to improve roads in India was under the National Highways Development Project (NHDP) started in the year 1998 by then Prime Minister Atal Bihari Vajpayee. The

flagship project of the NHDP is the Golden Quadrilateral, a total of 5,846 km long 4/6 lane highways connecting the four major cities of Delhi, Mumbai, Chennai, and Kolkata. Total cost of the project is Rs.300 billion (US$6.8 billion), funded largely by the government's special petroleum product tax revenues and government borrowing. On 8 January 2012, India announced the four-lane GQ highway network as complete. Another important road project is the 7,142 km long 4/6 lane North–South and East–West Corridor comprising national highways connecting four extreme points of the country. The North–South and East–West Corridor connects Srinagar in the north to Kanyakumari in the south, including spur from Salem to Kanya Kumari (via Coimbatore and Kochi) and Sacchar in the east to Porbandar in the west. As of 31 October 2016, 90.99% of the project had been completed, 5.47% of the project work is under Implementation and 3.52% of the total length is left. As of May 2017, under NHDP about 28,915 kilometres of 4/6 lane highways has been constructed (including the GQ and E-W/N-S Corridor), while a total of 48,793 km of road has been planned to be 4/6 laned under the NHDP.

Pavement:

A highway pavement is a structure consisting of superimposed layers of processed materials above the natural soil sub-grade, whose primary function is to distribute the applied vehicle loads to the sub-grade. The pavement structure should be able to provide a surface of acceptable riding quality, acceptable skid resistance, favourable light reflecting characteristics, and low noise pollution. The aim is to ensure that the diffused stresses due to wheel load are sufficiently reduced, so that they will not exceed bearing capacity of the sub-grade. Two types of pavements are generally recognized as serving this purpose, namely flexible pavements, and rigid pavements. This paper gives an overview of pavement types, layers, and their functions, and pavement failures. Improper design of pavements leads to early failure of pavements affecting the riding quality.

Flexible Pavement:

Bitumen, also known as asphalt in the United States, is a substance that forms through the distillation of crude oil. It has waterproofing and adhesive properties. Bitumen production through distillation removes lighter crude oil components, such as gasoline and diesel, leaving the "heavier" bitumen behind. The producer often refines it several times to improve its grade. Bitumen can also occur in nature: Deposits of naturally occurring bitumen form at the bottom of ancient lakes, where prehistoric organisms have since decayed and have been subjected to heat and pressure. Flexible pavement also called Asphalt (asphalt concrete) pavement due to the nature in which it distributes loads, has been widely used since the 1920s. The glutinous nature of the bitumen binder allows asphalt concrete to sustain significant plastic deformation,

although fatigue from repeated loading over time is the most common failure mechanism. Most asphalt surfaces are laid on a gravel base, which is generally at least as thick as the asphalt layer, although some 'full depth' asphalt surfaces are laid directly on the native subgrade. In areas with very soft or expansive subgrades such as clay or peat, thick gravel bases or stabilization of the subgrade with Portland cement or lime may be required. Polypropylene and polyester geosynthetics have also been used for this purpose and in some northern countries, a layer of polystyrene boards has been used to delay and minimize frost penetration into the subgrade.

Flexible pavements will transmit wheel load stresses to the lower layers by grain-to-grain transmission through the points of contact in the granular structure (see Figure).
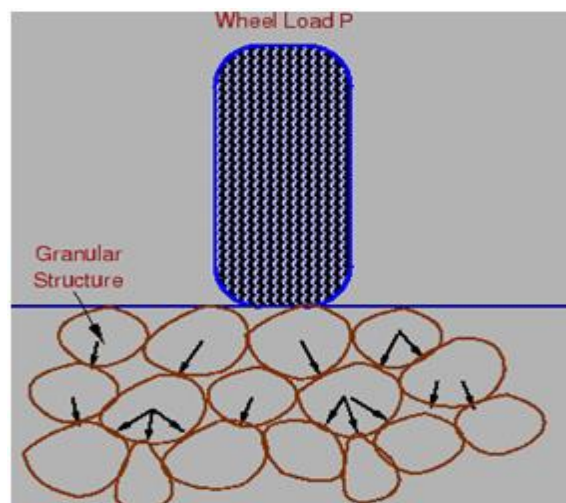
Figure 1:Load transfer in granular structure

Types of Flexible Pavement:

Conventional flexible pavements: These are layered systems with high quality expensive materials are placed in the uppermost where stresses are high, and low-quality cheap materials are placed in inferior layers.

Full - depth asphalt pavements: These are constructed by placing bituminous layers directly on the soil sub-grade. This is more appropriate when there is high traffic and local materials are not available.

Contained rock asphalt mats: These are constructed by placing dense/open graded aggregate layers in between two asphalt layers. Modified dense graded asphalt concrete is placed above the sub-grade will significantly reduce the vertical compressive strain on soil sub-grade and protect from surface water.
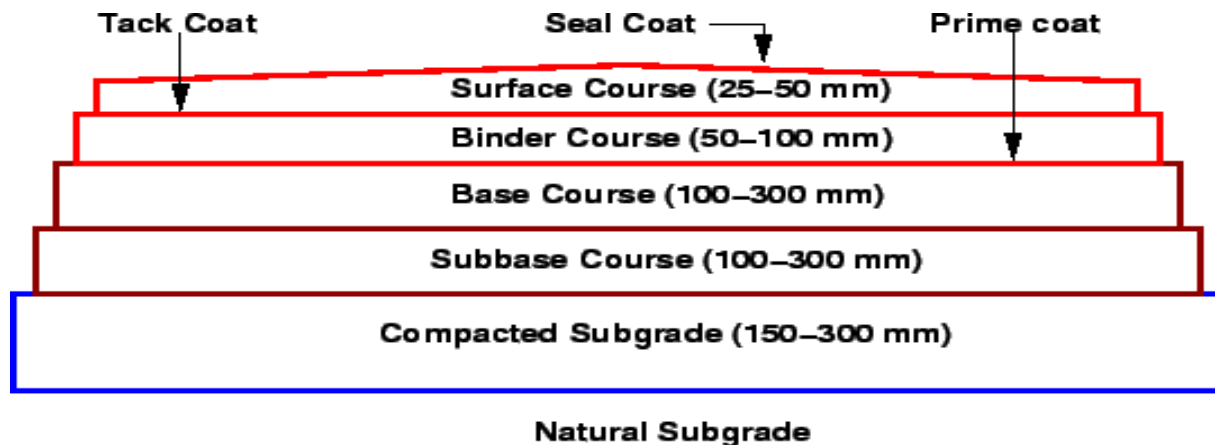
Figure 2:Typical cross section of a flexible pavement.

Fatigue:

Fatigue is one of the main types of failure for the asphalt concrete pavement of a highway. As it determines, in connotation with other types of failure (rutting, low-temperature cracking), the service life of pavement in accordance with the requirements of standard document, all pavement structures of the highways of capital and lightweight types on the design stage should be calculated for strength under the criterion of tensile bending strength of the asphalt concrete layers. It is measured that the fatigue cracking on the asphalt concrete pavement of highways occurs at frequently repeated load impact of the vehicles wheels. Stripping or ravelling is another possible cause of fatigue cracking. Stripping occurs when poor adhesion between asphalt and aggregate allows the aggregate at the surface to dislodge.

Objective

To Study effects of aggregate gradation, asphalt content, asphalt property on fatigue performance of asphalt-treated base.

To Study evaluation of the impact of a mix, temperature, road roughness and moving vehicular speeds on pavement performance regarding fatigue cracking.

To study effect of water damage on the interface between asphalt pavements and water stability of asphalt mixture based on water-temperature.

To Study analysis of Fatigue performance with software like KENLAYER and BISAR.

Parametric study

Moisture: -

TSR after water conditioned and increased up to addition of 0.05% dosage and decreased with further addition of fiber content. However, beyond this, the increase in fiber content was observed to result in accumulation of fibers in isolated locations within the mix. This situation is not considered to be good as the resultant effect is a reduced resistance to moisture damage. Demonstrated by Siksha Swaroopa Kar, M. N. Nagabhushana, P. K. Jain.

The presence of moisture in the asphalt concrete pavement causes the loss of bonding between asphalt cement and aggregate, which results in stripping. (Roberts et al.) defined the stripping of asphalt as the ultimate loss of the adhesive bond between the aggregate surface and the asphalt due to the presence of moisture in a mixture Demonstrated by Nabil AIKofahi, Taisir Khedaywi.

Extreme changes in moisture content within a pavement structure during flooding could lead to increase the pore water pressure, and therefore, influence the soil stress states. The effective stresses in subgrade could be reduced due to increased pore water pressure, and as a result, reduce stiffness and strength of the subgrade. The change in moisture content and pore water pressure could significantly impact the load-bearing capacity and performance of pavement structure. Demonstrated by Mohamed Elshaer, Jo Sias Daniel.

The effect of interlayer watering on the shear strength of the asphalt composite girder interface is smaller than that of water immersion. The watering between the layers and the soaking of the specimens reduces the fatigue life of the asphalt composite girder. Demonstrated by Du Jian-huan

Temperature:
At higher test temperatures, the mixture is soft, and the expected bond strength between the asphalt mixture and the aramid fibers is low compared to that at lower temperatures where the mixture is stiffer. However, as the temperature gets higher, the effect of the aramid fibers diminishes demonstrated by Siksha Swaroopa Kar, M. N. Nagabhushana, P. K. Jain.

Fast fracture of the Asphalt material due to rapid falls in temperature is also thought to be a possible cause of surface cracking. The critical temperature was independent of the rate of cooling in the temperature range of interest, and only dependent on the properties of the bituminous binder.

Material:
Blending of Reclaimed Asphalt Pavement with the mixture causes a decrease in the mixture's fatigue life. The presence of Reclaimed Asphalt Pavement binder in the extracted binder causes an increase in the fatigue life of binder. This early fatigue failure of RAP mixture can be due to the poor interaction between Reclaimed Asphalt Pavement aggregate and virgin binder. As fatigue cracking mostly occurs at the binder-aggregate interface in the mixture demonstrated by Umme Amina Mannan, Md Rashadul Islam, Rafiqul A. Tarefder.

Gilsonite modified ACWC would have the longest fatigue life to crack initiation, followed by SMA and unmodified ACWC. However, the overall fatigue resistance including the effect of crack propagation of the modified bituminous materials is better than that of the unmodified materials demonstrated by SuoZhi, Wong Wing Gun, Luo Xiao Hui, Tian Bo.

Addition of polypropylene and aramid fibers the results show that fiber improved the mixture performance by a drop of rut depth up to 50% and adding fatigue resistance up to 400%. Moisture resistance and indirect tensile strength of fiber mixture is increased by 9 to 14% in comparison to conventional mix. While the addition of fibers resulted in 2% higher cost, manifold increase of performance and 13% reduction in pavement thickness would justify the act. Demonstrated by Siksha Swaroopa Kar, M.N. Nagabhushana, P.K.Jain

Anti-stripping agent (Abil AIKofahi, Taisir Khedaywi)

Hydrated lime has a significant positive effect on increasing the cycles to failure, which increased by 175 %, 175 %, and 214 % for limestone, valley gravel, and basalt, respectively.

Polyamine has a less significant positive effect of increasing the cycles to failure than hydrated lime additive; the improvement in fatigue resistance is due to polyamine additions and increase in the contact area between the asphalt and aggregate surface.

Aggregate Gradation:

The fatigue life of bituminous mixtures is influenced by several factors such as test temperature, frequency of applied loads. Aggregate gradation has an important effect on fatigue life as demonstrated by Sousa et al (1998).

Sousa et al (1998) concluded that finer gradations tend to have higher binder contents, which leads to better fatigue resistance. Hafeez, Kamal and Mirza (2015) found similar results after characterizing the fatigue performance of an asphalt mixture by means of the strain-controlled 4PBBT.

A similar conclusion was reported by Sausa et al (1998). They investigated the effect of mix gradation on the fatigue performance of asphalt mixtures using the bending beam fatigue test and concluded that mixtures with fine-graded mixture exhibit better fatigue resistance than those with other mix gradation types (Sousa et al 1998).

Software:
KENLAYER is a Microsoft based software which can be used for analysis and designing of both rigid and flexible pavement.

This software tool has two portions namely, KENSLAB for analysis and design of rigid pavement, and KENLAYER for analysis and design of flexible pavement.

This software is used to calculate micro stresses and strains in flexible and rigid pavement.

KENLAYER software give the output in the form of text which is used to calculate the maximum horizontal tensile strain and vertical compressive stress for each layer.

CONCLUSION:

This study examines the fatigue behavior of flexible pavements by considering various parameters and on basis of that the following conclusions are drawn:

Mixtures with fine-graded mixture exhibit better fatigue resistance than those with other mix gradation types.

Fatigue lives of the asphalt mixtures and binders increase with the increase in loading frequency. Usually, loading frequency represents the vehicle speed on the pavement, it is logical that at greater vehicle speed fatigue life of the pavement increases.

Fatigue lives of the asphalt mixtures and binders increase with the increase in loading frequency.

It seems that under the action of long-term un-busy traffic, the crack propagation becomes relatively stable.

Cracking from the base of an asphalt pavement is mainly due to vehicle loading and is not strongly influenced by thermal loading cycles.

The environmental rainfall is the main reason that the pavement is damaged by water during use.

The watering between the layers and the soaking of the specimens reduces the fatigue life of the asphalt composite girder.

The Software gives us effective equation to calculate allowance for no. of load repetition to avoid fatigue.

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PERFORMANCE VALIDATION OF ROUTING ALGORITHM IN VANET THROUGH OPEN-SOURCE SIMULATION TOOLS

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ABSTRACT

There are some of the traditional as well as metaheuristics routing protocols that can be applied for Mobile Adhoc and Vehicular Adhoc Networks. These protocols are best suited for varieties of routing environments and traffic scenarios. There is always a challenge to test and validate the performance of these routing protocols. In this paper, the authors have proposed open-source software tools and presented experimental procedures to check the performance of routing protocols. The Ad Hoc On-Demand Distance Vector (AODV) routing protocol is used for three distinctive traffic scenarios in the VANET environment. Open Source tools like SUMO, NS is used and for the traffic simulator Simulation of Urban Mobility (SUMO 0.32) and for Network Simulator NS-3.29 is used to get the results. The simulation is executed for three considered traffic scenarios are taken including realistic city traffic scenarios of Dehradun city. Through this paper, the authors wish to present the best way for performing and testing the routing protocols in VANET.

Keywords AODV, VANET, SUMO, NS, Simulation

INTRODUCTION

Vehicular Ad hoc Network (VANET) is one of the fastest evolving research in the domain of Intelligent Transportation Systems (ITS). When closely looked at the taxonomy of ITS, it can be seen that the major concern is VANET routing and security. However, many international consortiums are already working on it with their agendas and products. As high cost involved in real-time testing hence simulation software is used to get proposed results. So, none of the research consortiums is directly testing their hypothesis on the field. Instead, they first create real-time scenarios using various software tools and then test them using simulation experiments. After getting the desired results, they test that with actual hardware in real-time fields [1]. Presently due to the emergence of cloud services and the Internet of Things (IoT), there will be a revolutionary change in the architecture of today's traffic and transportation system in the near future. VANET performance depends on various routing protocols and wireless standards. Otherwise, timely communication and delay in data packets may cause accidental disasters in real-time of ITS implementation [2]. For testing various routing protocols, simulation tools are also used to verify the analysis of the results. Many open-source and proprietary tools are already available, but none of the standard simulation software can fulfil all the real-time scenarios.

In this paper, some major VANET simulations are discussed, followed by simulation experiments performed to show the validity of the proposed methodology.

The methodology used in the research work

In this section, the methodology is presented and verified during the various research simulation implementation and experiments. This approach helps in performing the research test in a much simpler and faster way. The result analysis is also instant as data can be get instantly in many formats and viewed as per need. From the present experience, this can be stated that the computing resource must be robust enough so that no lagging or outages come during the execution of any simulation task. For all the experimental setups, the test deployed on the computing machine with Corei7-8700 3.2 GHz. of processor and a minimum of 8GB RAM is required. That was the HP workstation used from UPES Computer Laboratory, IT Tower, ITLab102_PC35. Previously the test was tried on Corei3 Laptop, but the results were not satisfactory and took too long to run, even when it stopped responding. There was a need to repeat the simulation tests multiple times to verify the results, as reading may vary due to the machine's poor performance .

Figure 1 illustrates the methodology of the process followed for all the research simulation tests. The below-designed framework was implemented for repetitive simulation tests on an HP workstation machine through the open-source operating system Ubuntu 16.04 release [3]. The traffic simulator used is Simulation of Urban Mobility (SUMO 0.32) [4] and Network Simulator NS-3.29 [5] for all the research tests. The simulations carried by importing the real city scenario map of Dehradun city from OpenStreetMap as per the URL given here https://www.openstreetmap.org/search?query=dehradun#map=15/30.3257/78.0602 [6] for a realistic approach. Then this was converted for the SUMO network.

The region from Clock Tower to Mussoorie diversion Rajpur Road is selected as it is the most congested route because of the heavy traffic going to Mussoorie from various regions during peak season times.
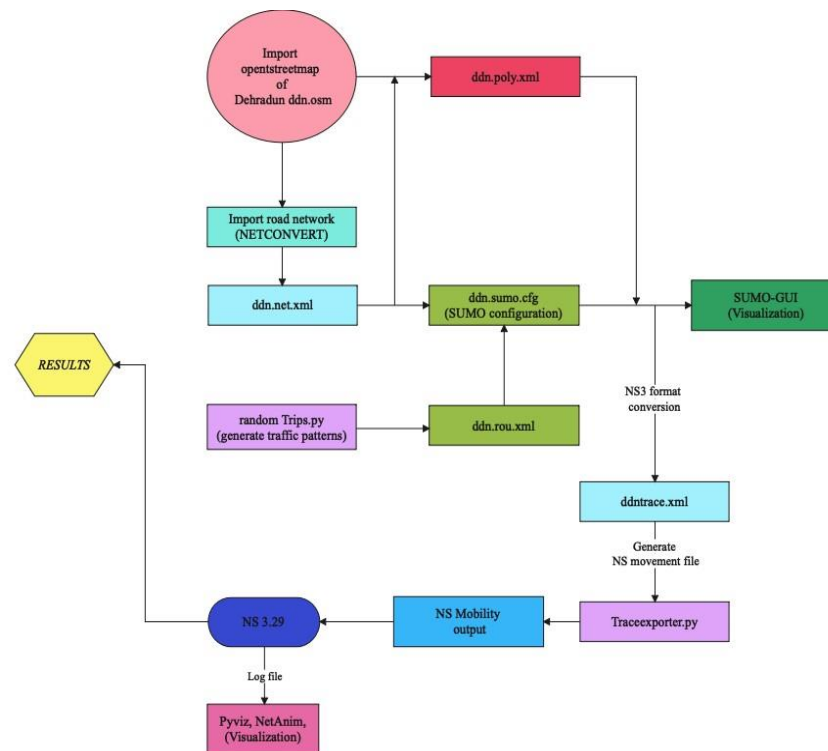
Figure 1 Methodology designed for simulation experiments

The imported OSM map is converted through the netconvert command: "netconvert --osm- ddn.osm –o ddn.net.xml". Then randonTrips.py is used for adding the desired trip and routing in the network through the python scripts. This random trip script randomTrips.py applied through the command: "py randomTrips.py –n ddn.net.xml -r ddn.rou.xml –e 50 –l –e" to generate the route, and this generates an automatic file with extension .rou that was named as ddn.rou.xml. This completes the research simulation process at this stage. The route of the vehicle is defined as a set of edges. The separate file for the trip is also generated with the departure and end node. Next, run the network using SUMO configuration file ddn.sumo.cfg. This generates the traffic flow and road map for the real city scenario imported from opensteetmap.org. The road map generated is shown in figure 2. At last, python script execution through "$./waf --run ddn.py –visualize" command at NS3 shell prompt and netanim-module.h is included as a header file for network animator in NS3.
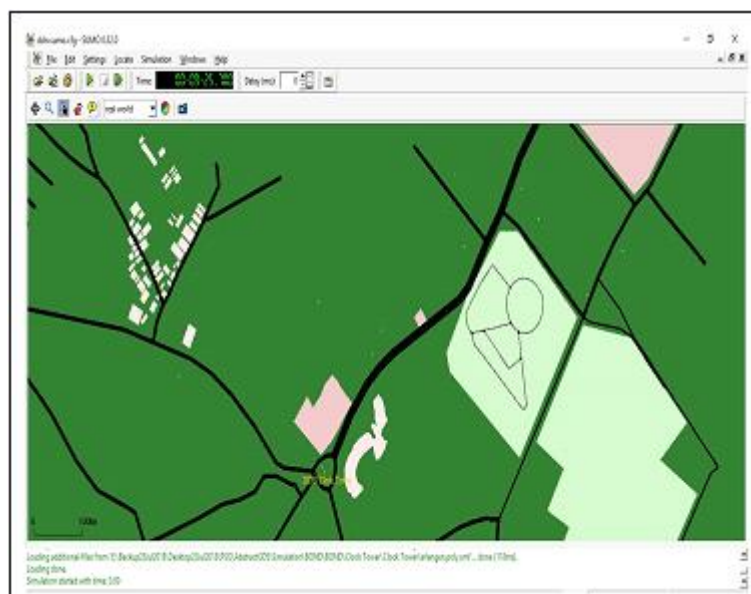
Figure 2 Realistic City Map generated from OSM

The same methodology is used in many other research works to predict the routing issues in VANET using swarm intelligence techniques and validation. However, other methods were also found during this research work but found it more fast and feasible compared to others.

Major VANET Simulators

Many network simulators are already available to implement VANET research experiments. Some proprietary VANET simulators such as QualNet, Carisma, Daimler-Chrysler, OPNET, TSIS-CORSIM, Paramics, and VISSIM [7]. These closed source tools are not available to those who are not associated with these projects. Hence, researchers in academia are dependent on only open-source software tools for all the experimental works. The VANET simulation software can be classified into three distinguished categories: Standard Network simulator, VANET Simulator, and Mobility Generator, as illustrated in figure 3.
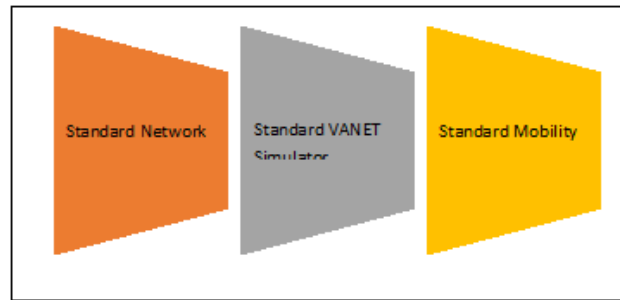
Figure 3 Categories of VANET Simulator

Vehicular mobility generators provide real city road network traces as input for the network simulator. It includes vehicle speed, road model, and increase/decrease of vehicle counts. Some of the most popular open-source mobility generator tools are MOVE, STRAW CityMob, SUMO, FreeSim, VanetMobiSim, and NETstream [8].

Standard network simulators like NETSIM and NS are used for Mobile Ad hoc Network simulations, but VANET's mobility generator extension can also be used for VANET simulations. These are GTNetS, SNS, GloMoSim, and NS2 [9]. Network simulation and traffic simulation can be performed using VANET simulators such as VENTOS, VANETsim, GrooveNet, TraNS, MobiREAL, and NCTUns. Now Veins is also getting popularity. It is an open-source simulator designed for VANET. It is the integration of SUMO and OMNET++ [10]. But none of the VANET simulators is best suited for all types of simulation tests. VANET simulation depends on various scenarios that cannot be verified through any of the above-discussed tools. So the designed framework in this research is used to perform the simulation test on a real city scenario. The performance analysis and measurement of the average throughput using the Ad Hoc On-Demand Distance Vector (AODV) routing protocol are carried out during these tests.

Simulation Test Performed using the above-developed Methodology

This section illustrates the result of the simulation tests performed during this research work.

The mentioned details in table 1 illustrate the characteristics of the simulation parameters.

Table Error! No text of specified style in document.1 Simulation Parameters with specifications

PARAMETERS	DETAILS WITH SPECIFICATION
Operating System	Open Source OS UBUNTU 16.04
Network Simulator	Open Source Simulator NS 3.26
Traffic Simulator	Open Source Simulator SUMO 0.32
Realistic City Traffic Map	Open Street Map (Dehradun City)
Mobility Model	Manhattan Mobility
Transmission range of network	150 m to 200 m only
Data Packets size	Data packets of 200 bytes only
Intervals	0.2 seconds
Data rate	2 Mbps only
Protocol	802.11p MAC layer
Speed	Up to 80 km/h only (as per the speed limit of the city)

During this research work, many of the major performance metrics have already been analyzed and compared, but this section will present only the results obtained by one performance metric,

i.e. average throughput. The others will be taken in future work of this research paper. The simulation was performed for three VANET scenarios. The first is the sparse network, the second is the dense network, and the third is for the real city scenario route network taken from osm. The above-discussed methodology is followed and tested the Ad hoc On-demand Distance Vector (AODV) routing protocol only to verify the performance of AODV at different traffic environments and the comparing of protocols is not in the scope of this research paper. This is shown here that the methodology and framework developed for this research work are easier to perform simulation test of VANET using specified open-source tools. The data considered to calculate average throughput in kbps for AODV protocol is as per table 2 and performance analysis shown in figure 4 in the graph.

Table Error! No text of specified style in document.2 Data for Simulation Experiments

Number of Vehicles	Average Throughput (kbps)		
	Sparse Network	Dense Network	DDN Network
100	200	140	90
200	160	125	100
300	140	115	110
400	130	100	90
500	125	110	95

This paper is not focusing on the performance issues of routing protocols. Instead, this work presents the methodology to perform simulation in VANET using open source tools like Ubuntu, SUMO, NS3, OSM, and python. However, it can be concluded from the above analysis that AODV performed superior in sparse
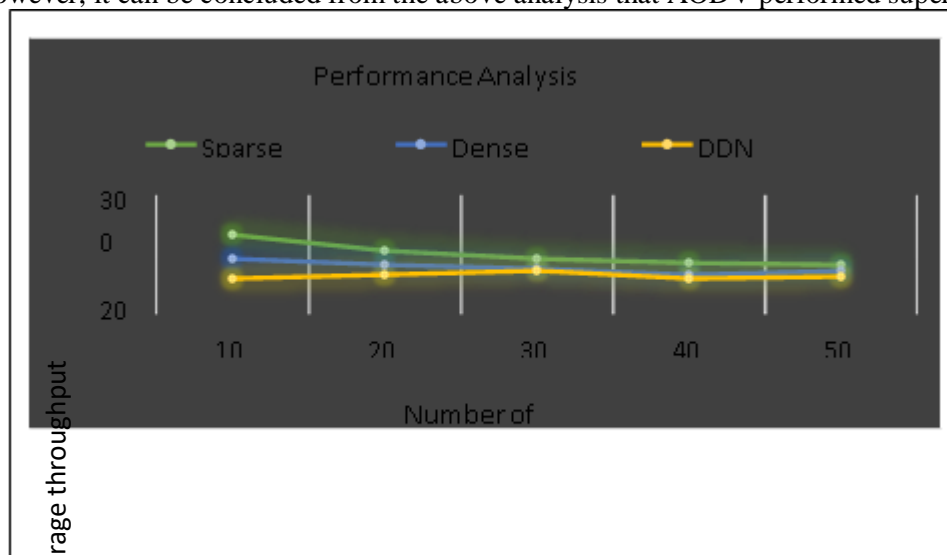
networks, and the performance is least in real city scenarios. The same can be used for further testing of other routing protocols with different performance metrics like transmission time, packet delivery ration, network delay, packet loss etc.

CONCLUSION

This paper has presented some of the primary open-source software tools widely accepted by the research community for realistic simulation tests. The VANET has emerged as a dynamic platform to perform simulation tests and verify the results based on various parameters, including routing protocols. The chapter focuses on developing the new optimized methodology for testing VANET simulations and is discussed in this paper. It has been concluded that the community would surely get results faster and easier by adopting this methodology for research. The same has been demonstrated in this paper by showing AODV routing protocol performance analysis of average throughput. In the future work of this research paper, the same methodology and framework will be deployed to verify the simulation performance analysis of Swarm Intelligence- based routing algorithms. Hence, it can be confidently stated that the open-source VANET simulation tools are a boon to the research community.

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THE LIGHT OF ECOFEMINISM IN SUSAN GLASPELL'S TRIFLES

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ABSTRACT

All through chronicled many years the uncalled for way of life in man centric social orders and the persecution of ladies by men have consistently been key ideas in the writing of the world that have led to hotly debated issues of conversation among various countries, scrutinizing the genuine thought process behind such patterns. Subsequently, by inspecting Susan Glaspell's "Trifles" from the perspective of Ecofeminism the current paper plans to show how it tends to be considered as an ecofeminist work of writing getting rid of the ideas that relate to the abuse of ladies and Nature by men. The thought is to comprehend the qualities of this age of progress and progress and its effect upon ladies' lives as reflected in the play Trifles by Glaspell. The reason behind this sort of study is to show how the play manages the ladies' inquiry for addressing women's activist cognizance, discernments and reflections identified with a female person's way of life as a lady. Given the idea of my proposed subject, I have taken response to women's activist points of view alongside recorded, socio-social and political viewpoints to help my perusing. An intentional endeavor has been made to show up at my imminent contention and end by means of crafted by scholars like Gilbert and Gubar whose perception that fury and dissatisfaction of a the lady misanthrope world can frequently prompt the condition of franticness is likewise key to the investigation of the play.

KEYWORDS: Ecofeminism, Nature, Oppression, Women , Marriage.

INTRODUCTION

Distributed in 1916, Susan Glaspell's one-act play, "Trifles", bases on a homicide secret that reveals insight into power irregular characteristics and sexual orientation contrasts in a general public where guys are the oppressors and ladies are the abused. The story opens with the passing of Mr. Wright, following which the lawyer, George Henderson, is called to glance through the case. It shows the existence of the killed Mr. Wright's spouse, Mrs. Wright, as a mistreated lady who is tyrannized and enslaved by her male centric husband. At the point when Mrs. Wright tracks down her main endearing power of upkeep, the confined bird, killed by her better half with its neck wrung, she takes steps to kill her significant other the same way and accordingly chokes him to death in rest. In any case, the two different ladies in the play, Mrs. Hale-a neighbor-and Mrs. Peters-the sheriff's spouse feel for Mrs. Wright in that they have been influenced by similar issues forced on them by their general public and husbands in their wedded life, because of which they conceal the main proof, the dead canary, from the guys who have consistently dismissed their capacities.

By and large, Ecofeminism as another basic methodology can be applied to different masterpieces. The justification behind zeroing in on Susan Glaspell and her chose play is that, as of recently, the scientist has not discovered any investigations that have been composed dependent on an ecofeminist assessment of the picked play. Additionally, among the led explores, the attention has been on the assessment of such women's activist issues as sex, class, womanhood, and so on specifically and there has been no reference to the interdependency among ladies and Nature, showing how the persecution of one is connected with the other. In that capacity, notice can be made of R. A. Gazzaz's "Stifled Voices: Women and Class in the Fiction of Susan Glaspell" (2015), Y. Shih's "Palce and Gender in Susan Glaspell's Trifles and Woman Honor" (2013), and C. Manuel's "Susan Glaspell's Trifles (1916): Women's Conspiracy of Silence past the Melodrama of Beset Woman-hood" (2000). However this play can be inspected through the structure of such basic methodologies as Feminism or Womanism, the analyst accepts that Ecofeminism suits this concentrate best with respect to the way that it [Ecofeminism] is about "interconnections among all frameworks of outlandish human control" (Warren, 2000, p. 2). Subsequently, what is deserving of notice here is the way that with the use of this way to deal with the play we come to understand that "Eco-women's liberation utilizes a women's activist methodology while investigating ladies other human Others-nature interconnections" (on the same page). Peruse in the light of Ecofeminism, the point of this short examination paper is to focus on the interconnection of Environmentalism and Feminism to arrive at the point that separation and mistreatment of sexual orientation and class are connected to the abuse and annihilation of Nature. In this way, in the accompanying para-charts a short history of Ecofeminism will be advanced. Then, at that point, the author of these lines will look at the previously mentioned play from an ecofeminist perspective.

DISCUSSION AND ANALYSIS

As an original basic point of view Ecofeminism was begat by the French essayist Françoise d'' Eaubonne in her book Le Féminisme ou la Mort (1974) as a "notice that person can't endure patriarchy's biological outcomes" (Glazebrook, 2002, p. 12). Ecofeminist pundits reject the liberal women's activists who see individuals as better than Nature because of their explanation and "join in a focal confidence in the fundamental union among ladies and nature" (Pepper, 1996, p. 106). They likewise advocate their outlook by zeroing in on the "propagation and sustaining" elements of ladies and Nature from one viewpoint and the double-dealing of ladies and Nature by men "both monetarily and in being generalized and politically underestimated" then again with an end goal to deny the "distinctions that infer predominance or legitimize mastery" (on the same page). Similarly, the adversaries of Ecofeminism search for synergistic relations among people in the impact that the thought of force dynamic is broken, the result of which is a general public without any kind of chains of importance and force irregular characteristics.

Notice ought to here be made of one of the ways of thinking in Ecofeminism as social/extremist Ecofemi-nism whose backers draw on the old legend concerning Mother Gaia, saying that the current issues on the Mother Earth and the ills caused for Nature can be mended through the blend of ladies and Nature in "an agreeable relationship: mindful, supporting, commonly giving and getting" (in the same place). Taking into account that ladies are straightforwardly associated with the pattern of creation, Pietila claims, "ladies feel themselves as a component of the everlasting pattern of birth, development, development and passing, which moves through them, not external them" (qtd. in Pepper, 1996, p. 106). Collard (1988) advocates returning to the Earth goddess-revering, non-progressive matri-archies that apparently described some ,traditio-nal, "primitive" social orders (in the same place).

As indicated by Pepper social Ecofeminism can be characterized as, "freeing nature from the abusive male ethos with the goal that it will be regarded as a sustainer of life… which [will] confirm regard for earth and the fundamental interconnectedness of people and nature" (1996, p.107). The accentuation on the between connectedness of person and Nature is the vital idea of Environmentalism; in any case, it tends to be deduced that ecofeminist rehearses are "described by solid tons of manliness which deny, disregard, and endeavor to stifle the upsides of the ladylike" (Drengson, 1991, p. 41).

The abuse of ladies with respect to men and the male''s substandard viewing the female as a delicate animal is the primary contention in a significant number of crafted by writing today that has prompted different discussions among countries. As Ruether (1975) accepts, "Ladies should see that there can be no freedom for themselves and no answer for biological emergency inside a general public whose essential model of connections keeps on being one of mastery" (qtd. in Glazebrook, 2002, p. 13). In a manner we can presume that she dismisses the possibility of control and her point is to search for a general public in which the deep rooted, clashing conversations relating to the unreasonable male dominance over female are settled and there is "correspondence, agreement, and shared relationship" (in the same place).

Getting back to the fundamental subject of this paper, the play begins with an untidy kitchen in which there is no feeling of life as the consequence of Mrs. Wright's detainment following the passing of her better half. As the play continues on, the two other female characters, Mrs. Hale and Mrs. Peters, talk about Mrs. Wright''s adolescent life when she was a lively young lady. Mrs. Hale reviews her recollections when "she used to wear pretty garments and be vivacious, when she was Minnie Foster, one of the town young ladies singing in the ensemble" (Glaspell, 2006, p. 1038). Yet, presently following thirty years of marriage, Mrs. Wright has gone through a ton of changes, the most attractive of which is the difference in way of life as she changed from an energetic young lady to a forlorn housewife. This staggering difference in personality has influenced her to such an extent that all she stresses over in prison are her jam and her cover "to cause her to feel more normal" (in the same place). This, as it were, shows that "Women's worries about the climate get from their encounters of specific issues experienced in private" (Sandilands, 1999, p. xii).

The docile job of housekeeping was the pivotal obligation of the ladies of the time, overlooking some other need and job. In such social orders, as Shiva in her "Women's Indigenous Knowledge and Biodiversity Conservation" contends, a lady was "treated as inconsistent and second rate" (Shiva and Mies, 1993, p. 164). The youngster bearing, kid raising, and housekeeping jobs doled out to ladies in that society are indeed the verification of disregarding women's mental capacities to settle on choices all alone and think basically for themselves. As the title echoes, ladies should stress "over trifles" (Glaspell, 2006, p. 1036) while men's breadwinning job is seen as the profound undertaking. In issue with Mr. Henderson's comment about Mrs. Wright's kitchen as "a decent wreck," Mrs. Hale answers back, "There's a lot of work to be done on a homestead" (in the same place). With regards to that, women's being set in the kitchen shows that it is

"unavoidably women's place" (Hernando, 1977, p. 26); along these lines male presence won't be invited in light of the fact that they "attack and ruin the work done in the kitchen" (in the same place, p. 36). Mrs. Wright yet additionally the two different ladies in the play have experienced a similar desolation a great deal. Following Mr. Henderson's examining Mrs. Hale with regards to her visits to the Wrights' house she replies, "Farmers" spouses have their hands full" (Glaspell, 2006, p. 1036). These assertions express their bustling lives on the ranch and in the house. Somewhere else when Mrs. Hale causes to notice Mr. Wright's character as "a crude breeze that gets into the bone" (on the same page, p. 1041) the area lawyer respects the cool climate of their home as Mrs. Wright's shortcoming saying, "I shouldn't say she had the homemaking impulse" (on the same page, p. 1036). Likewise, women's being compelled to the homegrown, auxiliary, job in the house, either energetically or reluctantly, makes a negative imprint on their person, going them to powerless animals who look for shelter in whatever can make for their misfortune. This issue is clear on account of Mrs. Wright who carries on with a repetitive, childless life wherein the confined canary and its singing are the main methods of endurance. Mrs. Wright's singing "genuine pretty" in her childhood (on the same page, p. 1040) and her vivacious life have been subbed by the unsympathetic existence with the pitiless spouse who stifles the life out of her pet bird and decreases her to tears.

CONCLUSION

To wrap this short examination paper up, we can say that Susan Glaspell's primary endeavor in this play has been a call to free the tyrannized ladies on one section and cast light on the way that individual "is neither expert nor slave to it [Nature], however basically one piece of a complicated framework" (Klue, 2008, p. 1) on the other part. The female characters in her play and their activities "request that the man centric world consider their sentiments and circumstances as more than homegrown trivialities" (Makowsky, 1993, p. 61) and the bird's voice should "dislodge the quietness of a briskly dictator spouse and supplant the hints of the unborn kids" (in the same place, p. 62). Likewise, the intermittent discussions over Minnie Wright's effects, the cover, the jelly, the bird, and so on, are, as per Sander, "not plays however a method of endurance" (qtd. in Carpentier, 2006, p. 26). Similarly, Mrs. Wright's worry over her jelly can justify that "women's concerns are specific… and that women's mindfulness can be rationalized by their clearly clear epistemic establishing in explicit private relations to regular occasions" (Sandilands, 1999, p. xiii).

The meaning of this review was, as a last point, to some degree because of its attention on women's activist issues and in addition, the ecofeminist ties existing in it. Thus, the decision of Ecofeminism was a work to show the brought together objective of Feminism and Ecofeminism in shunning the "advantaged and mistreated gatherings" (Gaard, 1993, p. 1) for the freedom of ladies and Nature. Donovan contends that in the field of Ecofeminism "the control of nature" is "the basic reason for the abuse of creatures just as of the double-dealing of ladies and the climate" (qtd. in Gaard, 1993, p. 174). There-front, Susan Glaspell's "Trifles" is an ecofeminist show-stopper for it, as expressed by King, allows us to see the "connectedness and completeness of hypothesis and practice" of Ecofeminism through its accentuation on the "exceptional strength and respectability of each living thing" (qtd. in Shiva and Mies, 1993, p. 14). What welcomes the ecofeminist assessment of the play is the way that it satisfies the assignment of Ecofeminism by parting from "the dualisms and the manners by which feminizing nature and naturalizing or animalizing ladies has filled in as avocation for the mastery of ladies, creatures, and the earth" (Sandilands, 1999, p. 5).

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POSTMODERN SPECULATIONS OF RELIGIOUS VIOLENCE IN DAN BROWN'S ANGELS AND DEMONS

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ABSTRACT

Science and religion are two systems of thinking that were viewed along centuries as two opposite sides in the understanding and explanation of human existence. The relationship between reason and faith has always complicated and full of opposites till our days, and the wrong policies of the church towards scientists and scientific advances led to the creation of this crack that was never amended. So, in postmodern era, this complexity increased and religious violence of the past came to be reviewed and attacked as further evidence why the religious institution is unfit for leading and is completely unreliable. Brown as a postmodern writer tackles the long standing struggle between religion and science in his novel Angels and Demons (2000). He shows how the Church works hard to suppress the development of science by all means, even by using violent ways. So, the aim of this study is to investigate the element of religious violence in the light of postmodern theory. The paper hypothesis what has mentioned above, the paper ends with a conclusion that prove that the novel could read from a postmodern point of view.

Keywords: science, religious-violence, Brown, Angels and Demons.

LITERATURE REVIEW

The religious element in literature has gradually turned from an element represented with respect and decency into an element of mockery and criticism in by many postmodern authors, one of them is Dan Brown. According to Victoria Nelson (2007) *Angels & Demons* (2000) is more closely related with the classic Monk Lewis Gothic genre of a crazily ambitious, power-mad Roman Catholic cleric's Luciferian climb and fall (88). Alawiyah Hanifa (2019) criticizes Dan Brown's work *Angels and Demons*, in which the Illuminati seek to reintroduce long-forgotten life in an inhumane manner (4). Qassim Salman Sarhan & Alyaa Nadhim Mohammed (2012) says that Brown's *Angels and Demons* is a matter of telling a story by blending fact and fiction in a very current and effective manner (21). The researchers and critics of such investigations attempted to investigate several of the conceptual frameworks inside the novels according to their diverse points of view. But my study is different, it provide an original analysis of the issue of religious violence in the light of postmodern study.

1.1 INTRODUCTION

Religion, like culture, differs according to cultures and places. Religion and the founders of religion have undergone many changes throughout the ages. Several critical voices appeared and many movements arose; all of them fall into one pit, which is religion. The increase in knowledge and science has led to the emergence of skepticism in the religious history of the Western World regarding the validity of the Bible, whether it is a "revealed religion", or not. This point is clarified fully in the work of the philosopher René Descartes (1596–1650), who prefers to offer a critical intelligence than the use of religious conviction. According to Descartes, the source of knowledge is the human's mind and the extent of its relationship with the world. This contradicts the scriptures, which says that the knowledge is from God and revelation. Descartes's philosophy leads to the development of a systematic doubt as a philosophical method of François Voltaire (1694–1778), a French philosopher who contributes to the growth of critical debate based on religion. To end the religious wars, Voltaire urged people to use free thought and reason to reach life. He further explains that "It is the spirit of philosophy that has removed this plague from the world" (qtd. in Jensen15). John Locke (1632–1704), another philosopher, is a religious man who criticizes the mixing between religion and politics; he says that religion is a personal issue, and Church and state must be rendered separately. In the age of Enlightenment, John Lock raised questions which were:

If religion does not emanate from God, where, then, does religion come from? In which human domain does religion have its origin? Is religion primarily an intellectual phenomenon concerned with human thought and reason? Or is it principally an ethical and moral matter concerned with duties and obligations towards the gods and fellow human beings? (Ibid).

There is one unifying concept here that one must notice: these are genuinely innovative methods of looking at religion because they base religious explanations in human psychology rather than in the will of the gods. They are all natural answers in this sense

In the modern west, people have been accustomed to believing the relationship between "science" and "faith" to be paradoxical, supposing an inevitable opposition between them. Westerners, today believe that science is the explanation of the world as an existence that is different from the religious view towards it. Thus, each one of them must compete to prove its theories and gain dominance over the modern civilization. this deep crack created between religion and science extend over the years to the Christian persecution to the scientist Galileo and his eventual conviction for heresy owing to his groundbreaking scientific findings that opposed the church and its prevalent theories concerning the solar system (Nieto *et al* 260).

Mauricio Nieto claims that there is undoubtedly a lengthy and prevalent heritage that portrays the birth of contemporary science as a victory over faith, of observation and experience over supernatural forces, and that implies that Western Europe is the birthplace of an outstanding pattern of reasonable, unbiased, balanced scientific insight in opposition to other people's beliefs and religious systems. However, it is impossible to support the notion that a fresh and novel kind of secular, logical, impartial, and balanced knowledge developed more or less independently in some area of Western Europe. The concept of a "Scientific Revolution" has been challenged, and locating a parent, a location, or a historical event to describe the origins of contemporary science has proven more complicated. There is a wealth of compelling literature on the sociology and anthropology of scientific research that provides us with a much more comprehensive tale today, and one of the major issues in contemporary discussions on the history of science is the question of science's relationship to religion. A deeper look at history shows that spirituality pervades the historical time and the protagonists of the conventional concept of a "Scientific Revolution." The notion that the sixteenth and seventeenth centuries saw the emergence of a new logical philosophy in opposition to faith and belief is unrealistic. The Iberian expeditions to the New World, as well as prominent figures such as Copernicus, Kepler, Galileo, Newton, Boyle, Bacon, and Descartes, are all believed to start a scientific revolution but they also were deeply religious, and their works would be pointless without their theological understandings of the universe throughout most instances (*263*). But this relationship between science and faith is completely altered in the modern and postmodern world where they are usually viewed as opposite to each other rather than different fields of human knowledge.

Over the two past decades, postmodern arguments have occupied the social and intellectual situation in several locations throughout the universe. The aesthetic and cultural theory disputed whether modernism's effect could be found in art, literature, any field or modernism dead and ends, and what type of art postmodernism succeeded and flourished in. After producing new political and social concepts by postmodernist theories such as "Nietzsche, Heidegger, Derrida, Rorty, Lyotard, and others", debates arose in philosophy even though the roots of modernism ended or still alive (Best and Kellner 1). Postmodern philosophers, conversely, argue that emerging mechanisms of change and innovation are already generating a new postmodern civilization throughout the contemporary massive media community and its proponents. They also say that perhaps the era of postmodernity is a new phase of heritage and new socio-cultural creation that demands different principles and processes. The theories of postmodernism claim that postmodernism is produced due to the increase of technologies as media, new types of knowledge, and the development of the computer. It also emerged due to the change in the socio-economic order. Philosophers such as Baudrillard and Lyotard see that the postmodernism development could be explained in the "terms of novel types of information, knowledge, and technologies" (3). For the Neo-Marxist, socio-economic philosophers Harvey and Jameson "interprets the postmodern in terms of the development of a higher stage of capitalism marked by a greater degree of capital penetration and homogenization across the globe" (3). In terms of science and technology, the postmodern era is defined by two main patterns. On the one hand, scientific discoveries and technological creations are progressing at a faster rate than ever before, and some of the most stunning advances have transformed the material ecosystem, as well as a wide range of qualities, attitudes, expectations, and the meaning of the expressions "science" and "technology" for ordinary people. Science and technology, on the other hand, are faced with ambiguity, suspicion, or opposition in regards to some of their most foundational concepts concerning nature, development, human perception, acceptable knowledge-creation techniques, and the function that knowledge should play in determining public policy. This development sparked deep-rooted fears and disapproval by Church's authority (Heise 152).

Angels and Demons (2000**)** is considered the first novel that belongs to the four-book or what is known as "Robert Langdon Series". Brown says that the reason behind his writing the novel *Angels & Demons* was his fascination with the "ongoing battle between science and religion, and the faint hope of reconciliation" (Tobin 14). The argument between science and religion is not a new thing, but it has been rooted since ages. Hence, "*Angels & Demons* is Brown's earnest attempt to reconcile these two forces – science and religion – that in today's culture are seen as completely opposed" (Dunn 136). In the novel, Brown reveals how science is

growing while religion in a retreat and a continuous lagging. In other words, the spiritual and moral side of the human being is in a steady decline throughout the ages, in contrast to that of science which is in a steady increase. As the imbalance between religion and science reaches a point, this would lead to anxiety inside all of people. Yet, Brown wants to get an equilibrium point and provide a solution to reconcile the association between them; his aim is also to make his reader entertain and employ them in a further meditation (Zhu and Zhang 99).

Angels & Demon has altered and broken the whole limitations that the other genres of novels followed. This novel has been written in a way that blinds the traditional manner of the writing that detective stories followed, with that of the science fiction and the Gothic style. He also follows the type of popular fiction, such as terror, suspense, and mystery, which makes this novel similar to a piece of art. As pointed out by Vladimir Nabokov in his article titled "*Good Readers and Good Writers*: "we should always remember that the work of art is invariably the creation of a new world, so that the first thing we should do is to study that new world as closely as possible, approaching it as something brand new, having no obvious connection with the worlds we already know" (Nabokov 1).Using the combination of these elements made this novel appeal to whole people while being famous and civilized tastes. *Angels & Demons* is a praiseworthy piece of art that has produced an enchanting universal full of thrills and suspense. This novel contributed successfully to set up the familiar image concerning the leading and the famous character of Brown's series Robert Langdon, who works as a professor in Harvard; it also paved the way and contributed to the success of the later novels such as *The Da Vinci Code*, *The Lost Symbol*, and *Inferno* (Zhu and Zhang 100). *Angels & Demons*, examines possible interpretations of a number of binary ideas, such as faith and science, humanity and holiness, right and wrong. The next section argues and shows how the Church has continued persecution from ancient times to the present day, trying to return people to the Church whatever it takes, and impose their teachings as they see it.

1.2 DISCUSSION
In addition to increasing the wave of anger against religion in the postmodern era, especially after the year 2000, Brown reinforced this anger by impeding the stability of church ideology by using the conspiracy theories alongside the "interplay between narrative history and fiction" (Maxel 1085). Brown's novels not only contain inadvertent historical distortions, but they also try to uncover or highlight specific information concerning individual historical personalities or religious and cultural organizations, using a distinctive style in order to shake the reader's confidence in historical institutions, alongside supporting the idea and importance of rewriting history. This includes the comprehensive ideological annihilation and exposure of 'secret' organisations such as the Illuminati (Murphy and Matterson 130). Langdon clarifies to Kohler that the debate between churches leaders and science scholars began in the fifteenth century, where a group of scholars in Rome fights the Church, leading to the loss of many scholars in Italy, specializing in astronomy, mathematics, and mathematics and physics. These scholars fear that the Church will monopolize "facts" and threaten the spread of academic enlightenment worldwide. So, this led to create the first secret and intellectual scientific association in the world and calling themselves Illuminati.

The symbol has created by an anonymous artist who belongs to an Illuminati member, in the sixteenth century, in honour of Galileo. This symbol has been considered sacred by the Illuminati and subsequently kept by the so-called Brotherhood and contributed to preserving the symbol and not disclosing it until it gained full strength to face the Church. The main objective of this class is to fight the Church and get rid of it. The Brotherhood considers the principles, superstitions, and dogmas of the Church as the enemy of man. The Brotherhood feared the continuing religious wars and the Church's effect on people's minds who believe in religious myths and legends. This caused to hinder the progress and the development of science. Therefore, the people's future remains unknown, governed by religious wars, just like the wars we are witnessing today. Church has always fought these scholars because of their incompatibility with them. So these scholars established a place for their secret meetings in a very secret hideout called the Church of Illumination. Among these scholars is Galileo Galilei. As Langdon asserts that "Although his data were incontrovertible, the astronomer was severely punished for implying that God had placed mankind somewhere other than at the center of His universe… 'His name was Galileo Galilei'" (*Angels* 69).

The main fear of the Church is the union of religion and science, and this will distract people from the Church, and thus it will not remain the primary vehicle or the main source through which one reaches God and believes in. Galileo is not the first victim of the animosity between Church and science, there are many other Galileo's arrest leads to an increased tension between the Church and scholars, leading to committing many crimes. This anger helped the Church to discover the identity of four of its members, where they were tortured by the Church in the worst ways and even tattooed with the cross while they are alive, "they were branded alive on the chest.

With the symbol of a cross" (*Angels* 70). Then the four scientists are brutally murdered, and their corpses are thrown into the streets of Rome to intimidate others who are trying to join into the Illuminati.

Brown, in the novel, links his character Vetra to that of the historical, scientific figure Galilei. Kohler describes Vetra as a theo-physicist. Through his research, Vittoria explains that her father Vetra tries to prove that science and religion are entirely compatible and harmonious; as in "He hoped to prove that science and religion are two totally compatible fields-two different approaches to finding the same truth" (*Angels* 128). His desire has come to fruition with the creation of "antimatter". One of astonishing invention made by CERN is the manufacture of antimatter. The antimatter theory's history dated back to the 1920s and 1930s. Paul Dirac, in 1928, a British born scientist, formulated the theory of anti-electrons for the first time using the theories of both relativity and quantum mechanics. Moreover, an American physicist called Carl Anderson had uncovered positive electrons in 1932, that ushering in a new era in the study of antimatter, dubbed "positrons". In 1933 and 1936, both of the physicists, Dirac and Anderson, received the Nobel Prize in Physics for their outstanding theoretical explanations and production of antimatter (Zhu and Zhang 137).

Angels & Demons is known as a thriller novel, the critic, David Glover, asserts that "the thriller was and still is to a large extent marked by the way in which it persistently seeks to raise the stakes of the narrative, heightening or exaggerating the experience of events by transforming them into a rising curve of danger, violence or, shock" (Glover 137). According to Cyril Wecht, killing is a crucial theme in *Angels and Demons* and it is reflected in a variety of terrible shapes (Wecht 280). Both of James Carlisle and Jennifer Carlisle say that in his twenty-four-hour day, Brown has caused plenty chaos to make murder investigations and detectives exceedingly occupied as "A drugged Pope, horrifying deaths by branding iron, midair explosion, and most gruesome of all the murder of Leonardo Vetra by Hassassin" (Carlisle 374). Beside the killing of Vetra, other four Cardinals character became the victim of the debate between religion and science. By using his man Hassassin, Carlo could fulfill all his goals. Hassassin kidnaps the four cardinals, and at the beginning of each hour after the eight clocks, he kills them one by one on the four altars of science: "Earth, Air, Fire, and Water" (*Angels* 316). The killer swears to mark each Cardinal with one of the four symbols spread over four churches chosen by the Illuminati class. These symbols are written in Italian, as they are read from both sides. The four Cardinals are Baggia from Italy, Cardinal Ebner from Frankfurt, Cardinal Lamassé from Paris, and Cardinal Guidera from Barcelona. Carlo used the Four Cardinals to distort the enlightened class and their science to prove that the Church is the only guide and vehicle for reaching God.

Carlo tries to distort science and the enlightened class by brutally torturing and detaining the four cardinals and documenting their killing using social media and live TV broadcasts. Brown's novel is critical of media's role in furthering the desires of conspiracy theorists and scaremongers. Advertising media plays a major role in spreading terror in people's hearts, especially after the bloody torture of the four cardinals at the hands of Silas. Moreover, Brown defines the media as "the right arm of anarchy" and "[t]errorism is a political weapon" (*Angels 375)*. The novel has become so openly contemptuous of the methods whereby the political elite exploits media-instilled popular terror as a political instrument.

Carlo declares that the enlightened class and science are like Satan, and nothing unites human hearts like the presence of Satan. He adds that all of the heinous crimes, killing, and intimidation contributed to returning people to resort to the Church, the House of God, as fear brought them back to their homes. He describes the enlightened class as Satan and its followers as demon worshippers. The goal of these Satan-worshippers is to run the government, the banks, and the schools, threatening to wipe out the House of God by inventing misleading sciences. "Apathy is dead. Show them the face of Evil-Satanists lurking among us-running our governments, our banks, our schools, threatening to obliterate the very House of God with their misguided science. Depravity runs deep. Man must be vigilant" (Angels 886). He says that it no longer exists and has not reappeared. It died a long time ago, but its legend is the only one that is resilient and existing. Carlo uses the name of Illuminati to warn Christian people about the danger of science as the Church has done in the sixteenth and seventeenth centuries. It is important to resurrect the ancient demons to awaken the world and rid it of its ignorance. For him, by using violence, he will bring people back to the right path of religion. Brown's position on the science-religion conflict is further complicated and unclear by the fact that the Camerlengo employs cutting-edge scientific technologies to achieve his own objectives. To justify all his stances, Carlo adds that the Church, throughout the ages is watching the science that are getting in its way and criticizing religion. Science has contributed to training the mind to overcome the heart and ethics, and they see that religion is psychedelic for people's mind. He argues confronting the dependence on scientific facts over religious belief as a cultural norm. He adds "the Church has stood by while science picked away at religion bit by bit. Debunking miracles.

Training the mind to overcome the heart. Condemning religion as the opiate of the masses. They denounce God as a hallucination-a delusional crutch for those too weak" (*Angels* 883).

In short, Brown does not value science over religion; actually, his work shows that the author is torn between the two. Whereas Brown allows a dialogue between the prescience of science and the history of religion, he does not overtly stick up with any one of the two faiths. This is undoubtedly part of the broad charm of his writings. However, his works typically promote the idea that science and religion are battle for the exact same objective, namely, establishing God's existence.

1.3 CONCLUSION

Dan brown's novel *Angels and Demons* shows the deep crack that separates the church from accepting scientific advances. He criticizes that the church takes the violent way of shutting its doors in the face of change, and it does not try to reinterpret the past instead of rejecting science for the sake of old religious scholars and saints. Dan Brown sets his novel in the today's Vatican. As the novel traces the disappearance of the candidates to the Pope's position, characters link the violent actions done to the Christian candidates to the violence that the church committed against the Illuminati in the past. Thus, even though the church chose more peaceful approach to address the difficulties and the modern deviation from faith, its violent roots and brutal past incidents can be recalled and reused again. The novel shows that the only real attempt to bridge the distance between religion and science was done by a dead Pope, and that these attempts of his were the reasons behind his murder. The road is, thus, blocked between these two fields of knowledge and it will remain so until each of them begins to think seriously that the other might be right too. However, in his attempts to discuss religion and violent religious roots, Dan Brown shows that the motives behind religious violence are linked to other reasons such as the selfish thinking of holding the only truth, or to psychological reasons such as the need to prove one's value and one's side of reality as the only right side.

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BOOM OF BRANDING

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ABSTRACT

Brand management will play a more significant role in future marketing competition, so research on the brand management is likely to become more meaningful and interesting.

This thesis focuses on brand management. The research question here is if brand management can add value to firms, as well as how to connect brand management with value. When researching this question, it is necessary to research further on the division of brand management which is internal and external brand management. Because a company's add value is from cooperation - connection of internal and external brand management. Only when internal and external brand management work together, closely, may brand management add more value to a firm.

INTRODUCTION OF PRODUCT AND BRAND MANAGEMENT:

Brand management is a function of marketing that uses techniques to increase the perceived value of a product line or brand over time. Effective brand management enables the price of products to go up and builds loyal customers through positive brand associations and images or a strong awareness of the brand. However, branding become more important over time as manufactures and sellers lost face to face contact with their customers. This was due to the appearance of various means of to face seller customer interaction, the brand assured product authenticity and consistency of quality.

STAGES OF BRANDING

Stage 1: Unbranded Goods

In the first stage, goods are treated as commodities and are not branded. An excess of demand over supply usually characterizes this stage. It is most closely approximated by developing countries, and is rarely seen in developed them.

Stage 2: Brand as Reference or Awareness

In the Second stage, competitive pressures stimulate producers to differentiate their goods from those of other manufacturers. Differentiation is achieved primarily through changes in physical

product attributes. Once a brand satisfies the consumer he begins to use the same brand and develops some ideas or thoughts and perceptions about that brand.

Stage 3: Brand as a Bundle of Ideas, Thoughts and images or personality

By this stage, differentiation among brands on the basis of attributes becomes exceedingly difficult as many Producers make the same claim. Therefore, marketers begin togive their brands. This brand was an object at some distance but here incorporation of personal brand makes it more consumers likely personality and so on. The personalities of the consumer and the brand begin to merge and them.

Stage 4: Brand as an icon or an identity

In this stage, the brand is "owned by consumers". They have extensive knowledge about the brand and use it create their self identity

Stage 5: Brand as a perfect position

This stage marks the change to modern marketing. Here, the brand has a complex identity and a interaction with the consumer. In this stage, consumers become more actively involved in the brand creation process. They are willing to interact with the product or service in order to create additional value.

Stage 6: Brand as a Policy

Few companies to date have entered this stage, which is distinguished by an alignment of the company with Ethical, Social and political causes. Consumers commit to the firms that support the causes favoured by the firms that support the causes favoured by the company by purchasing from the firm. Through their commitment, consumers own the brand.

TOP TRENDING BRANDS

Coco cola (Beverages)

Microsoft (Computer software)

Toyota (Automative)

Intel(Computer Hardware)

Disnep (Media)

Mercedez Benz (Automative)

BMW (Automative)

Sony (Consumer Electronics)

Google (Internet Services)

Nike (Sports ware)

Apple (Computer Software)

Dell (Computer Hardware)

Canon (Computer Hardware)

Philips (Diversified)

E-Bay (Internet Services)

Harley-Davidson (Automative)

Accenture (Computer Services)

AXA (Financial Services)

Gucci (Luxury)

IBM (Computer services)

TOOLS FOR BRAND COMMUNICATION

Advertising

Events and Campaigns

Sales promotion

Direct Marketing

Publicity and public relations

Viral Marketing

Advertising:

It is indeed the most common means of Brand Communication. Branding see view some as banners, posters, television, commercials, radio, advertisements, videotapes, Nowadays new modern marketing like that E-advertisements through social media such as you tube, face book, Instagram, etc…..

Events and Campaigns:

We have for long seen brand sponsoring evens like the world-cup cricket, football like that many number of Tournaments, etc. This companies sometimes organize the own events like them. For example, the brand sponsoring world cup cricket will have its name appear everywhere the name or news of the world cup goes. Secondly by attaching itself to something big the brand convices the customer that it is itself a big brand and this therefore adds trust in his mind for the brand.

Sales promotion:

This includes all the marketing gadgets used by companies to directly promote their sales like exhibits, demonstration, rebates, free gifts, money discount offers, sale, low interest financing, easy installments etc.. Hence such sales promotion strategies normally work wonders.

Direct Marketing:

These marketing tactics include direct interaction between the salesperson and the consumer.

Telemarketing, electronic shopping and television shopping can be included in this category.

Publicity and public relations:

This tool of brand communication includes activities like publishing a company magazines, annual reports, seminars and speeches, charitable donations, sales meets and sales presentations etc.

Viral Marketing:

It is one of the most effective tools of Brand communication which is becoming very popular theses days. Viral marketing is where a pieve of information or communication goes from one mouth to many and from them to even many more till the whole piece of information spreads like a virus. This is specially the case with word-of-mouth campaigns where one consumer says something about a brand to many who further spread good or the bad word. Such campaigns are often effective in India as here people believe a lot in word-of-mouth. Viral Marketing is at a developing stage but is growing rapidly.

6 reasons why a strong brand is important for your small business
Branding improves recognition. ...

Branding creates trust. ...

Branding supports advertising. ...

Branding builds financial value. ...

Branding inspires employees. ...

Branding generates new customers.

Importance of Product and Branding
Beyond just a memorable logo, good branding increases the value of a company, provides employees with direction and motivation, and makes acquiring new customers easier. A brand represents the sum of people's perception of a company's customer service, reputation, advertising and logo.

Branding increases business value

Branding generates new customers

Creates trust within the marketplace

Improves employee pride and satisfaction This some points are importance of Branding.

Rural market accounts for nearly 70 per cent of India population and 50 per cent of the country. With the urban market getting saturated, rural India often acts as bait for companies. However here life revolves around deep-rooted community values, joint families and social customs and taboos and hence marketers have realized that entry in the rural strategies as in this place, the rules of the game are different.

The good thing about the market is that it is witnessing a wave of change. With more and more people leaving for jobs and getting regular income, the disposable incomes among villlagers has increased and consumer

goods are being preferred. Also, with the youth becoming the opinion leaders, the companies know that any change would be acknowledged and appreciated.

What Marketers must realize is that a rural campaign just a campaign to introduce a new product, but a campaign to replace or remove old habits and lifestyles, for example cleaning teeth with neem and washing hands with ash. Some products as like that huge customer base which will have the highest brand recall for a long time because of the campaign.

Similarly, the rural market is very heterogeneous, with a variety of languages and cultures. What is accepted somewhere, might not work in other place communication has to be direct and in local languages. Hence companies not only customize their campaigns but sometimes also their product names.

Finally, there is the availability issue. How to develop an efficient supply chain to ensure uninterrupted supply in wide-spread rural areas.

Brand Repositioning

It is changing the positioning of the brands. Sometimes certain positioning of the brands.sometimes certain positioning does not work for the brand and hence the company tries to reposition it. Cadbury Dairy Milk is a classical example of a repositioning exercise where earlier the chocolate was targeted at children. When the market got saturated it started targeting youth with the campaign. These days it is trying to position itself for the entire family and to take the place of traditional due to them.

Increased Market penetration

Increasing Relevance to customer

Making Brand Contemporary

Change in market or market conditions.

SUCCESSFUL BRANDS AFTER REPOSITIONING:

Hutch to Vodafone.

Hero & Honda.

Dabur

Snap deal.

Godrej.

Airtel.

Axis Bank

India Post

The brand repositioning is successful when the business sees steady or increased customer flow. This means the customer base has accepted the changes.

CONCLUSION:

The Branding and product management plays a major role in the current competitive market. It not only establishes a brand but also sustains the brand and product in the market. Rural areas which have become brand conscious add fuel to the significance of branding and product management.

This also has opened a door towards better marketing and best customer delight, instead of mere satisfaction.

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PROMOTION OF GENERAL INSURANCE BUSINESS PRODUCTS IN INDIAN RURAL SECTOR

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ABSTRACT

More than 70% of Indian population belong to rural areas. Agriculture is the backbone of our economy and maximum of the food grains, vegetables, fruits are produced in rural areas. Not only agriculture rural areas are also well associated with pisciculture, livestock farming and poultry breeding. A lot of rural based industries like handloom, manufacturing of clay based ceramics, embroidery crafts, metal castings etc are getting popularity now a days. So people in rural areas are exposed to a lot of accidental hazards because of their nature of work. An unfortunate accident may cause loss of lives, loss of properties and loss of income. So there is a great need of insuring them against such mishaps to look after their future and family members. For this, the need for marketing of insurance products in rural areas has been increasing day after day. Different distribution channels have been operating to tap the rural market which is still in nascent stage. Skilful and knowledgeable agents must provide the actual and truth information to the customers. They should not make any false promises. A personnel selling is the most effective way to promote such products in rural areas than advertising. Panchyat members, self help groups, micro finance institutions, cooperative societies, rural bank branches are also important pillars in this regard. The size of the rural market is huge. Promotion of insurance business products in rural areas is exciting as well as very challenging job. Though there are a lot of hindrances in rural areas but in recent times with the application of technological development the people in rural areas are receiving excellent insurance opportunities. The initiatives from the government are also commendable while implementing different insurance schemes for the poor households in rural areas for free of cost or very minimum premium. It is true that the demand for insurance in rural areas is very less in comparison to urban areas but rural Indian market has greater opportunities as urban market is almost saturated. With the overall growth of national economy, the purchasing power of our rural customers will also grow.

Key words: Villagers, marketing strategy, seasonal demand, distribution channels, underwriter

INTRODUCTION:

Rural insurance is the protection of the citizens residing in rural areas against specific perils in exchange of regular premium payment. Peril is the cause of loss which can be natural disaster or manmade. There are two types of insurances available: General insurance and life insurance. Traditional life Insurance policies cover only the life risk of the person insured whereas general insurance covers any other risk except life risk. Life insurance has a component of savings but general insurance has no such component. So the premium once paid for purchasing general insurance products cannot be refunded at the end of policy year. And this is the most restricting factor to promote general insurances in rural areas though there are about 200 various general insurance products available including motor, fire, engineering, personal accident, mediclaim, crop, livestock and miscellaneous. As there is Government compulsion to have motor insurance policies before plying the motor vehicles on road so in rural sector the maximum of the general insurance premium comes from selling motor policies. As the people in rural areas are devoid of various resources including financial resources so this research work is conducted to make them aware of various insurance products, government's insurance schemes, introduce them with distribution channels, and provide them insurance coverage with minimum premium which they can afford. This study focuses on the ways to promote various general insurance policies to the clients in rural areas and the challenges behind this process. To penetrate deep into the rural market tailor made products may be applied as per the need of the individuals and their choices. Once the trust of the villagers are acquired while providing efficient insurance services then they may recommend others to purchase such insurance policies which is the most effective way for promotion of insurance policies. Conducting regular meetings with the villagers and discussing them the features of the policies, terms and conditions is to be judiciously followed. Good relationship with the persons who have strong influence over the villagers can have a positive impact.

METHODOLOGY:

Secondary data collected randomly from different sources pan India basis including books on rural insurance and some of the articles published in reputed journals. A survey report of insurance awareness campaign in rural

areas conducted by National Council of Applied Economic Research in 2011, sponsored by IRDA, the regulatory body of insurance business in India has also been taken into consideration.

What is rural insurance?

Rural insurance is basically for the rural public to insure their lives and properties against unforeseen occurrences. This is the way to make their future financially stable. Maximum of the time it is seen that the residents in rural areas are suffered due to loss of cattle, damage of crops, theft of properties and loss of lives. But with the help of insurance they are financially indemnified after such loss. But rural insurance is actually different from conventional insurance in terms of sum insured, premium amount. So the determinants in rural areas will be much more focused. With proper strategy and guidelines the insurance coverage may be extended to maximum of the poor households in rural areas as this is a very large market base.

Rural insurance in India:

The distribution of rural households' occupation is showing in the following pie chart. (Data being collected from the survey report conducted by NCAER)
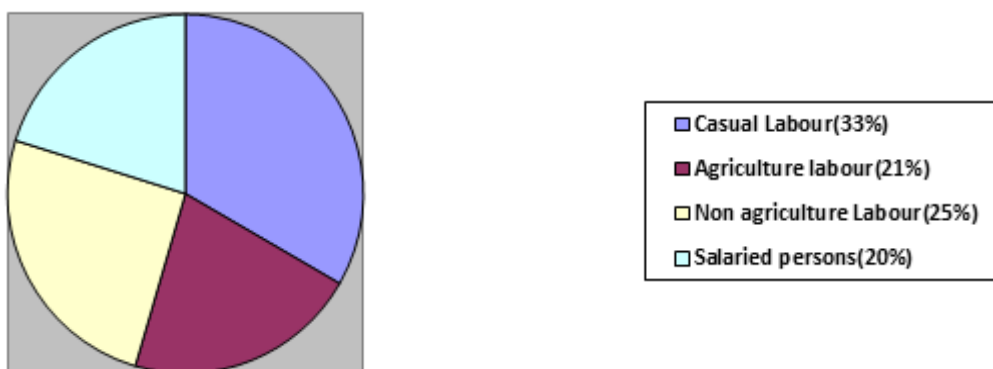
There is no regular income for the rural people but the need for insuring them is the utmost important because of their occupational hazards and natural disasters. The dwellings where they stay and the properties what they own are also risk prone but a few of them can afford for that. Insurance is a matter of luxury for them. Sometimes the assistances from the government also do not reach to them because of unawareness. In this circumstance it is the responsibility for the insurance companies to reach to them and make them aware of insurance. Providing them suitable insurance policies with low premium is the target to make them independent and living life peacefully.

Rural insurance in other countries:

India's insurance penetration is 3.7% in 2020 which is lower than that of the world average of 6.33%. Insurance penetration in India is higher than that of some of the South Asian countries like Pakistan, Bangladesh and Sri Lanka. Insurance penetration is measured as the percentage of insurance premium with gross domestic product (GDP).

"In recent years the European Union is considering an integration of risk management with analysing risk and crisis management strategies to provide an improved response to crises in the agricultural sector". (Source: the article "Risk management and Agricultural insurance schemes in Europe by JRC Publications respiratory, 2009)

Multiple peril crops insurance (MPCI) is followed all over the USA to support farmers where package benefits are provided.

China is the second biggest agriculture insurance market in the world. Here the premiums for crop, forestry, livestock and aquaculture insurance have risen fast as there is considerable subsidy from government. (Source: the article "Agricultural risks in China by Jacqueline Chen, Yan Ge, 2020)

Challenges faced while promoting insurance products in rural areas:

Most of the rural households think that insurance is irrelevant. They do not feel the need for insurance. Some of them are discussed as below:

- Lack of transport facilities is the most challenging aspect to provide services to the rural households. It also prevents the rural public to reach to the cities to receive various goods and services including insurance.

- Villages have less population density. As a result mass insurance coverage in remote areas is quite impossible.

- The type of market in villages is of heterogeneous. This is also a burden to achieve total coverage target due to varieties of interests.

- Inadequate income is the financial constraint for the farmers to pay premium for buying insurance policies and even renewing them timely.

- Seasonal demand may also pose complications. Only during the time of crop harvesting the farmers have money in their pocket and afford for insurance policies.

- Lack of education is another restraining factor which makes the inhabitants to remain unaware of various benefits. To understand the policy details it is very necessary to make them educated.

- Superstition is the big curse in rural areas. People think that if they buy an insurance policy then loss will occur certainly. So it is better not to insure themselves and their properties.

- Lack of infrastructure in villages is really a problem for the residents there. The basic amenities like roads, buildings are crucial for development in all aspects.

- Villages have lack of skilled personnel. They are the main pillars for advertising insurance policies. They held meetings; provide discourses in insurance with local languages.

As per the Survey conducted by NCAER the reasons for remaining uninsured by rural households with their percentage is given in the following table:

Reasons for not having insurance policies	Percentage
Not so important	24.1
Very expensive	54.9
Limited products	30.5
Bad customer services	10.7
Location problem	17
Typical policies	10.4
Complex procedure	10.5
Inappropriate distribution channels	2.8
No trust in insurance	9
Inadequate sum insured	3.4
Any other	8.7

Opportunities in rural areas:
In spite of various challenges faced, there are varieties of opportunities in rural areas for insurance business which are as below:

- The rural market is very large as there is huge population. So with the use of proper strategies we may procure the rural market with huge premium and extensive benefits for   the villagers.

- Now a day everyone is using mobile phones with internet facility which makes the world in their hands in a corner of a cottage. This increases awareness level of the public.

- In villages customers are loyal. Once they buy insurance policies from one company, they generally stick to them.

- Govt. help vide issuing different insurance schemes for the poor is deserving praise.

- Initiatives from micro finance institutions, SHGs has also been increasing in providing insurance services to the rural people to look after their future.

- Rapid increase of literacy level is a beneficial factor for the development. It becomes easy to deal with the literate people.

Role of agents in rural areas:

An agent helps in selling insurance policies and providing services to the customers. Agents work on behalf of insurance companies. They have a greater role in promoting insurance products in rural areas as their exposures are high. They are personally in touch with the public in their locality or outside. In addition to issuance of fresh policies they also help in renewing them. Filing up and submission of insurance documents like proposal forms, claim forms are also facilitated through agents. Now a day maximum of the agents is offered with CSP (Customer service point) facility where they act as a branch office of insurance company. Immediately after receiving premium there the policy is generated. Even claim services are also offered there without prejudice. This is quite relevant in rural areas as it is not possible for the insurance companies to reach at the nook and corner of the geographical areas with their entire infrastructure. The commission/ incentive percentage payable for rural insurance products should be maximised to make it lucrative for the agents, brokers or other mediators.

Govt's initiative:

Government of India has introduced various insurance schemes throughout the country. Some of them are given as below:

- **Pradhan Mantri Fasal Bima Yojana (PMFBY):** It is the insurance coverage of the crops being produced by the farmers against failure to yield out of unforeseen events. Farmers will receive financial support from the insurance companies in case of loss of agricultural crops. The premium is paid by the Government. Farmers need to register their names in the defined area offices.

- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):** This is a government sponsored life insurance scheme. People between the age group of 18 to 50 years can avail this benefit with an annual premium of Rs330.00. They should have one bank account and the amount will be automatically debited from the account. The policy will cover death due to any cause. The nominee will be paid Rs2 Lakh.

- **Pradhan Mantri Suraksha Bima Yojana (PMSBY):** This is another government sponsored scheme for the citizens. People between the age group of 18 to 70 years can avail this benefit with an annual premium of only Rs12.00. The premium amount will be automatically debited from the bank account. The policy will cover death and disablement due to accidents only. The nominee will be paid Rs1 Lakh in case of disablement and Rs 2 Lakh in case of death.

How to promote insurance products in rural areas:

Marketing of insurance policies in rural areas depend on the social and cultural habits of the inhabitants. There should be different strategy for promotion of insurance products in rural and urban areas. The pamphlets, wall paintings, banners, posters, flexes should be widely used in local language for easy understanding. The role of mass media like radio and television in promoting insurance products is immense. The application of advertisement commercials in television has a huge impact over the rural population as maximum of them watch television in their adobe. Arbitrary application of internet may make this effort to a significant level as mobile phones with internet have reached to almost all citizens including those who are residing in rural areas. As the literacy ratio in rural areas is less, so newspaper advertisement is not effective here. Installation of insurance stalls in village fairs, social function, festivals can play a useful role to cover maximum of the rural public including their properties under the umbrella of insurance.

Role of insurance companies:

Insurance companies not only provide safety and security to individuals but they promote economic growth. They facilitate transferring the risk from insured to insurer. But the insurance companies must equip themselves in terms of infrastructure and manpower to provide fundamental requirements of business to the households. Proper training to the distribution channels, underwriters are also expected. The terms, conditions and policy wordings should be understandable to the public. After the payment of premium policy should be issued hackle free. The claim service is to be quick and should be maintained with efficiency. After the nationalisation of general insurance companies in India in the year 1972 there are total 33 general insurance companies including six public sector undertakings operating now throughout the country to provide services.

Some of the rural insurance products:

(i) Janata Personal Accident policy is provided with an annual premium of Rs15.00 for Sum insured Rs 25,000.00 to cover accidental death benefits and /or permanent total disablement. Any person between the age group of 10 to 70 years can have this policy irrespective of occupation, income and gender.

(ii) Nagarik Suraksha policy is provided to compensate for accidental injuries and/or reimbursement of expenses incurred at hospital as a result of accidental injuries. Minimum Sum Insured is Rs One lac with an

option of enhancement of minimum limit of sum insured in multiples of Rs 25,000/- up to a maximum of Rs5,00,000/-.

(iii) Universal health insurance policy is a Group Health Insurance scheme. Minimum age is 3 months for entry and maximum is 65 years for enrolment. The benefits for family will operate on a floater basis. The maximum SI is Rs30, 000.00 and annual premium is Rs300.00 and Rs450.00 for individual and family respectively.

(iv) Livestock insurance policy covers death of cattle due to fire, natural perils, accidents or diseases during the policy period subject to the terms, conditions and exclusions of the policy. The insurance coverage may be extended to the personal accident coverage of the farmers. Premium depends on the value of the animal.

CONCLUSION:

Total rural population in our country is 83.3 Cr as per Census of India 2011. So there is an excellent market for insurance business in rural sector of our country in addition to the needs of the risk exposed villagers. The strategies followed for promoting insurance products are not same for all areas. It changes according to the needs of customers which further vary as per their domicile. Rural market has to be explored extensively through the middlemen. As the income level of rural public is low so they cannot afford huge premium for purchasing an insurance policy. In rural areas steps are taken to lower the premium amount by reducing the sum insured and management expenses. In some of the policies the Government service tax (GST) is also relaxed. Lower premium amount in policies does not compromise with the utility of the insurance product and its effectiveness on the buyers. In today's world information technology plays an important role in every business. Insurance sector is not different. IT helps in better risk estimating, enhanced customer service, interruption free communication and best managerial decision taking. As the area of rural sector is very diverse so the limitation of this study is that the methods and ways for promotion of general insurance business products change very drastically. Though there are challenges but opportunities will also come over time. The awareness level has also been taken into consideration. When the rural inhabitants are aware of insurance then they will show interest to understand the policy coverage and conditions. The insurance companies and their distribution channels have a major role to play. "Rural India is the real India". The progress of our country will be continued when the future prospect of the rural people will be certain and sufficient.

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HISTOLOGICAL EVALUATION USING FONTANA-MASSON STAINING ON DEPIGMENTARY DISORDERUSING C57BL/6 MICE

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ABSTRACT
The present study considered to evaluate vitiligo activity of medicinal herb in experiment model of C57BL/6 mice. leucoderma is mainly depigmentary disorder affecting very small population of word. C57BL/6 mice were divided into four groups. 40% Monobenzone cream applied daily for induction leucoderma in mice. Euphorbia hirta extract and Punica granatum extract administered for 65 days. At the end of study 6 mm circles of ear tissue were collected. All tail and back skin were removed. Some samples were stored at 80^oC for further tests. Same dorsal skin samples were collected and placed in 10% neutral buffered formalinto histological analysis. Samples also were used to evaluate depigmentation, epidermal melanin levels, measurement of TNF-α level and histological analyses. Monobenzone appliedgroup showed decreased level of melanin mean while plant extract treated group showed increased level and TNF-alpha level increased in control group and test groups shows the reverse action. From this result we conclude that both plants have vitiligo activity.

Keywords: Leucoderma, TNF-alpha, Euphorbia hirta, Punica granatum, melanin.

INTRODUCTION
Vitiligo (leucoderma) is the most frequently occurring depigmentary disorder affecting approximately 0.5–1% of individual world wides. It can develop at any age, although half of the patients have vitiligo before the age of 20 years. There are no differences in prevalence according to sex, skin type, or race. Vitiligo develops in women at an earlier age and there are marked geographic differences since prevalence rates. The exact pathophysiology of vitiligo is still unknown. In many countries where whitening of the skin is associated with infectious diseases such as leprosy vitiligo has carried many misconceptions. Vitiligo is associated with patients' lower self-esteem and experience of feelings of embarrassment, humiliation and fear of rejection, leading to social isolation[1].

Euphorbia is employed as a constituent of certain asthma preparation, including antihistaminic Elixir N.F. Dr. M.C. Koman says "it has been found by me very beneficial in case of asthma. Tincture of the drug was given in 15 to 30 drop doses in case of asthma and bronchitis in the hospital with very beneficial effect". It is also an antidote to poisons. Locallyit is applied for the cure of ringworms. This is popular remedy for cough, asthma, bronchial affections and disease of the respiratory passages generally. The juice of the plant is given in dysentery and colic, and milk applied to destroy warts. It is sometimes prescribed in gonorrhea. The plant is widely used in West Africa as a medicine. According to Dikshit and Kameshwar Rao experiment conducted on cats, dogs, and rabbits, with and without anesthesia, show that the drug has got a fairly marked action on the respiratory system. Depressing the respiration and producing a well-marked dilation of the bronchioles. The drugproduces a local irritation of the stomach when given by mouth in large doses and produce nausea and vomiting. It has depressant action on the movement of intestine [2-4]. The present study gives the systematic evaluation of anti-leucoderma activity of medicinal plants.

Material and MethodsAnimals
C57BL/6 mice of 4 weeks age were used for this study. The entire animal was housed in well ventilated condition of 12:12 hr light and dark cycle. They were free access of feed and waterduring before starting the experiment. The experiments were carried out according to the guidelines of the Committee for the Purpose of Control and Supervision of Experiments on Animals, New Delhi, India, and approved by the Institutional Animal Ethical Committee at our institute registration no. 1268/PO/E/09/CPCSEA.

Preparation of E. hirta extract
A hundred grams of Euphorbia hirta leaf powder was extracted by maceration in 400 mL of methanol for 14 days with frequent agitation. The mixture was filtered through clean muslin cloth followed by double filtration with Whatman No. 1 filter paper and the filtrate was concentrated by rotary evaporator with vacuum at 50 °C, poured in glass Petri dishes and brought to dryness at 60 °C oven. The percentage yield of the crude extract was determined as11.1%. An appropriate concentration of the extracts was made in distilled water and with Vaseline for studying antihypertensive effect and effect in treatment of vitiligo respectively[5].

Experimental protocol
C57BL/6 mice at 4 weeks of age were divided into six groups, 4–7 mice in each group. Group I: Control group topically applied daily respective application of Vaseline, Group II: 40% Monobenzone cream + Vaseline on the 2x2 cm shaved abdomen

Group III: Euphorbia hirta extract + Vaseline topically applied Group IV: Punica granatum extract + Vaseline topically applied

Animals had the dorsal region shaved, approximately 24 h before start of experiment. Monobenzone 40% was freshly prepared in non-ionic cream was daily applied (50 mL, for 50days) to the dorsal region (2 x 2 cm2) on the same site near the tail. Creams were massaged until completely absorption using a spatula. In a different dorsal region (near the neck, 2 x 2 cm2), Vaseline, or extracts of Punica granatum and Euphorbia hirta 10% (daily, twice a day) was applied and massaged until completely absorption. All treatments were carried out for 65days. Animals were euthanized after completion of treatment of 65 days, and 6 mm circles of ear tissue were collected. All tail and back skin were removed. Some samples were stored at -80 0C for further tests. Same dorsal skin samples were collected and placed in 10% neutral buffered formalin to histological analysis. Samples also were used to evaluate depigmentation, epidermal melanin levels, measurement of TNF-α level and histological analyses (Hematoxylin–eosin and Fontana-Masson staining)[6].

Determination of epidermal melanin levels
Tail samples were submitted to melanin assessment. Previously, epidermis was separated of dermis with 20 m Methylene diamine tetraacetic acid (EDTA) solution (37 1C, overnight). It was added 0.5 mL of RIPA buffer (1 M Tris buffer, 4 M sodium chloride, 20 mM EDTA, 1% triton, 0.1% sodium dodecyl sulfate, 0.5% deoxycolate sodium and H2O Milli-Q), homogenized and centri- fuged (12,000 x g, 20 min, 4 1C). Supernatants were separated and 20% dimethyl sulfoxide (DMSO) in 1 N sodium hydroxide (NaOH) solution was added to pellet and kept boiling until the pellets dissolved. The melanin levels were determined colorimetrically using a plate reader (EL808; BioTech Instruments, INC) set to measure absorbance at 470 nm. Curve of synthetic melanin was used as reference. Concentrations were normalized to total protein content in supernatants, which was determined using Bradford protein assay (Bio-Rad Laboratories, Hercules, CA, USA). Results were expressed as melanin concentration (mg/mL)/mg epidermis.[7]

Measurement of TNF-α levels
Amounts of TNF-α in the dorsal tissue homogenates were quantified using ELISA kit (eBioscience, San Diego, USA) according to the manufacturer instructions. Levels of these cytokines in each supernatant were normalized to total protein content, which was determined using Bradford protein assay (Bio-Rad Laboratories, Hercules, CA, USA)[7]

Fontana-Masson staining
Histological sections of back skin were deparaffinized and hydrated in successive baths of xylene and alcohol and stained with Fontana-Masson. Samples were soaked in the solution of silver nitrate for 1 h in an oven at 56 0C and then washed with distilled water. Next, slices were subjected to gold chloride solution for 10 min and then washed in distilled water. Samples were then reduced in 5% sodium thiosulfate solution for 5 min, washed and dipped in nuclear fast red solution for 5 min. Finally they were rinsed in distilled water, dehydrated, and mounted with Canada balsam followed by coverslip[8].

Statistical analysis
The mean ± SEM values were calculated for each group using GraphPad Prism 5.0. One-way ANOVA followed by Dunnett's multiple comparison tests were used for statistical analysis. $p < 0.05$ value was considered statistically significant.

RESULT
Effect on melanin content
Melanin concentration was evaluated on samples from tail skin and all the groups show differences. There was no alteration in melanin content in control group and mice treated with extracts of Punica granatum and Euphorbia hirta 10% topically. 40% monobenzene treated mice showed significant decrease in melanin levels as compared to control group.
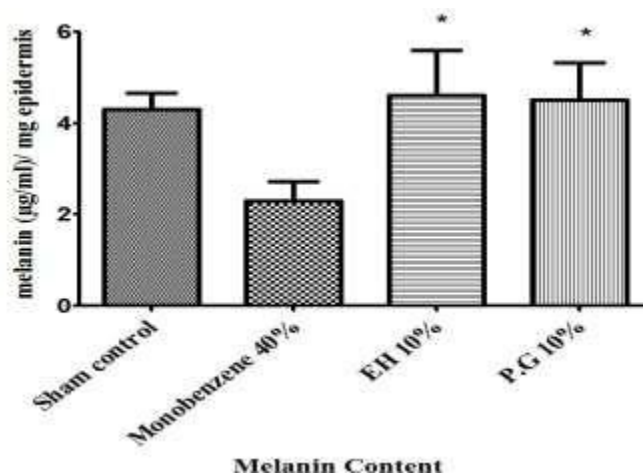
Figure: 1 effect of extracts of Punica granatum and Euphorbia hirta 10% topicaltreatment on melanin content

Values are expressed as mean ± SEM, n=5. All data are subjected to One Way ANOVA followed by Dunnett's test. * $p < 0.05$ when compared to sham control.

Effect on Effect on TNF alpha content
Mice treated with extracts of Punica granatum and Euphorbia hirta 10% topically showed significant decrease in TNF alpha levels as compared to control group. 40% monobenzene treated mice showed significant increase in TNF alpha levels.
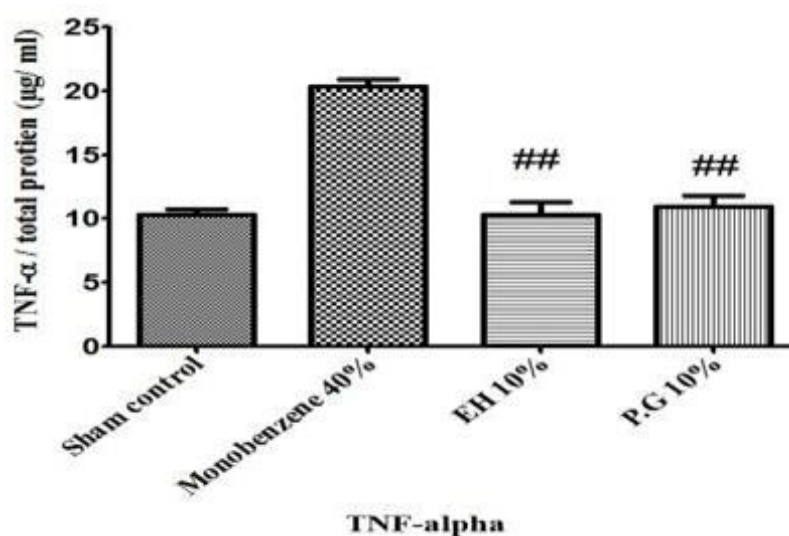
Figure: 2 Effect of extracts of Punica granatum and Euphorbia hirta 10% topical treatment on TNF-alpha content

Values are expressed as mean ± SEM, n=5. All data are subjected to One Way ANOVA followed by Dunnett's test. * $p < 0.05$ when compared to sham control Effect on Histopathology

Histology of back skin samples stained with Fontana-Masson and melanin was marked in brown color inside the hair follicles. As observed in representative figures, monobenzone control group presented low melanin levels (A) .P. granatum 10% (B), E. Hirtatopically (C), and tacrolimus (D) groups showed higher amounts of melanin pigment.
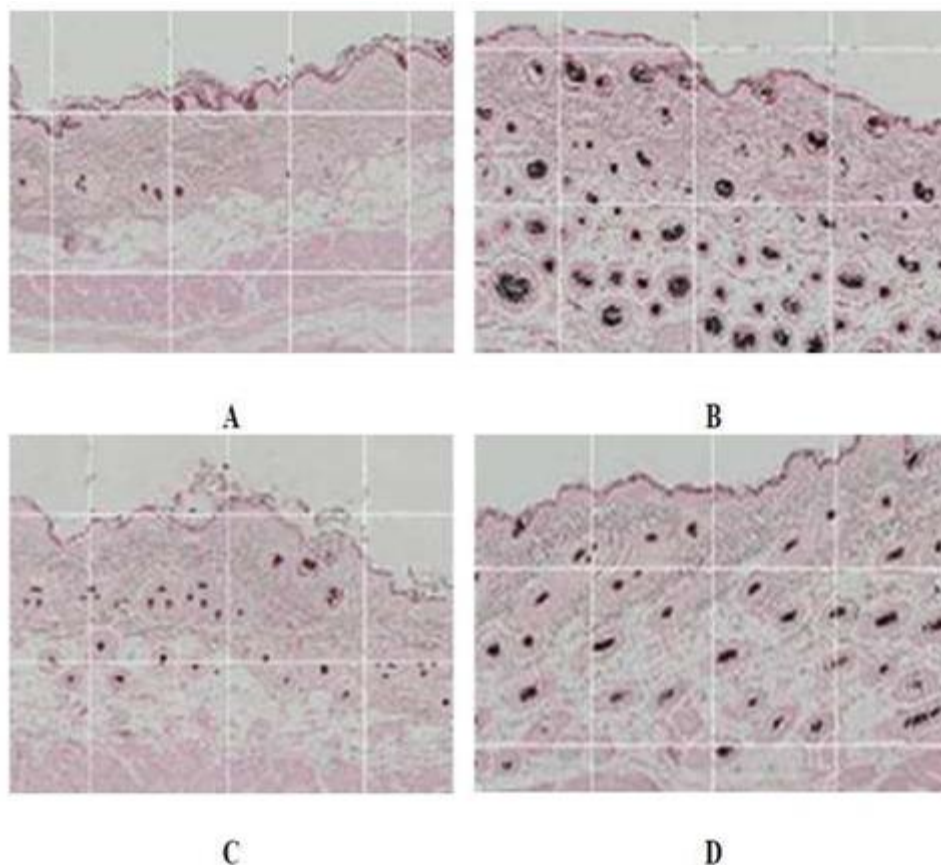
Figure 3: Histological evaluation of melanin trough Fontana-Masson staining.

Representative pictures of melanin contents between, control (A), P. granatum 10% (C), E. Hirta 10% and tacrolimus (D) groups were evaluated on 65th day. Representative pictures of histological sections from back stained with Fontana-Masson indicated that melanin levels were evidently elevated on P. granatum 10% (B), E. Hirta (C) and on reference drug. (200 x ,scale200)

CONCLUSION

Topical treatment with extracts of Punica granatum and Euphorbia hirta (10%) had no effect on melanin levels while TNF-α levels were significantly decreased. Monobenzone-induced vitiligo model has been explained by the structural homology of monobenzone with tyrosine, the natural substrate of melanogenesis. Monobenzone is then converted into a highly reactive quinone by tyrosinase, and the sub products react with surrounding enzymatic compounds within the confines of the mela- nosomal organelle. This reaction induces modifications in the melano- somal enzymes and alters their recognition by T cells, which can lead to the break of the immune tolerance[10]. Besides, monobenzone is capable to synergize autoimmune and reactive oxygen species mediating melanocyte destruction and vitiligo-like depigmentation.[8] In the animal model of topical application of monobenzone there is a systemic immune response to autologous melanocytes and similar vitiligo histological features.[11]

Monobenzone induced TNF-α release is a significant tool to study vitiligo. Therefore, Punica granatum and Euphorbia hirta could avoid this enhancement and probably prevent recruitment of T cells in the skin, IL-8 up regulation, apoptosis of keratinocytes, and melanocytes; contributing to preventing the progression of vitiligo. Our results showed that monobenzone enhanced TNF-α level and evaluated Punica granatum and Euphorbia hirta preparations protected from this effect[12]. Melanin content and histo-pathology studies also support our results.

Oxidative stress is considered one of the key pathogenic events in the loss of melanocytes[13]. Punica granatum and Euphorbia hirta have shown to posses powerful antioxidant activities in vivo and in vitro[14,15]. The antioxidant activity of Punica granatum and Euphorbia hirta may be one of the possible mechanisms for their effect in vitiligo. Over the past years, many studies relate between inflammation and vitiligo.[16] There is presence of low intensity inflammatory infiltrate of mononuclear cells between the upper layer of the dermis and epidermis–dermis interface.[17] Micro inflammatory reaction may be the responsible for triggering local warnings of the innate immune system and precedes adaptive immune responses directed to melanocytes, like

release of many substances, including pro- inflammatory mediators and proteolytic enzymes, including ROS.[18,19,20]

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THE ROLE OF SCHOOL AND COMMUNITY RELATIONS IN EDUCATION

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ABSTRACT
The term 'school' has originated from the Greek word 'Skhole' meaning 'Leisure'. The reason for associating 'leisure' with school is probably due to the fact that in the ancient Greece, liberal education was imparted only to a few selected members of the society. It was not available to all. It was a privilege of the elites or aristocratic people who had enough 'leisure' at their disposal. They had immense amenities to receive liberal education. Education was not vocational, not so much related to livelihood. It was mainly a cultural exercise, a luxurious attainment. The school, therefore, was associated with 'leisure'. A community is a social group, living in a particular given area, sharing a common cultural heritage. Community may be understood as a 'group of social beings living a common life including all the infinite variety and complexity of relations which result from common life or constitute it. Communities can be defined by characteristics that the members share, such as culture, language, tradition, law, geography, class, and race. The relationship between school and community helps to improve the quality of education for all children, parents and other citizens recognize their responsibility for the improvement of quality of education for all children, link with each other for the achievement of goals of school, shared good decision-making and provide an opportunity to improve a positive interaction between schools and their diverse communities, enhance learning outcomes and support, collaboration and wellbeing for the entire school and provide learning environments and deeply united an array of benefits for students, teachers, parents and the wider school. The objective of school and community relations in education is to explain the need and importance of school and community, develop the school and community relations to provide quality education for all the children, encourage the parents to involve in parent teacher meetings to improve educational standards, shares responsibilities and improve the relationship between school and community and involve the community in all round development of the school. The results of the school and community relationship is to provide the school children with the minimum culture for enabling them to lead a happy and rich life, the school children's physical, mental, social, moral, and spiritual development and the knowledge, understanding, skills and attitudes that are necessary for school children all round development and they are useful for their future life.

Key Words: School, Community, Relationship between school and community, Functions of school, Educational standards.

INTRODUCTION
School
The term 'school' has originated from the Greek word 'Skhole' meaning 'Leisure'. The reason for associating 'leisure' with school is probably due to the fact that in the ancient Greece, liberal education was imparted only to a few selected members of the society. It was not available to all. It was a privilege of the elites or aristocratic people who had enough 'leisure' at their disposal. They had immense amenities to receive liberal education. Education was not vocational, not so much related to livelihood. It was mainly a cultural exercise, a luxurious attainment. The school, therefore, was associated with 'leisure'.

In the past the society was simple and life was not complicated. The family provided the child with all the experiences that he needed for leading his life effectively. The child was made aware of his duties and responsibilities, his relationships with other individuals and the environment. Later, the religious functions and institutions, fairs and festivals enriched his experiences. He initiated the life-styles of his parent and fellow members and adopted the age-old vocations and roles of adults in the society. Thus, he was acquiring 'education' through informal agencies. The cultural heritage was being transmitted from one generation to another through ages.

Gradually, society became larger and got complex with the development of civilization. Human knowledge and experience got accumulated over the years. It was not possible on the part of the family, e.g., parents or brothers and sisters to transmit all these cultural wealth to the child informally. Thus, arose the need for formal agency called school and a specialized group of persons called teachers. At first, the home of the teacher was the school where a few students used to stay and receive education.

Community
A community is a social group, living in a particular given area, sharing a common cultural heritage. Community may be understood as a 'group of social beings living a common life including all the infinite variety and complexity of relations which result from common life or constitute it. Communities can be defined by characteristics that the members share, such as culture, language, tradition, law, geography, class, and race.

A Definition of Community by Philip Atkinson (2011) "All Human achievements are first thoughts before they become things. So, the creations of communities such as cities, governments, armies, as well as communal achievements such as conquests and discoveries - everything that goes to make a community-must spring from a community's thoughts. Hence: A Community: is that group of people sharing beliefs that allow a communal understanding which is:

1. Expressed in the Unique Language allowed by the shared beliefs about words, their   meaning and use.

2. United by Agreement on manners, decency and justice, which is the founding morality that dictates the duty of every citizen.

3. Remembered by tradition, which is continued through successive generations by traditional child rearing.

4. Upheld by violence inflicted upon:

5. Citizens who deny tradition by stigmatizing and persecuting them as criminals, and traitors.

Difference between "Society" and "Community"
Ottaway's (1962) concept of society and community: "Society" and "Community" are usually used as synonymous terms. But there is a very fine difference between the two organizations where people live together. It refers to a definite group of people living in a geographical territory and being conscious of their life styles and aims of life. A community also means a group of people living in a geographical territory. But they are not conscious of their life styles and purposes of life. That is why; children constitute the community, not the society. Unless they are conscious of the way their society functions and of their rights and duties as its full citizens, they cannot be taken as members of the society.

According to Ottaway (1962), "A community is everybody, adults and children, social and non-social persons, living in a certain territory where all share a mode of life, but not all are conscious of its organization of purpose. A Society is a kind of community (or a part of a community) whose members have become socially conscious of their mode of life and are united by a common set of aims and values."

A society is, therefore, a part of the community. It is well-organized and specific, whereas a community is not properly integrated and it is general or broad. A Community or Society is never static. Both are dynamic, always changing. But in a society its members are more conscious of their values, needs, hopes and aspirations. The members are socially more conscious and emotionally more organized than those of a community.

Need and Importance of School and Community Relations in Education
The need and importance of school and community relations in education can be explained in the following way.

1. The relationship between school and community helps to improve the quality of education for all children.

2. The relationship between school and community also helps parents and other citizens recognize their responsibility for the improvement of quality of education for all children.

3. The relationship between and school and community link with each other for the achievement of goals of school.

4. The school and community relations shared good decision-making and provide an opportunity to improve a positive interaction between schools and their diverse communities.

5. The school and community relations enhance learning outcomes and support, collaboration and wellbeing for the entire school.

6. The school and community relations provide learning environments and deeply united an array of benefits for students, teachers, parents and the wider school.

Objectives of School and Community Relations in Education
The following are the objectives of school and community relations in education.

1. Define the concept of school and community.

2. Explain the need and importance of school and community.

3. Develop the school and community relations to provide quality education for all the children.

4. Encourage the parents to involve in parent teacher meetings to improve educational standards, shares responsibilities and improve the relationship between school and community.

5. Involve the community in all round development of the school.

Methods and Procedures
For this research paper, secondary data analysis is usually collected from the internet, textbooks, reference books, journals, research papers and various published articles on the same subject.

The Role of School and Community Relations in Education
As the quantum of knowledge increased and different faculties or branches of knowledge started growing specialization took place. Schools with a group of teachers having specialized knowledge and skills came into existence. As the alphabets originated, writing developed and the accumulated knowledge could be preserved in written forms like manuscripts. Subsequently printing technology made it possible to spread knowledge through books and education was made available to all.

Education which was limited to a few could be open to many and the schools were set up in a large number to impart education to all. Thus, education was formalized and schools acted as the formal agencies of education. All children of all the people, in fact, should now go to school and acquire education. Democracy has made it possible to universities education and school worked as an important agency or institution for providing education.

Functions of the School
Gradually, the school has been required to discharge a large number of responsibilities. Most important of its functions are as follows:

1. The accumulated knowledge and culture are handed over from one generation to another with the help of the school. The traditions, customs and heritage are transmitted over years through education. The school provides the child with the minimum culture for enabling him to lead a happy and rich life.

2. The school is also required to generate new culture and renew the old one. It trains children in a manner that helps them to enrich and orient the past heritage through their various intellectual pursuits. On account of these creative activities, the school promotes cultural advancement.

3. The school takes all care for developing whole personality of the child. The physical, mental, social, moral, and spiritual development of his personality is facilitated by different activities of the school.

4. An individual prepares himself for life with the help of the school. The knowledge, understanding, skills and attitudes that are necessary for his future life are taught to him by the school. He is enabled to prepare himself, for playing a number of roles like a guardian of the family, a neighbour of the locality, a citizen of the country, a member of the professional group and so on. He should acquire necessary competence for discharging the responsibilities against these roles.

5. Success of democracy as well as development of the country largely depends on the social efficiency of its citizens. Students have to be trained in effective citizenship in utilizing democratic methods, in enjoying rights and performing duties. The school has to provide adequate facilities for such training and experience in all these spheres which promote social productivity and efficiency of citizens.

Micro-survey to identify the needs of school
The headmaster and teachers should conduct micro-surveys on the school needs and identify the areas for community participation.

Survey on Resources Mobilization
In the micro-survey, the headmaster, school teachers and students should identify resources required and their mobilization.

Resource mobilization
The following resources mobilization are necessary for the school development. They are

a) **Material mobilization:** It includes the identification of materials required for school development such as T.V, computer, tape-recorder, cassettes, musical equipment, furniture, books, agriculture implements,

construction materials, community resources like banks, post-office, public parks, local self-governments-etc.

b) **H.R.D. resources:** It includes the identification of local artisans, professional artists, skilled and unskilled workers.

c) **Financial resources:** It includes budget estimates for construction of additional classrooms, purchase of furniture, purchase of equipment, contingencies and repairs to be undertaken.

The entire process should be carried out involving youth, students and community leaders. At the end of the micro-survey, the headmaster, teachers and students should analyze the data, classify the data under different heads, and prepare a report for utilization of resources. This report should be placed before the school committee, and get its approval. After getting its approval the school general body should meet which includes management, parents, teachers and students and identified community leaders and seek co-operation for utilization of community resources at the appropriate time, for an appropriate purpose. For example, in the general body meeting the issues of land required for school may be raised and the list of donors who were identified may be called and request them to donate either in cash and kind.

School as a Miniature Society
John Dewey's (1970) Concept of the School: The distinguished educationist John Dewey desired "to make each one of our schools as embryonic community life, active with types of occupations that reflect the life of the larger society and permeated throughout with the spirit of art, history and science. When the school introduces and trains each child of society, into membership within such a little community, saturating him with the spirit of service and providing him with instrument of effective self-directions we shall have the deepest and best guarantees of a larger society which is worthy, lovely and harmonious."

According to Dewey, the School is a miniature society. It is a social institution to serve its purposes. It has to train and bring up the students in such a way that the students will be able to participate effectively, efficiently and harmoniously in the society in which they live. The school should reflect the occupations and life styles of the society. Student should be oriented to the needs and challenges of the future society.

K.G. Saiyidain, a renowned writer of education has opined that school should adequately belong to the people for whom it is intended. He observes, "A people's school must obviously be based on the people's needs and problems. Its curriculum should be an epitome of their life. Its method of work must be approximate to theirs. It should reflect all that is significant and characteristic in the life of the Community in his national setting".

According to Saiyidain also the school is an epitome of the society. And as such, it should introduce all kinds of useful activities and significant features of our day-to-day life. Students should be given appropriate learning experiences inside the school which they will face is the outside world afterwards. In short, they will be properly trained in the school to assume rightful places in the society in future life.

Community sets up school for its children's education. It should provide all facilities in the school and should utilize them for any public purpose. Whenever there is need for the same the Community can utilize the physical resources of the school for its benefit—for adult education, for holding meetings and for organizing community programmes. These are called community schools as found in the Philippines, Denmark, England and USA.

Co-operation between the School and the Community
Ryburn (1970) emphasizing the close relation between the school and the community has rightly said, "There must be vital connection between the life or the pupils in schools and the life of the community from which they come. There must be vital connection between the school, which is the corporate life of pupils and teachers and the community. Otherwise, the school can never succeed in its aim of enabling its pupils to go out and to face society and make necessary adjustments nor can it, as a corporate body; even have the vital influence on the community which it ought to have".

In a democratic set up, relationship between the school and the community is essential in the interest of national welfare. There should be mutual exchange of resources and sharing of facilities between the school and the society. The channel of communication should be made free and open for facilitating such co-operation and collaboration. Brubacher (1962) has, therefore, said, "No communication, no community". The bond of cohesion, integration and belongingness is strengthened by communication. Communication promotes the real meeting of minds which facilitates social consciousness. The school should act as an effective forum for communication and interaction of the community.

There are vast resources of the community which can be utilized for improvement of the school. The community, even at the stage of its under-development possesses abundant resources like firms and farms, temples and monuments, flora and fauns, fairs and festivals, rivers and hills which can be utilize for the benefit of the school, particularly, for effective learning experiences. A Community may be backward and poor in economic conditions, but, rich in natural resources. The teacher should recognize these assets for their utilization organizing both curricular and co-curricular programmes.

Similarly, there are local artisans, artists, carpenters, blacksmiths, ironsmiths, painters, etc., whose expertise can be utilized for teaching school children. They can be invited to schools for taking and demonstrating various skills to children even teachers. Retired teachers, doctors, engineers, etc. as well as unemployed educated youths may be engaged for teaching children in their own fields.

Such employment of local resource persons for organizing curricular and co-curricular programmes leads to bring about awareness about the needs, deficiencies and paucity of resources. This helps in collecting funds and supplying necessary equipment, etc. on the one hand, and ensuring better school-community relations, on the other. In the initial stage even, the community provides its club house, temple or church-yard and such other public places for accommodating new schools.

Some disadvantages are also pointed out by a few critics of community participation. They argue that more the community provides facilities for the school; more will be its interference in the school affairs. As such the school discipline and decorum may be adversely affected. The academic activities are also likely to be hampered on account of this.

A Child grows in the community as well as in the school. He learns by living as a member of the community. He is trained to grow in a desired manner in the school and to live his individual as well as community life effectively.

Both the physical and human resources of the school belong to the community. The students, the teachers, and other staff members come from the community all the physical facilities are provided by the community either through government. There should not utilizing these resources for well-being, rather, there are many advantages in programmes of the school should not be carried on in the ivory tower of the school and the learning experiences should not be limited to the four walls of the class-room. The school should provide all kinds of experiences by sharing in the community activities. The services for participation of children in the community work are, for example, literacy drives, health campaigns, road construction, etc. This will break the barriers between the school and the community and make the school life lively, realistic and meaningful.

The school halls can be used for organizing village meetings and marriage reception, the school play-ground can be utilized for village sports and games: the school furniture and equipment can be borrowed for holding meetings and functions. The Education Commission, 1964-66 have aptly remarked that since it is very costly to provide and maintain the physical plant of educational institutions, it is necessary to utilize it fully as far as possible for longest period on each day and for all the days in the year by making suitable administrative arrangement. The libraries, laboratories, workshops, etc. can be utilized for the community programmes.

Community in different Socio-Economic and Cultural Contexts
It is the business of the school to train individuals who will not only be duly appreciative of their culture and the good qualities of national character and national traditions but will also be able to analyze and educate it critically to eschew whatever is weak or reactionary and to develop the qualities of high sense of their duty. Only then they are made to realize that they are engaged in the making of better human beings and a better social order and not merely teaching a dull prescribed syllabus. Emphasing the importance of linking the school life with the life of community, the Secondary Education Commission (1952-53) says, "The starting point of educational reform must be the linking of the school to life and restoring of the intimate relationship, between them which has broken down with the development of the formal tradition of education."

The Secondary Education Commission stresses the importance of close relationship between school and community in these words: "The school will, no doubt, be a community but it will be small community within a large community and its success and vitality will depend on the constant interplay of healthy influences between it and the large community outside. What we would like to see is a two-way traffic so that the problems that arise in the home and community life and the realistic experiences gained there should be brought into school so that education may be based on them and be intimately connected with real life and on the other hand the new knowledge, skills, attitudes and values acquired in the school should be carried into the home life to solve its problems to raise its standards and link up the teachers, parents and children in one compact and naturally

helpful group".

The above views emphasize the influence of school on society and vice-versa. In this process the child should participate effectively in the societal activities to understand his role in social life, and involve himself in social service. By living within the society, the child understands his own duties and responsibilities. He learns his duties and rights. In short, the school should develop civic sense, service attitude and co-operative sensibility among children by organizing community centered activities in the school.

Economic Influence

Community economy will be influencing the business, trade and other commercial activities of the individuals. The child will be keenly observing specifically the economic activities of individual as well as community in general; naturally, he will be attracted towards the trades, commercial and professional activities and develops a opinion about his future. This is seen particularly in rural areas. One of the most important functions of school is therefore to maintain continuity of their aspiration vocational skills by providing them relevant opportunities in the schools and also re-organize and reconstruct their vocational skills and aspiration for the promotion of better socio-economic order. In this connection it is apt to quote the opinion of Connon "If each generation had to learn for itself what has been learned by its predecessors, no sort of economic, intellectual and social development would be possible and the present state of the society would be little different from the society of the old stone age".

Cultural Influence

Community is a social group living in a particular area and sharing a common cultural heritage. Community transmits its rich cultural heritage to the rising generations. It also trains children in a manner that they inherit their culture and preserve it which is indispensable for a successful living in the present-day complex society. The purpose of school in this regard is to hand down traditions, values, and customs of the society and cultural values, from one generation to the other but also try to enrich and modify the values through their own efforts and then help in the establishment of a better and happier society. Along with socio-economic and democratic ideals, schools should plan to develop the cultural values among children so as to enable them to distinguish between right and wrong and vices. School education must develop among children a sense of appreciation of their culture and civilization.

RESULT AND DISCUSSION

1. The school and community relationship provides the school children with the minimum culture for enabling them to lead a happy and rich life.

2. The relationship between the school and community is useful for the school children's physical, mental, social, moral, and spiritual development.

3. The knowledge, understanding, skills and attitudes that are necessary for school children all round development and they are useful for their future life.

4. Students have to be trained in effective citizenship in utilizing democratic methods, in enjoying rights and performing duties.

5. There must be vital connection between the life or the pupils in schools and the life of the community from which they come.

6. The purpose of school is to develop traditions, values, and customs of the society and cultural values, from one generation to the other.

CONCLUSION

The modern school is a community centre and the teacher is the "friend, philosopher and guide" of the people. By organizing the community programmes and providing school resources for the community work, the position of teachers is improved and they gain confidence and respect. It is also contended through utilization of school resources by the community, there will be many disadvantages. The school materials like furniture and equipment will be mishandled resulting in missing, breakage and out of order. There may be undue interference by the villagers in the school affairs adversely affecting the school organization. But, on the whole, the advantages would outnumber the disadvantages which can also be reduced to the minimum with public consciousness, responsibility and experience.

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IMPACT OF BRANDPOSITIONING STRATEGIES ON CONSUMER BUYING BEHAVIOR WITH REFERECENCE TO FMCG PRODUCTS IN HYDERABAD CITY

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ABSTRACT
Brand positioning is an activity of creating a brand offer in such a manner that it occupies a distinctive place and value in the target customer's mind. Positioning is the base for developing and increasing the required knowledge and perceptions of the customers. This research is conducted to see an impact of brand positioning strategies on consumer's buying behaviour. This research is to find out the major marketing promotion strategies adopted by FMCG companies attract the consumers to buy the products, to measure the impact of store promotion on that buying decision and to determine the factors influencing the consumer to buy the food, health products and beverages. In this study used 340 respondents form Hyderabad, Telangana. Convenience Sampling technique was used. Descriptive Statistics, Factor Analysis, and Multiple Regression were used to analysis the data. The outcome of the research revealed that brand positiong strategies like attractive product display, special discounts, gifts, prizes, free items, an in-store television display, in-store radio, vouchers/coupons, the behaviour of sales people and store fragrances has an impact on consumer buying decision/behaviour .

Keywords: Brand positioning, Strategies, Consumer Perception, Consumer Buying behaviour.

INTRODUCTION
In marketing, positioning has come to mean the process by which marketers try to create an image or identity in the minds of their target market for their product, brand, or organization. Brand positioning is at the heart of marketing strategy.

Consumers prefer and frequently purchase the product which is more demand on Fast Moving Consumer Goods (FMCG). These include all different varieties of consumable goods except pulses and grains. Some of the major products in FMCG are soaps, food stuff, oils, beverages ,cleaning products, cosmetics, personal care products, toothpaste, Shampoos, etc., some of the companies are regularly endeavouring to reach the consumers through their groceries and some of the FMCG products.

Few companies are Hindustan Unilever, ParleAgro, Amul, Miraj FMCG, Nirma, Dabur India Ltd, Emami, Haldiram's, Britannia, Gillette India Ltd ,Cadbury India, Modi Revion ,Himalaya Healthcare Ltd, Procter&Gamble Hygiene and Health care, Marico, etc., It is clear that fast moving consumer goods make income in all countries. Using an attractive marketing plan helps the product to move fast. Promotion mix plays a vital role which was applied in various different kinds of elements.

The basic classification and correspondence of brand positioning is based on the differentiation, rectifiable worth, and brand's advantage over other. Copycat/imitator brand positioning only works if the business offers its solutions at a significant discount over the other competitor. Flourishing each and every brand there is always a proper "brand positioning" that is develop in consumers mind to like the product and without it no brand can be that much popular. The effectively of the positioning is concerned it is more or less dependent on the brand's exclusiveness and its attributes that how it will be different for the consumer to consume as the brand position has its cycle that should be develop by marketers to get the product it firstly it should be classified the competition that exists in the industry, secondly the assessing the rival brands that what they have done to position their brand in a current scenario, thirdly it should be in written form that how they will positioned their brand fourthly distinguishing the positioning that is created and documented with the rival brands that exist, fifthly portraying the well defined assessment based brand positioning last but not the least the creation and the execution of the positioning that has been stated and delivering to the target market variety of channels can be used like TVC, print media ,internet, BTL includes the flyers broachers etc.

OBJECTIVES OF THE STUDY
1. To know the Brand Positioning strategies adopted by FMCG industry

2. To understand the Factors influence on Consumer buying behavior while purchasing of FMCG products

3. To know the impact of brand positioning strategies on Consumer buying behaviour while purchasing of FMCG products.

PROBLEM STATEMENT

What is the impact of brand positioning strategies on consumers Buying behaviour in FMCG products?

HYPOTHESIS

H0: There is no significant impact of brand positioning strategies on Consumers buying behaviour

H1: There is no significant impact of brand positioning strategies on Consume buying behavior

RESEARCH METHODOLOGY

Method of Data Collection

Survey method has been used to collect the data from the consumers with the help of a questionnaire, which contains 12questions regarding 12 brands which contain different positioning strategies.

Sampling Technique

Un restricted non-probability sampling was used to collect data from 340 consumers who were brand conscious and do frequently buy FMCG products of different brands.

Area of the study

Hyderabad city has been chosen to collect the primary data. Respondents from Hyderabad city in India has been chosen to collect the data

Statistical Tools used

The tools used in this study were Standard Deviation, Factor Analysis, and Multiple Regressions.

Brand positioning

Brand positioning is defined as the conceptual place you want to own in the target consumer's mind the benefits you want them to think of when they think of your brand. An effective brand positioning strategy will maximize customer relevancy and competitive distinctiveness, in maximizing brand value. Key objectives of brand positioning include relevance, differentiation and credibility/attainability

Brand positioning strategies

- Value-based Brand positioning

- Quality based Brand positioning

- Competitor based positioning

- Benefit positioning

- Problem and solution positioning

- Price Positioning

- Leader-based positioning

Customer perception

Customer perception is a "Process during which an individual acquires knowledge about the environment and interprets the information according to his/her needs, requirements and attitudes."– as defined by F.G.Craneand T.K.Klarke (1994),G.D.Harrell,G.L.Frazier(1998)

Customer perception is a process where a customer collects information about a product and interprets the information to make a meaningful image about a particular product. When a customer sees advertisements, promotions, customer reviews, social media feedback, etc. relating to a product, they develop an impression about the product.

Customer perception or consumer perception plays a major role in buying behavior. Hence companies are going the extra mile to create a pleasant and happy customer experience for its customers. Companies are ready to spend money and effort to influence customer perception and drive profitable consumer behavior.

Consumer Buying Behavior

Consumer Buying Behavior refers to the buying behaviour of the ultimate consumer. A firm needs to analyse buying behaviour for:

- Buyers reactions to a firms marketing strategy has a great impact on the firms success.

- The marketing concept stresses that a firm should create Marketing Mix(MM) that satisfies (gives utility to) customers, therefore need to analyse the what, where, when and how consumers buy.

- Marketers can better predict how consumers will respond to marketing strategies.

REVIEW OF LITERATURE

Kotlerand Armstrong (2004) stated that marketing strategy is important to attract a consumer to buy the product. Marketing strategy is the key to achieving the goal of an organization.

McDonaldM(1992) agreed that developing a good marketing strategy helps in establishing the competitive advantage, build, defend and maintain the competitive advantage.

Ratnatun gaand Ewing (2005) explored that Flanking, Multi branding, Media marketing strategy, PLC Strategy, and wide distribution network are some of the major marketing strategies adopted by some of the Fast moving consumer goods.

Doyle(2002) stated that marketing promotional strategies help in attracting the consumer and some of the store promotional activity makes an impact on consumer behavior.

E.Thangasamy & Dr. Gautam Patikar (2014): The consumers aim at attaining optimum consumer surplus, be it durables or non-durables, while making such purchases to satisfy their wants. Forth is reason, the marketers do continually rely on research studies about the dynamic consumer behaviour to position their product planning and development strategies to meet their requirements efficiently.

D.ARTHI & K.MALARMATHI (Oct2013): Customer playing the three distinct roles of user, payer and buyer differ in their intention towards buying a product, some purchase for need, while some purchase for the wan to status, status seeking consumers are those who give much importance to the non-functional attributes of the product such as beauty, attractiveness, brand, social comparison.

DATA ANALYSIS

1. Marketing strategies adopted by FMCG

STRATEGY	MEAN	RANK
Multi-Branding	5.69	1
Flanking	4.63	7
Promotion Strategy	5.43	2
Media Marketing Strategy	4.89	6
Product Line Building	4.42	8
PLC Strategy	5.40	3
Integrating the Marketing channels	4.40	9
Wide Distribution Network	4.15	10
Store promotion techniques	5.30	4
New Product attraction	5.18	5

From the analysis of data, it was clearly found that respondents rank Multi branding as number one, Promotion strategy plays the second rank in marketing strategy which attracts consumer to buy the products, PLC Strategy and Store promotion techniques are followed by the rank III and rank IV, New product attraction ranks five, Media Marketing strategy ranks sixth in attracting consumer to buy the product, Flanking, Product line building, Integrating the marketing channels band wide distribution network ranks even, eight, nine and ten. These are some of the marketing strategies to attract a consumer to buy the product.

2.

Factors	Variables	Factor Loadings For Components
Physical Factor	Size	.879
	Availability	.863
	Packing	.805
Psychological Factor	Flavor/ Taste	.786
	Freshness	.774
	Brand Awareness	.759
	Life Style	.682
	Promotions	.663
	Free Discounts	.476
	Prizes	.882
Visibility Factor	Protein Content	.871
	Nutritional Value	.835
	Quality	.651
	Dignity	.645
	Brand Visibility	.586
	Relationship Marketing	.652
Internal Factor	Company/Brand Image	.515
	Intended Benefits	.449
	Friend's Recommendation	.775
	Shopkeeper's Recommendation	.806

Factors influence on consumer buying behavior

Above analysis is explained the factors influencing buying Food, Healthand Beverages. Factors loaded are more than 0.4. The first Factor comprises of three components named Physical Factor, Second factor comprises of seven components named Psychological Factor, Third Factor comprises of six components named Efficiency Factor, Fourth Factor comprises of six components named Environment Factors These factors influence the buying behavior of a consumer.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3540.54	1	3452.578	38.859	.000a
	Residual	1598.856	339	89.936		
	Total	5455.250	340			

Coefficients

Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. Error	Beta	T	Sig
1	(Constant)	7.765	.469		16.567	.000
	Attractive Product Display	.080	.007	.331	12.257	.000
	Special Discounts	2.218	.335	.242	6.620	.000
	Gifts	1.084	.262	.161	4.134	.000
	Prizes	1.477	.338	.133	4.372	.000
	Layouts	2.544	.714	.088	3.525	.000
	Signage	2.411	1.170	.094	2.062	.069
	Floor Advertisement	4.405	.656	.166	6.687	.000
	Free Items	1.637	.418	.113	3.917	.000
	In-Store Television Display	0.845	.485	.300	2.967	.003
	In-Store Radio	.072	.007	.128	1.884	.060
	Vouchers/Coupons	1.176	.397	.080	2.844	.000
	Shop Congestion	.537	.285	.087	2.028	.000
	Behavior of Sales Person	.973	.342	.851	.738	.000

	Store Fragrances	1.469	.724	.018	3.548	.000

From the analysis it is very clear that different store promotion activities helps consumer in buying the product.

CONCLUSION

Consumers are attracted to different kind of marketing strategies. Study reveals that some of the strategies to attract a consumer to buy the products are Multi-Branding, Promotion Strategy, PLC Strategy, Store Promotion Techniques, New Products Attraction, Media Marketing Strategy, Flanking, Product Line Building, Integrating the Marketing Channels and Wide Distribution Channels.

Factors which influence the consumer to buy the product are Physical Factor, Psychological Factor, Efficiency Factor, Environmental Factor, and Comfortability Factor. Some of the good store promotions induce the consumer to buy the product. Consumer Buying decisions depends on the Marketing strategies provided by the specific brand.

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RELEVANCE OF TECHNICAL TOOLS AND USAGE OF SMART TECHNIQUES – IN THE HOSPITALITY INDUSTRY

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ABSTRACT:

Hotel industry today is changing remarkably with the implementation of data processing in its foundational to its game plan activities this is due to competition as well as the developing new ideas and practices within the industry. Due to cut-throat situation and dynamic growth in hospitality industry, use of information technology is inexorable. In today's world most of hotels use ICT (Information and Communication Technology) as to simplify their piece of work such as taking reservation, room management, and guest accounting to gain a competitive benefits along with automation in the services they offer for their customers . Now days guest satisfaction like guest stay and accommodation experience can be enhanced with smart techniques used in the hospitality industry. In this paper we will examine the usage levels of smart technologies used in room division by quantitive approach in hospitality industry.

Key words: Smart Technologies; Level of Usage

INTRODUCTION:

Today's generation life style is ruled by smart technologies due to which many organizations have gradually shifted their investment in information technology and technical tools to boost the efficiency of their business. The job satisfaction, quality of work life, more productivity and efficiency in operations will led to less stress and this can be achieved only using smart and information techniques in day to day operation in hotel industry. Especially in room division department in hospitality industry started using smart techniques like reservation and information management system such as central/ computerized reservation system (CRS), automation systems, hotel front office system (HFOS).

LITERATURE REVIEW:

According to different authors in their different research paper they have listed types of techniques and technologies used in the field of accommodation, food and beverage in hospitality industry constitute the main focus of the works in related literature. Content of Studies about Technology usage in Hospitality Industry and Tourism:

YEAR	AUTHORS	TITLE	TYPE OF TECHNIQUES USED	FIELD USED IN HOSPITALITY INDUSTRY
1998	D. Buhalis	Strategic Use of Information Techniques in Hospitality Industry	Central Reservation System (CRS), Global Distribution System (GDS),Websites, Smart Technologies, Reservation Management System,	Room Division , Reservation, Airlines, Travel Agencies.
2011	V. S. Jadhav and S. D. Mundhe	Information Technology in Tourism	Central Reservation System (CRS), Global Distribution System (GDS),Websites, Smart Room Keys	Accommodation,Airlines,Railway
2013	G.Yuksek	Role of Information Technologies in Travel Business and case of Global Distribution System AMADEUS	Central Reservation System (CRS), Global Distribution System (GDS),Websites, Smart Room Keys, Mobile Technology	Accommodation, Airlines, Hotels, Rent-Car Travel Agencies
2017	D. Kim and S.Kim	The Role of Mobile Technology Tourism	Central Reservation System (CRS), Global Distribution System (GDS),Websites, Virtual Reality, Internet of Things (IoT), Social Media	Accommodation, F&B Service, Reservation, Railways, Airlines
2017	I.N.Wanab	Role of Information Technology in Hospitality Industry impact and growth	Central Reservation System (CRS), Global Distribution System (GDS),Websites, Virtual Reality, Internet of	Tour Operator, Travel Agencies, Rent-A-Car,

			Things (IoT), Social Media	Hotels
2017	R.S.Beed and S.Sarkar	A study on the use of information and communication technology in Tourism	Destination Management System (DMS), Decision Support System (DSS), Geographical Information System (GIS),Intelligent Transport System (ITS)	Transport companies, Travel Agencies, Local Tourism Organizations

➢ There is steady growth in several years in domestic and international hospitality industry. The income source for hospitality industry basically through accommodation, food and beverages and other services provided to guests; which is driving factor of global economy. The objective of these developments should be *personalization of experiences and digitalization of service*s. Personalization of experience is important for market services to first time individuals traveling on a limited budget. With using an effective technological platform to manage the interaction between guests and service providers we can achieve effective personalized experience. The aim of digitalization of services is to Metamorphosis digital business model into hospitality services by pushing into guest touch points. A digital service platform provides guests an ability to browse ;plan and pick activities at their own convenience thus facilitating faultless amalgamation of technology into travel experience like booking and reservation services; social media integration.

➢ The future of hospitality industry is being shaped by the current boom in the Internet of Things (IoT) technology. The Internet of Things is the interconnection of everyday physical devices like sensors, identification tags, mobile devices, etc. as they can communicate directly or indirectly with each other over internet. The Internet of Things also enables Hospitality Service Providers (HSP) to increase back-end efficiency of multiple departments like front desk, housekeeping, reservation, sale and marketing in the hotel as well as enact cost saving policies like smart energy management.

➢ Technology is advancing at a faster pace than ever before and this is changing both the expectations of patrons as well as the way in which the hospitality industry conducts its business. Some of the trends in industry are leading to great improvements and savings for hospitality industry, while some changing the hotel developers plan their buildings infrastructure, management structure and staffing requirements.

Objective of the study: To survey and analyze the smart hospitality technologies, the current practices in the hotel industry and the expected developments in this area in the future.

Research Methodology: The study of this research paper involves secondary and primary data. The secondary data consist of published and semi –published sources, including journals and magazines, reports of various committees. The quantitative nature of primary data includes distribution of questionnaire as a sample to examine and measure the level of usage of ICT applications in hotels by gathering numerical data from individuals.

DATA ANALYSIS:
1. **Wi-Fi Infrastructure Overhauls**: As per survey conducted for this research, shows that 73% of travelers wish to have free *internet access* in their hotels rooms while 85% of hotel guests connect *one or more devices* to hotel Wi-Fi within seven minutes of arrival in hotel and 71% of all mobile communication flows over Wi-Fi in hotel.

2. **Digital Conference Facilities** : According to survey conducted for this paper, shows *76.4 %* guest perfer hotel with digitial conference facilities which includes network design such as indoor mobile phone coverages,wi-fi connectivity,as well as all the accompanying AV and digital equipments while doing booking.

3. **Mobile Communication and Automation** : According to survey findings, *88.6%* travelers wish to have rooms with mobile communication and automation which will increase digital interactions with hotel resulting in more personalised experience such as guest's name being displayed on welcome desk at a digital check-in station,any particular preference regarding food,room and similar.73.2% traveler requires facilities such as *Concierge in Your Pocket* or *Automated Concierge* which allow opeartors to include useful information such as surrounding entearainment venues,medical facilities and smiliar other services due to which they are gaining more popularity in today's market.

4. **Near Field Communication (NFC) Technology:** According to studies conducted for this paper *56.6%* increase in use of NFC technology in hotel industry.This technology can be used in personalise a guest's

experience at a hotel.Also this technology could be used to track loyalty points from a guest's use of the room service facilities or anyother hotel services.This opensmany doors for hotels who want to offer a more personalised experience at their establishment.

5. **Robots and Infrared Sensors** : According to study *26.6%* increase in use of Robots and Infrared sensors in hotel industry.Today lots of establishments are making use of this techonolgy in day to day operations.Some best examples are as follows: 1. In Hilton Hotels Connie,the robot,is feature of the front desk department for when no frontoffice personnel is free then works as concierge.2 The first hotel in the world to be entirely staffed by robots,situated in Nagasaki,Japan is Heen-na-Hotel. 3. Hotel 1000,a Seattle based hotel, each of its room has an infrared sensor that detects body heat.If the sensor showsup on the door panel,hotel staff moves on and checks back later ensuring that guests are never distrubed for room cleaning process.

6. **Smart Room And Smart Rooms Keys**: According to survey conducted *82%* guest prefer *smart rooms over traditional rooms*.Many hotels are now moving to keyless entry system designed to provide users with convenience and higher levels of security.Some hotels are now offering their guests RFID-enabled key fobs or wrist bands that take the place of room keys and wallets. Across150 hotels with upgraded 30,000 room locks with this system by Starwood Hotels. Alma Barcelona have taken keyless entry while Nine Zero Hotel in Boston uses a retinal scanning device are good examples of this technology.

7. **Entertainment on Tap**: According to survey shows that 81% of respondents wish to have access to mobile video content at hotel and 85% said that mobile content availability at hotel will be there top priroity while selecting hotel.Today guest technology and entertainment are blended and coming together at swipe of a fingertip.Good example of this appliciation isHotel Alfot introduced Roomcast technology which allows guest to stream content from their devices directly to the television in their room.

Limitations of the study: This research paper is based on the data collected by the hotel personnel and the observations made during the survey. With the due awareness an element of personal bias an attempt is made to analyze the usage of ICT in hospitality industry.

ANALYSIS AND RESULTS:

➢ The top initiatives which guests would like to see in hotels are :

- Capability to select specific room locations (45%)

- Means to share information about in-destination activities (41%)

- Check in- check out process (43%)

- Way to make service requests (36%)

- Information and recommendations for visiting nearby places and attractions (39%)

- Providing additional amenities (47%)

Also during stay, customers have a need for technology to be available in their rooms as follows:

- Wi-FI Connectivity (82%)

- Control the lights and temperature in room via tablets (32%)

- Voice Control System (25%)

- In-room device for entertainment (27%)

The main purpose of technological innovation in hotel services is to facilitate the work of the staff and the stay of the guests to optimize costs, to impress customers with unique experiences and emotions, to create a unique atmosphere.

Major Findings: The applications of smart technologies improve hospitality services when it:

✓ Provides more freedom and opportunity to the direct to control the technological operations in accommodation or room division, independent choice of hotel rooms, individual check in at arrival and check out at departure through a mobile application.

✓ Adds functions for online check in and access to the hotel room through contact free communication techniques.

- ✓ Direct individual offers and suggestions to guests, provides extra comfort and facilitations.

- ✓ Creates and maintains relations with clients through personal advice and recommendation to make their stay in the hotel and destination more interesting using smart techniques.

- ✓ Increase the efficiency of hotel services and others.

CONCLUSION AND RECOMMENDATION:
This research has proposed a conceptual framework to illustrate the influences of technological innovations in hospitality industry. The relationship between the hospitality industry and technology should be balanced and harmonious. Technology adds value, creates amenities, personalizes the stay but overtaking them can destroy the human relationships that guests are looking for and appreciating. A challenge for the hospitality and tourism industry is finding the optimal mix of digital and human interactions to create personalized guest experiences while respecting their privacy. Increasing customer satisfaction with new added value, convenience and comfort by investing in technological innovation should be carefully thought out and analyzed. Its realization should stimulate consumer loyalty and competitiveness of hotel companies.

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REPRESENTATION OF WIDOWS IN INDIAN SCENARIO WITH REFERENCE TO INDIAN MYTHOLOGY, FILMS AND FICTION

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ABSTRACT

The purpose of this search paper is to understand widowhood in Indian society. The areas of study taken into account are widowhood perceived through the ages, socio-cultural and psychological conditions of widows, problems of widowhood, empowerment of widows, the suffering of widows, significance of religious places for widows, and measures leading to improvement in the status of widows. The experiences of Hindu widowhood in the Indian context constitutes social exclusion and marginalization of the woman who has lost her husband. The practice, which is the product of the intersection of Indian patriarchy with the Hindu caste system, aims to total obliterate the widow and render her unnoticed The widow, who is already in a most vulnerable situation as a result of the negative socio-economic and cultural consequences of being a woman in Indian society, is further marginalized. Her sole option for a dignified existence is to follow Hindu widowhood standards, which limit her liberties in terms of dress code, food, social interactions, and sexual conduct.

Keywords: Ethos,Widow,Society,Conditions,marginalization, rituals, chronotopicity

INTRODUCTION

In Hindu religion, a widow is the lowest ranking member of the Hindu social order in India. The word widow in Hindi (the language spoken by the majority of Indians) is vidhwa, which means "one who has lost her sovereign." Few beautiful lines contains that grief:

But deep inside somewhere ,she still feel the same pain

And she will never be the same again

Since losing him that awful day restrain

When part of her was ripped away like rain

On the stage, we saw the Duchess of Malfi (Gemma Arterton) and Antonio (Alex Waldmann) discussing the Duchess's will. The Duchess was no longer dressed in mourning black, but looked elegant and attractive in a dark-brown Jacobean dress hemmed with intricate golden lace. She was not a grieving widow, but a young and lively widow enjoying her autonomy and liberty. This image was stressed by Arterton's charming smile and high pitched voice. Antonio was also dressed in a Jacobean attireWidows' lived realities in holy towns are a largely unexplored area of study, especially from the viewpoint of feminist religious involvement. The aim of this research is to throw light into the politics of widowhood in Indian literature.

A place's social economical, cultural, and spiritual ethos has a significant gendered impact on the formation of culturally distinctive femininities. Gender and gender relations, in turn, have a large influence on the social construction and portrayal of an area.

In India, Hindu widowhood results in social isolation and marginalisation of the lady who has lost her spouse. The practise, which is a result of the confluence of Indian patriarchy and the Hindu caste system, attempts to completely erase the widow existence and make The widow, who is already in a vulnerable situation as a result of the negative socio-economic and cultural consequences of being a woman in Indian society, is further marginalised. Her sole option for a dignified existence is to follow Hindu widowhood standards, which limit her liberties in terms of dress code, nutrition, social interactions, and sexual behaviour.

This study also illuminates the workings of widowhood phenomenon in Vrindavan, , a revered place beacause of its prominence in Hinduism. A life of religiosity in Vrindavan provides itself as a viable option for widows' subsistence. Vrindavan (home of krishna) in turn, benefits from the presence of widows. The dynamics of the link between Vrindavan's spiritual economy and widows' lives are investigated in order to provide insight on the daily discussions that widows engage in in order to maintain their existence. The life stories of widows are examined in order to provide light on the compromises they make in order to become and survive as Vrindavan widows.

The Widowhood is a universal experience that transcends time, culture, and geographic borders. Widows' miseries and oppression are strikingly similar across the world; her marginalisation is linked to the patriarchal

belief that a woman is a full human being only when she is under the protection of a male guardian.—In the absence of her father, brother, husband, or son, she is an entity to despise, be careful of, or be viewed with suspicion and terror.

The political and historical trajectories of the widowhood phenomenon in various cultural settings are inextricably linked to the polities and histories processes of local contexts in which laws, debates, and inquiries about widowhood take shape. The politics of Hindu high-caste widowhood in India is inextricably related to processes of caste reproduction and maintenance, an intrinsic system of social structure in Hindu society as codified in Hinduism, and the politics of British colonial colonisation of the Indian subcontinent.The edifice of the caste system was established and codified to perpetuate the supremacy of the Brahmin (uppermost caste) man through exploitation of women's , labor and sexuality in add on to subjugation of lower caste men. The caste system crafted abominable life conditions for Hindu women in the form of minor brides, child widows as well as satis (women burnt on the funeral pyre of the husband). The imperial forces exploited the pitiable image of the Hindu woman especially the widow as a justification for colonial occupation of the sub-continent, a phenomenon that Gaytri Spivak famously terms as often white men saving the brown suppressed women from brown men".

Who is widow
When their husbands die, women carry on wifely duties, but most women also "[assume] new responsibilities," taking over their dead "husbands' estates and [as] guardians of their non-inheriting, unmarried children". This social power and high value respect becomes their high credibility to rule as widows. Once women attain widowhood, they reach their greatest level of socio-political influence and mobility In the absence of her spouse, a widow effectively assumes the position of her husband and speaks for him. In Henry IV, Part II, we witness Kate Percy do this. Kate begs Northumberland, her father-in-law, not to revenge Hotspur's killing. Rather than ignore her, Northumberland amends his place. Widows in religious text One explicit example from the Viṣṇusmṛti-Dharmasūtra still presents a middle position: When a woman's husband has died, she should either practice ascetic celibacy or ascend [the   funeral pyre] after him.

When Pandu died in the Mahabharata, both his wives, Kunti and Madri were widowed. Kunti was a young widow, but she was a brave single mother who raised five kids by herself , and they grew to be fine , strapping warriors. Madri was also a young widow, and she immolated herself. However, this was because she felt guilty because she thought it was her fault that Pandu died and couldn't bear to live with it. So, it was a personal choice , not because of any imposed societal rule.

As for the Ramayana, the only widows I can recall are the three queens, Kaushalya, Sumitra and Kaikayee, who are widowed when Dashratha passes away. Exploring the widowhood in vrindavan shows An Analysis of Life Narratives of Vrindavan Widows

Indian Widowhood
Issues of Representation One of my early memories of my maternal grandmother's house in Ahmedabad is of widows being married in the front porch and of us, children, sitting and watching this simple ceremony. I had no idea then that the widow is a symbol of misfortune and evil in Hindu society, particularly among the brahmins other higher castes and the controversy and debate that had preceded widow remarriages being permitted and which were rare and disapproved of by the orthodoxy

Widows in indian movies
As many women's movement attain power in India and throw light on women's oppression and a struggle for an egalitarian society - a series of women filmmakers brought women from the margins to the centre of their texts. An alternate view point and a female gaze brought a focus on female subjectivity. A number of films were made by Aparna Sen, Sai Paranjpye, Vijaya Mehta, Aruna Raje and Kalpana Lajmi - which were sensitive portrayals of women protagonists, in search of social and sexual identity, women firmly located in specific socio-historical contexts. resulting the process of gender representations in Indian film andcinema - and how this process is influenced by bigger ideological and business pressures. I'll be focusing on Hindi cinema, but I'll also be looking at the work of other Asian-American women filmmakers working outside of India. I would argue that the globalisation process is neither totally new or limited to the present. In particular, the history of Indian cinema demonstrates the continuing impact of international cinema, particularly European and Hollywood films. In the 1920's many Indian film makers made Indian andGerman collaborative cinema. Starting with silent movies and moving on to the talkies, they made numerous movies based on Indian epics and mythology, history and later on social issues. Like few predecessors as Dada Rai, who was more indigenous and worked on the Swadeshi project, was also portraying to the colonial experience by creating self-aware Indian images and

narratives, a feeling of Indianness not just for the Indian market but also for the European market. His early historical collaborations (Shiraz, Prapanch Pash) inextricably fell into the language of orientalism, resulting in a certain glorification of Indian history. The female principal characters were played by a number of Eurasian performers. These ladies were given Hindu names, such as Sita Devi, and introduced to the general population as "educated Hindu women". This peculiarity of Eurasian females portraying Indian historical/mythological characters creates an intriguing colonial moment while also highlighting the representational issues. I'd call this an early example of global forces at action, with a European technological team and a group of Eurasian actors. an Indian script writer and director - set about capturing Indian narratives. Devika Rani joined this unit for costume designer and upgraded as heroine and later also co-partner of Bombay Talkies - the production company Rai set up in Bombay. In Achyut Kanya Devika Rani bring out the village belle look (a curious blend of western sophistication and Indian costumes). This portrail has had a lasting impact on how Indian backlash rural women should look on bigscreen, a construct from which later realist directors had to struggle to break away from the place of women.

Widows in indian literature

The new literature, which emerged in the nineteenth century in the modern Indian languages, reflected these changing attitudes of the intelligentsia. An interesting development was that the widow, being the focus of social reform in that period, suddenly came into prominence in literature. Her condition, her role, her place in the family and the question of her remarriage, became the subject of a great deal of writing both discursive and creative. Indian novelists described with great sensitivity the frustration and despair of a widow's life: the sense of lost opportunities and unfulfilled desires. Rajul Sogani examines the theme of widowhood over the last 150 years in Indian novels in Bengali, Marathi, Gujarati, Hindi, Assamese, Oriya, Punjabi and Urdu. The trend started in Bengal, where the impact of Western education was first felt and where reform activities were initiated. From there it spread to Bombay and Madras Presidencies and then to the Hindi speaking regions.

How do women novelists depict the widow and does this differ from the way men novelists do? Sogani answers this by selecting seven women novelists, five of them from Bengal. While most novels written by women are also based on conventional themes, they do have a feminist perspective. They focus on the suffering of women under patriarchy and a few of them like Swamakumari Debi and Nirupama Debi rewrote Bankim's Vishavriksha and Sharatchandra's Shubhada with a feminine bias so as to give their women readers a different view. They emphasized that through education n and financial independence widows could lead a life of dignity. Nineteenth and twentieth century writers had a common pattern of thinking and shared an upper caste background and tradition. This accounts for the similarities in their treatment of a theme like widowhood despite their varied regional and linguistic background. Post-independence novelists come from more diverse backgrounds and we have stories from different communities and castes. Authors are also ready to break with tradition by portraying widows who wear colourful saris, eat nonvegetarian food and even remarry and have children.

Rituals are embedded in a particular time and space, and so are their objects and meanings. The 'chronotope' we focus on here is the occasional—partly self-chosen, partly societally forced—ritual death of Hindu widows along with their deceased husbands

Their lives are balance sheets of the inhumanities women have been subjected to, and all those forcibly hushed secrets our young girls still carry in their wounded minds as they lie on string cots in slums and huts, or upon four poster beds in palaces, staring at the meagre skies above and hoping against hope that one day justice and revenge will be theirs.

CONCLUSION

The theme of widowhood has occupied an important place in both the Indian social reform movement and also, as shown by Sogani, in modern Indian literature. She shows how literature reflects social attitudes and social change. Students of modern Indian literature as well as social historians should find the book interesting. The book made me want to go back and re-read some of the novels discussed by Sogani which I had read many years ago but not with a feminist perspective.

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A REPORT OF MONOCOTYLEDONOUS LEAF APONOGETOPHYLLUM MAHABALEI GEN. ET. S P. NOV. FROM DECCAN INTERTRAPPEAN BEDS OFMOHGAONKALAN, M.P. CENTRAL INDIA

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INTRODUCTION

The Deccan Intertrappean Beds has record of the occurancee of many monocotyledonous leaves in a detached state. Leaves of Cyclanthodndron sahnii (Sahni and Surange, 1953), two petrified aquatic monocotyledonous leaves (Dwivedi, 1961); Musocaulonindicum (Jain, 1963); Cyperaceoxylon intertrappeum (Chitaley and Patel, 1970); Aerophyllites intertrappea (Chitaley and Patil, 1971); Culmites deccanensis (Paradkar, 1975); Heliconiates mohgaonsis (Trivedi and Verma, 1972); Festucophyllites intertrappeaense and Elymus deccanensis (Patil and Singh, 1977). Crinum eocenum (Patil and Upadhye, 1990); Palmophyllum dakshinensis (Achuthan, 1968) collected from Uppermost Maastrichtian sediments from Netherlands (Voigt and Domke, 1955); Achlyphila mohgaonse (Singh, 1977); Musophyllites agashii (Kokate, 2006), Thallasiophyllum mahabalei (Kokate, 2010), Typhophyllites ganeshii (Kokate 2012), Raphisophyllum mohgaonii (Thorat, 2017), Cyperaceophyllum intertrappea (Bobade, 2017). The present fossil specimen is different from all these specimens, hence decsribed here.

MATERIAL AND METHOD

The fossiliferous cherts, were collected from Deccan Intertrappean Beds of Mohgaonkalan, M.P. India. The material was exposed in transverse plane, after cutting the chert. Serial peel sections were taken for detailed anatomical study of the material.

DESCRIPTION

The present fossil specimen is monocotyledonous leaf. The leaf blade is isodimetric. It is exposed in transverse plane , about 4.56 mm in length along lamina and widthvaries in size because of buldge shaped , is 1.17 mm in width at tapering side where as 2.23 mm thick at midrib region. The thickness of lamina varies between 1.17mm to 2.23 mm. Theleaf is bounded on both sides by upper and lower epidermis. Both the epidermis are made up of thick walled elongated cells. The anatomical details are as follows. (Text Fig. 1, Plate Fig. 1)

Epidermis

A well preserved epidermis is single layered. Both upper and lower epidermis consisting same type of cells. The leaf blade is isodimetric. The hairs and cuticle are absent. The adaxial and abaxial epidermis is uniform, cells somewhat rectangular, elongated topolygonal in shape measuring in 0.3µ in size.

Hypodermis

Next to epidermis hypodermis is seen. It is 2-3 celled in thickness and made up of sclerenchymatous cells. The hypodermal layer measures 12 µ in size, may be present to providemechanical support.

Mesophyll tissue

Mesophyll region is undifferentiated, consist of thin walled loosely arranged parenchymatous cells with air spaces. (Text Fig. 3, Plate Fig. 3). The leaf blade is isodimetric.Mesophyll tissues besides air spaces consist of simple parenchymatous cells. These cells are polygonal and thin walled in adaxial side measuring 0.97 x 2.03 µ in size. These mesophyll cells may contain chloroplast to conduct photosynthesis process which are generally present inthe epidermal cells of submerged aquatic plants.

Vascular Bundle

The vascular bundles are seen prominently, might be small and 3 to 4 in number more or less equidistant from each other. The cells are measuring 0.1 µ in size. Phloem is not well preserved.

COMPARISON WITH KNOWN FOSSIL LEAVES

From the above discussion it reveal that the present fossil blade is aquatic monocotleaf of submerged nature. So it is further compared with already reported monocot fossil leavesfrom the Deccan Intertrappean Beds .

The present fossil specimen resembles with leaf of *Cyclanthodendron sahnii* Rode(*S*ahni and Surange, 1953) in having linear leaf but differs in not having dumbell shaped vascular bundles with sclerenchymatous caps on dorsiventral side.

It is also compared with *Musocaulon indicum* (Jain, 1963), it is a pseudostem, of open concentric leaf sheath, it does not show any resemblances with present fossil leaf.

The petrified monocot leaf *Cyperaceoxylon intertrappeum* (Chitaley and Patel, 1970) of family Cyperaceae is characterized by having marshy habitat when compared with present fossil specimen resembles in having strap shaped leaves, thin walled epidermis and poorly developed vascular bundles but differs in having air cavities.

The present fossil specimen compared with monocot aquatic leaf *Aerophyllites intertrappea* (Chitaley *and* Patill, 1971) is totally differs in size, shape and also in presence of sclerenchymatous patches around xylem and phloem. Present fossil specimen is larger than *Aerophyllites*, lanceolate in shape.

Culmites deccanensis (Paradkar, 1975) and *Crinum eocenum* (Patil and Upadhye, 1990) differs from present fossil specimen in having air cavities in single series.

When present fossil specimen is compared with *Heliconites mohgaonse* (Trivedi and Verma, 1972) it differs in not having presence of fibrovascular bundles in more than one arc and also not having main arc of vascular bundles. The presence of single metaxylem element in case of *Helicoites mohgaonse* is not seen in present fossil specimen.

Festucophyllites intertrappea (Singh, 1977) is petrified monocot leaf sheath, leaves are arranged in acropetal succession, vascular bundless 6 to 9 in rows, conduplicate ptyxis and equitant venation, while the present fossil leaf is a single leaf ,vascular bundles are scattered, which is different from *Festucophyllites*.

Palmophyllum dakshinensis (Achuthan, 1968) differ from present fossil specimen in many basic characters one of them is not having strap shaped leaf, hairs absent.

Achlyphila mohgaonse (Singh, 1977) is the leaf sheath surrounding the axis, vascular bundle in two alternating rows, abaxial epidermis with bulliform cells, which is different from present fossil specimen.

Thallasiophyllum mahabalai (Kokate, 2010) is flat, strap shaped but differs in having air cavities, segmentation of air cavities regular which is not seen in present fossil leaf.

Typhophyllites ganeshii (Kokate, 2012) it shows prominent air cavities and in present fossil air spaces are present in mesophyll tissues, so it is different than present fossil leaf.

Raphisophyllum mohgaonii (Thorat, 2017) shows resemblances with present fossil leaf in having flat, strap shaped, monocot leaf, xylem and phloem ill preserved but differs in size i.e. larger than present fossil leaf measuring 2.26 mm in length.

Cyperaceophyllum intertrappea (Bobade, 2017) when compared with present fossil leaf shares some characters like flat, strap shaped, mesophyll with loosely arranged parenchymatous cells, vascular bundles in single row, xylem and phloem not well preserved but differs in having vascular bundles, conjoint, collateral and surrounded by thick bundle sheath. Which is not observed in present fossil leaf.

As mentioned in the description the present fossil specimen is having majority of characters suggesting its aquatic monocotyledonous nature. In aquatic plants for buoyancy and conductive tissue are needed in aquatic plants. Hence, from the above discussion we can compare the present fossil specimen with living aquatic plants from order Helobiae.

DISCUSSION AND COMPARISON

The present fossil specimen of leaf blade shows anatomical characters which resembles with diagnostic features in the leaves of Helobiae. This order consist of the member which have a strong preference for aquatic environments and are frequently wholly submerged. The common characters of present fossil specimen and order Helobiae are strap shaped, flat leaves presence of marked development of aerenchyma in mesophyll and rather presence of

scattered distribution of inverted vascular bundles. The above characteristics features of present fossil specimen shows affinities with the families of order Helobiae. On the basis of strap shaped leaves in the present fossil specimen broadly it can be compared with the families like *Alismataceae, Limnocharitaceae, Butomaceae, Potomogetonaceae, Zosteraceae, Hydrocharitaceae.*

The present fossil specimen resembles with family *Alismataceae* in having strap shaped leaves and in absence of stomata of submerged leaves but differs in not having regular segmentation pattern of air cavities.

When present fossil specimen compared with the family *Limnocharitaceae* and *Butomaceae* resembles in having linear, strap shaped leaves and absence of hairs and stomata but differs in not having central tissue including a network of uniseriate parenchymatous plates enclosing large air cavities and undifferentiated mesophyll region.

When present fossil specimen compared with family *Potamogetonaceae* resembles in strap shaped leaves, linear to ovate, epidermis is thin walled cells, hairs are absent. The plants are anatomically reduced in relation to their aquatic environments, the reduction being greatest in wholly submerged species which have well developed air lacunae and lacked pronounced mechanical tissue. The vascular tissue are reduced with the xylem largely represented by lacunae but differs in having large air cavities.

When present fossil specimen is resemble with the family *Zosteraceae* in having strap shaped, epidermis of uniform cells more or less isodimetric but differs in having mesophyll including a single series of lacunae.

When present fossil compared with the family *Hydrocharitaceae* resembles in having linear or lanceolate leaf shape, isodimetric, stomata absent but differs in vascular tissue with well developed protoxylem lacunae, sometimes including thin walled metaxylem tracheids.

When present fossil compared with the genus A. of family Apogetonaceae showing close resemblances with present fossil leaf in lanceolate to ovate shaped leaf, isodimetric, smooth epidermis, hairs absent, stomata absent, mesophyll 2-5 layered consisting of flattened

but lobed cells forming a well developed intercellular spaces for buoyancy Resemblances are seen in the leaf (Metcalfe, 1969) of the same as given above.

Hence, from the above discussion we can compare the present fossil specimen with living aquatic plants from order Aponogetonales and we came to conclusion that it shows very close affinities with the genus *Aponogeton* of family Aponogetonaceae. The fossil specimen is named as *Aponogetophyllum mahabalei* gen. et. sp. nov.

DIAGNOSIS

Aponogetophyllum gen.nov.

Leaf blade, monocotyledonous, isodimetric, aquatic varied in thickness, flat, strap shaped, a ,air spaces in mesophyll region, leaf is bounded on both sides by upper and lower epidermis, both the epidermis are of thick walled elongated cells, hypodermal region is 2-3 celled in thickness made up of sclerenchymatous cells, vascular bundles are seen prominently, phloem is not well preserved.

Aponogetophyllum mahabalei gen. et. sp.nov.

Monocotyledonous strap like leaf blade measuring 4.56 mm in length and 1.17x2.23 mm in width, mesophyll region with air spaces measuring 0.97 mm x 2.03mm in size, hypodermal region measures 12µ in size. Vascular bundles are seen prominently, small and -4 in number more or less equidistant from each other. The cells are measuring 0.1 µ in size. Phloem is not well preserved.

Holotype	-	MOH/SWD/MONOCOT LEAF- I
		Department of Botany, Shri. Shivaji College, Akola
Locality	-	Mohgaonkalan, Dist. Chhindwara M.P., India
Horizon	-	Deccan Intertrappean Series, India
Age	-	Early Tertiary
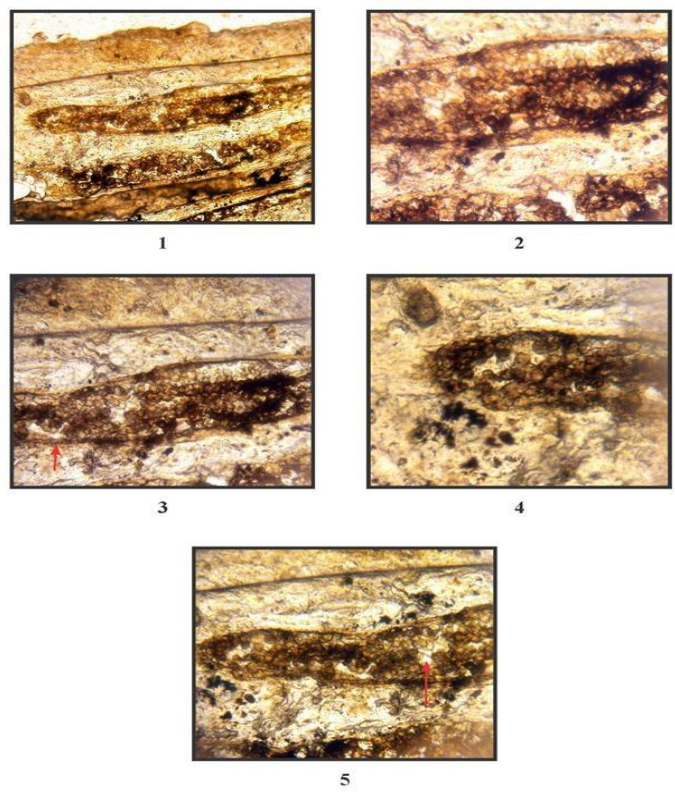
Plate Fig. *Aponogetophyllum mahabalei*

Aponogetophyllum mahabalaei gen.et.sp.nov.
Explanation of Plate Fig. 1 to 5

1 : T.S. of leaf showing Epidermis, mesophyll and Vascular bundles X20

2 : Magnified structure of leaf showing middle part of leaf X100

3 : Lateral ends of leaf showing lanceolate shape X40

4 : Magnified structure of cells of Epidermis X 100

5 : T.S. of leaf showing scattered Vascular bundles in mesophyll tissues with airspaces X20
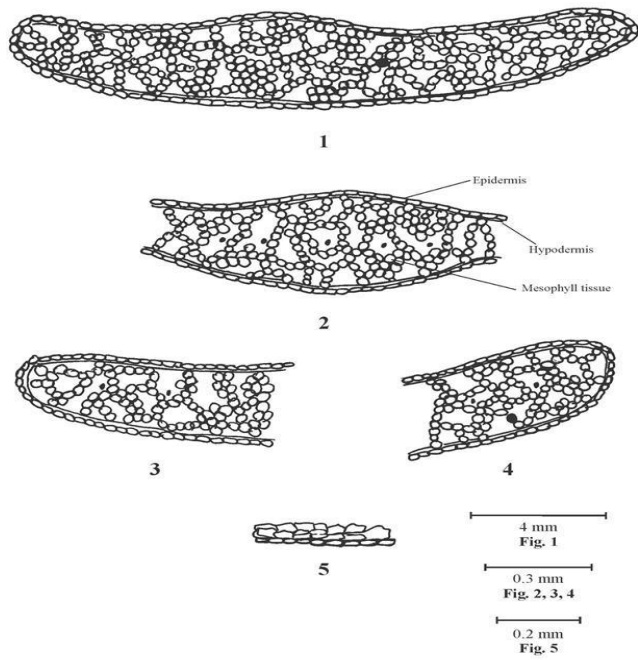
Text Fig. *Aponogetophyllum mahabalei*

Aponogetophyllum mahabalaei gen.et.sp.nov.
Explanation Text Fig. 1 to 5

1   : Diagrammatic sketch of T. S. of leaf flat and strap shaped structure showing epidermis, hypodermis, mesophyll with air spaces.

2,3 : Lateral ends of leaf showing epidermis and mesophyll with scattered Vascular bundles.

4   : Cells of epidermis and mesophyll.

5.   : Cellular details of epidermis and hypodermis.

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CUSTOMER AWARENESS TOWARDS E-BANKING SERVICES OF PUBLIC AND PRIVATE SECTOR BANKS WITH REFERENCE TO RAIPUR CITY CHHATTISGARH: A COMPARATIVE STUDY

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ABSTRACT

E-Banking is a buzzword in today's banking services. E-Banking is a universal phrase of making usage of electronic channels through telephone, mobile phones, internet, etc. for transmission of banking services and products. Customer awareness is fundamental for the favorable outcome of any product and service. The paper highlights the customers' awareness towards E-Banking services of public sector banks and private sector banks such as State Bank of India and HDFC bank in Raipur City of Chhattisgarh state of India. The responses have been undertaken about the opinions for developing E-Banking services. The sample size for this paper is 400 customers for each bank i.e. SBI and HDFC Bank. Different branches of the State Bank of India and HDFC banks present in the Raipur City were considered. The sampling frame was chosen as the customers that have used the E-Banking services under these two banks. Both primary data and secondary data have been utilized. The well-structured questionnaire is prepared with a five-point Likert scale to study the awareness towards E-Banking services. The sources of secondary data were the reports from the Reserve Bank of India, State Bank of India, HDFC Bank, Indian Bankers association, etc. Also, various articles, contents from newspapers, and websites were followed to get a clear understanding of the problem. The data collected was sanitized and administered properly before analysis. Data has been analyzed with the tools of descriptive statistics through SPSS software. It has been observed that through this study the maximum level of awareness is on managing ATM/Debit, Credit card through Internet Banking in State bank of India. However, in HDFC Bank the maximum level of awareness is on online banking services, information & inquiries. In the case of claim settlement procedures, the level of awareness is still low in both banks. The result exhibits that the higher level of awareness is in private sector banks as compared to public sector banks. This study will help the academicians, researchers, and other stakeholders of the banking system to sensitize themselves in various areas and to take corrective action in due course of time to improve customer satisfaction and banking transactions.

Keywords: E-Banking, Customer awareness, Public sector, Private sector

INTRODUCTION

In the era of global competition, the Banking sector has emerged as a vital service industry. It plays an essential role in the social developments and economic development of the Nation. Among all the services offered by the banking industry in India, e-business is one of the prominent services offered by the players. Because of the competitive world, every bank must provide modern facilities to the customers to retain them and to make them loyal to their bank. Due to developments in technology and different communication Network the banks can provide E-Banking services to their customers. Electronic Banking empowers a customer to accomplish banking transactions through the bank's website. This can be very useful to the customers, especially for banking outside bank hours through internet access. It is the most convenient and affordable service to customers. With the help of internet banking, the consumer has access to several services just at the click of a mouse. The various forms of E-Banking services are ATM, EFT, NEFT/RTGS, Mobile banking, and many others. Now the banking work can be done by customers anywhere and at any time with the help of new technology.

LITERATURE REVIEW

A literature review is the most important part of the research. The author has collected various articles from different secondary sources to find the research gap and to understand various practices available from the literature. The following is the summary of a few studies done earlier on the related topics.

Sakheer (2017) entitled a study of consumer awareness and usage of E-Banking transactions through mobile phones with reference to Belthangady Taluk. This study aimed to evaluate the awareness of E-Banking among the customers and also to get the information of not utilizing mobile banking by the clients. It was found that the older generation was using fewer electronic banking services in contrast to the modern generation as a result of modernization in information technology and their approval level was high in E-Banking.

Amsaveni and Kanagarathinam (2017) conducted a study on consumer awareness of E-Banking services in public sector banks in the Coimbatore district. In this paper, this study aims to know the consumer awareness of E-Banking services facilitated by the public sector banks in the Coimbatore district. 458 customers of various banks were preferred as samples established on a convenient sampling method. Primary data were collected from the respondents using interview schedules. Percentage analysis and score ranking methods were used. The findings of this paper were that internet banking awareness of the sample respondents on different factors of E-Banking services performed was costless and obtained the topmost score. It was also found that the majority of customers were aware of the services offered at free of cost.

Rajasekaran et.al (2015) conducted a study on customer awareness towards E-Banking Services in Coimbatore City. The main objective of the study was to know the customer level of awareness towards E-Banking services facilitated by the banks in Coimbatore city. 90 was the sample size and the non-probability technique had been adopted. The study had shown that people mainly were aware of the concept of Electronic Banking. As e-banking was still almost new in India, the motive to utilize e-banking was still very limited. The finding revealed that people identify about the services but still a large number of customers were not aware of all the services and never utilized them.

Laxman (2015) studied the perception and awareness of customers of E-Banking in Solapur district. The objective of this paper was to study the customer perception and awareness of E-Banking in Solapur district in India and the study was to analyze the effect of demographic profiles such as education and gender on the levels of satisfaction of customers towards SBI internet banking. The findings of the study were that 5 phases in the acceptance of Information and Communication Technology (ICT) in the Indian banking sector revealed that the growth of E-Banking was satisfactory. It was also found that only educated, well-to-do persons and male category structure the maximum of the users of E-Banking services.

Anithamary et.al (2017) studied the awareness of consumers & usage of E-Banking services with reference to Coimbatore city. The aim was to identify the awareness level of E-Banking and how repeatedly it was used by the respondents. A statistical tool such as Percentage analysis, chi-square test, ANOVA was used and this data was analyzed. It had been observed that the consumers who know about internet banking channels were not utilizing this facility because of misconception and lack of information. These consumers should be targeted by the bank and must be convinced to utilize the same. The result of the study showed that customers were utilizing only fewer facilities of different E-Banking services.

Kogila et. al(2018) entitled a comparative study on awareness and usage of digital payments among customers of private and public sector banks in the region of Thanjavur and Kumbakonam. The purpose of this paper was to identify the customer perception of digital payments between the private and public sector banks with attention to the usage and awareness of digital payments. The structured questionnaire created for the consumers was utilized to study their demographic factors, relationship with banks, awareness, etc. The sample size was 168 no. of customers of which 48 were from Kumbakonam and 120 from Thanjavur respectively. This study found that how the demographic factors were dependent when comparing with two sectors namely Public and Private sectors banks in which customer relationship was the one factor, dependent upon another factor in two sectors of banking as convenient as possible. It helps to accomplish numerous tests to hinder the proper relationship between the dependent variable and independent variable.

Sonwane et al. (2014) researched to study the awareness of E-Banking facilities amongst the college students between the age group of 18 to 25, living & studying in rural areas of Jalgaon. In this stage of universal competition of the Banking sector had raised as a crucial service industry. The banking sector had developed its operations as per the requirement of the consumers. Further, around the apportionment, a grouping of activities and scope of Banks had altered its landscapes due to changes in the world economy at abundance. The Financial & investment activities were included with the transaction of Insurance & Foreign. The technological revolution had included the usage of techniques of information & communication that was judiciously used & changed the manual banking transactions. E-Banking was not a recent topic of the city today but had elevated the business of the banking sector by 4.6 % only because of technological upgrading.

Tandon et al. (2016) in their research indicated consumer awareness towards internet banking which was a comparative study of public, private, and foreign banks. Internet banking was regarded as a transfer route, which over years had built up identification It had experienced growth in many countries and had changed the historic way of banking. This route had provided a competitive benefit to the banks. Through internet banking, the consumer had run to several services merely at the click of a mouse. The present study was based on the reaction of 450 consumers inspected in Delhi and National Capital Region to understand the consumer

awareness towards internet banking and the respondents were preferred from the public, private, and foreign sector banks. The objectives of the study were to know the consumer awareness which was collected through a questionnaire with a five-point Likert scale consisting of different aspects related to internet banking and was designed with a random sampling method. The outcome of the study determined that the level of consumer awareness was better in the case of private and foreign sector banks in corresponding to public sector banks. Public sector banks need to focus on their work to argue with the private and foreign sector banks.

Singh (2013) examined an exploratory study on Internet Banking Usage in Semi-Urban Areas in India. The purpose of this study was to investigate the components which disrupt the usage of Internet Banking in a semi-urban area. The study was exploratory. The sample size was100. For collecting primary data a self-designed structured tool at a five-point Likert's scale was utilized. Tabulation and factor analysis was done in this paper. Maximum people, who were not convenient with computers and the Internet, frequently find it difficult to use internet banking. Therefore, for beginners, Internet banking was a time-consuming process. In addition to this, people also find a problem in trusting a completely automated system like Internet Banking, in case of financial matters.

Koti (2016) researched customer awareness & adaptability towards internet banking in the case of the Indian banking industry. The objective of this study was to examine consumers' awareness of internet banking services. It was found that 60 % of the consumer was strongly agreed to a quick response, 52%, for 24*7 services, 46% each for convenience and friendliness made, and 42% for free for queuing. The study also indicated some disadvantages because internet services were not adopted by the respondents. The research found that 40% of the respondents have not opted due to the problem of internet connectivity, 28% for less awareness, and 20% for insecurity and low privacy.

Krishna & Chaithanya (2018) conducted a study on customer awareness and perception towards E-Banking services of Kurnool district in Andhra Pradesh. The objective of this study was to investigate the awareness levels of customers towards various E-Banking services. Primary and secondary data both are utilized in this study. As per the sample size, 700 customers had been taken. It had been concluded that level of awareness towards Debit card is maximum and customers perception towards usage of E-Banking services i.e. ATM is maximum.

The above literature review indicated that studies were done in different parts of India and outside to know the awareness level about E-Banking either on public sector banks or on private sector banks. However, less literature is observed in the case of a comparison study between public and private sector banks. Also, less study was observed in the eastern part of India and a special focus on the state of Chhattisgarh after it has recognized as a new state. So, the researcher has focussed to study the awareness level comparing the public and private sector banks in India.

OBJECTIVES OF THE STUDY:
- To examine the awareness levels of customers towards various E-Banking services.

- To offer suitable suggestions for the increasing awareness and development of E-Banking services.

RESEARCH METHODOLOGY:
The present study is mainly based on primary data and is behavioral. However, the secondary data is also made use of at some places of the study wherever it became necessary. The primary data is collected through a structured questionnaire. The questionnaire is designed keeping in view the objectives of the present research work. The relevant secondary data is gathered from the Reserve Bank of India Reports and publications, Indian Bankers Association publications, National Institute of Bank Management publications, business newspapers, journals, magazines, etc. The data and the information collected with the help of a questionnaire are processed and analyzed using SPSS software. The non-probability sampling method is utilized in which the convenience sampling method is used to select the sampled respondents. 400 customers have been chosen from SBI and HDFC Bank each.

DATA ANALYSIS AND INTERPRETATION
The responses obtained were analyzed and the level of awareness on different E-Banking services

Obtained from the State Bank of India are given below in the table

Table 01: Level of Awareness on E-Banking services (State Bank of India)

	Web site of the bank	Inter net banki ng	Online banking services informa tion & inquirie s	Rules and regulat ion regard ing Intern et Banki ng	Mobi le Bank ing	Managi ng ATM/D ebit, Credit card through Internet Banking	Claim settlem ent proced ures	Online complai nt proced ures	Fund transf er throu gh Inter net Bank ing	RTGS/N EFT facility as a mode of payment	Overal l aware ness
Mean	3.48	3.77	3.72	3.16	3.67	3.90	2.62	2.70	3.14	3.10	33.3
Media n	4	4	4	3	4	4	3	3	3	3	
Mode	5	5	4	3	5	5	3	3	4	5	
Std deviati on	1.278	1.16 1	1.074	1.118	1.278	1.186	1.181	1.148	1.452	1.434	
Avera ge aware ness											3.33

Source: SPSS output

In the above table, the mean level of awareness on managing ATM/Debit, Credit card through Internet Banking is 3.90, which exhibit that customer's level of awareness of the above service is maximum, followed by the mean level of awareness on Internet Banking is 3.77, which shows that customers level of awareness on this particular service is lesser than managing ATM/Debit, Credit Card through Internet Banking. The mean level of awareness on claim settlement procedures is 2.70 which shows that customers' level of awareness of online complaint procedures is very minimum. In the last column, it is the total awareness of different banking services whose total mean is 33.3 and when it is divided by 10, then the result is 3.33. It displays that the customers are somewhat aware of the level of awareness of different banking services.

Table 02: Level of awareness on different E-Banking services (HDFC Bank)

	Webs ite of the bank	Intern et banki ng	Online banking services, informat ion & inquiries	Rules and regulati on regardi ng Interne t Bankin g	Mobil e Banki ng	Managi ng ATM/De bit, Credit card through Internet Banking	Claim settleme nt procedu res	Online complai nt procedu res	Fund transf er throu gh Intern et Banki ng	RTGS/N EFT facility as a mode of payment	Overall awaren ess
Mean	3.97	4.16	4.27	3.43	3.98	4.11	3.04	3.36	3.96	4.13	38.41
Median	5.00	5.00	5.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	
Mode	5	5	5	5	5	5	1	5	5	5	
Std deviati on	1.303	1.055	.998	1.411	1.001	1.088	1.546	1.449	1.193	1.095	
Averag e awaren ess											3.841

Source: SPSS output

INTERPRETATION

In the above table, the mean level of awareness on online banking services, information & inquiries is 4.27, which exhibit that customer's level of awareness of the above service is maximum, followed by the mean level of awareness on Internet Banking is 4.16, which shows that customers level of awareness on this particular service is lesser that online banking services, information & inquiries. The mean level of awareness on claim settlement procedures is 2.70 which shows that customers' level of awareness of online complaint procedures is very minimum. In the last column, it is the total awareness of different banking services whose total mean is 38.41 and when it is divided by 10, then the result is 3.84. It displays that the customers are moderately aware of the level of awareness of different banking services.

COMPARATIVE ANALYSIS

In the descriptive statistics table of the State Bank of India, the maximum level of awareness is on managing ATM/Debit, Credit cards through Internet Banking. However, in HDFC Bank the maximum level of awareness is on online banking services, information & inquiries. And in both the banks the minimum level of awareness is on the claim settlement procedures. As per the overall awareness of different E-Banking services, HDFC bank awareness is more as compared to the State Bank of India.

SUGGESTIONS AND RECOMMENDATIONS

The study has given a broad understanding of the awareness level among the customers on different parameters of E-Banking services. The following are the suggestions to build up the awareness levels between the customers about E-Banking services.

The proximity of the bank proves to be a bigger manipulating determinant for the choice of a bank. Therefore, banks should go for branch growth and see that their branches are accessible to the customers.

Action to be proposed to improve customer faithfulness and customer confinement.

Steps to be taken to enhance the awareness levels about different E-Banking services such as net banking and mobile banking etc.

Government should develop significant policies and see that there won't be any infrastructural mistake even in the rural areas permissive the banks to promote with E-Banking services.

Quality of service is another area where the customer is admiring. Thus, preventive measures are to be proposed to sustain a good quality of service to all the users.

Customers should be provided education/presentation of E-Banking services as they are automation oriented. Awareness programs are to be started indicating the beneficiary of the E-Banking system when compared with that of traditional practices.

Noticeable growth in usage of E-Banking services can be observed after demonetization. But there is an essential need to maintain that development for taking the actual benefits to the account holders and the public at massive.

Restrictions/fear of using E-Banking services should be eliminated from the customer by giving proper service and appropriate suggestions.

It is recommended to reformulate the grievance cell and the reasons for grievances should be analyzed and clarified immediately. Awareness about the Ombudsmen committee is to be created among customers.

Appropriate measures are to be taken to increase the awareness level of the Customers.

CONCLUDING REMARKS

E-Banking is a very essential part of human life. Because of this many works of the bank have been handled in sitting in one place. For E-Banking usage, it is necessary, that customer awareness should be there. More awareness of E-Banking will be there, more utilization will be there. It has been concluded that customer awareness is more in private sector banks as compared to public sector banks because the young generation is more literate towards electronic payment services and attracted towards new banks, however in the public sector banks, frequently use the same E-Banking services for longer period like ATM and Debit, credit cards, etc, due to the illiteracy of other recent E-Banking services. In the above study, it has also suggested increasing awareness among customers, so that development will be there of electronic payment services.

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THE IMPACT OF EMPLOYEE ENGAGEMENT ACTIVITIES/PRACTICES ON EMPLOYEE PRODUCTIVITY

Sagar Khairnar

INTRODUCTION

Employee engagement is the important drive in an organization to achieve their premier goal. In business context, employee engagement is referred to work with colleagues to get effective task performance which leads to productivity of the organization.

Employee engagement is a very abstract concept. It is the "emotional connect" that an employee feels towards its organization. What makes one feel connected to an organization and motivates to deliver her/his best varies from person to person. It also changes with what is happening in and around the world. We live in a world where trends change in the blink of an eye. A practice that is working fine today might not be applicable tomorrow. The same goes for employee engagement.

With every new generation in the workforce, employee engagement trends change drastically. Forward-thinking business leaders and managers must keep themselves updated on these engagement strategies.

OBJECTIVES: -

- To examine the impact of knowledge sharing on organization performance.

- To study the relationship between knowledge sharing and organizational performance.

- To measure the impact of employee engagement on organizational performance.

- Examine the mediating impact of knowledge sharing between employee engagement and organizational performance.

Organisational Outcomes of Employee Engagement
Factors Influencing Employee Engagement:

Factors

1) Recruitment & Selection
2) Job Designing
3) Career Development
4) Leadership
5) Empowerment
6) Equal & Fair Opportunities
7) Training and Development
8) Performance Management
9) Incentives & Compensation
10) Health and Safety
11) Job Satisfaction
12) Communication

Employee Engagement

Organization Outcomes

1. Higher profits and productivity
2. Improved Quality
3. Customer Loyalty
4. Financial Success
5. Employee Performance
6. Commitment & Motivation
7. Employee Retention
8. Organisation Culture
9. Manager self-efficacy

Figure.3. Framework of Factors and Outcomes of Employee Engagement

Engagement Impact On Organization's Productivity:

Employee's knowledge of how well an organization's assets are being managed has a positive impact on engagement. There is a strong link between productivity and engagement. Employees' knowledge of an organization's productivity levels also has positive impact on engagement. Employee Engagement depends on four major conditions in the workplace such as organization's culture, continuous reinforcement of people focused policies, meaningful metrics' and organizational performance.

1. Corporate culture helps an organization to connect with the employees, gives them empowerment in decision making process and develops them to shoulder greater responsibilities.

2. Continuous reinforcement happens when an organization frames policies which act as facilitator towards accomplishment of goals by the employees and thereby the organization itself.

3. Meaningful metrics refers to devising performance measurement criterion in such a way that employees are clear about their goals.

4. Organizational performance leads to pride, job satisfaction, trust and a sense of belongingness to the organization.

METHODOLOGY-
A quantitative research method can be used in this study. non-probability sampling design with a focus on convenient sampling frame will be deploying in this study.

The purpose of this qualitative case study was to explore strategies that some communication business leaders use to engage their employees to increase profits.

REVIEW OF THE LITERATURE
This literature review is examined peer-reviewed journal articles, working papers, textbooks, and other published resources relevant to employee engagement. Rothbard (2001) defines engagement as psychological presence and, furthermore, states that it involves two critical components: attention and absorption. Attention refers to cognitive availability and the amount of time one spends thinking about a role, while absorption means being engrossed in a role and refers to the intensity of one's focus on a role. According to Maslach et al. (2001), six areas of work-life lead to either burnout or engagement: workload, control, rewards and recognition, community and social support, perceived fairness and values. They argue that job engagement is associated with a sustainable workload, feelings of choice and control, appropriate recognition and reward, a supportive work community, fairness and justice, and meaningful and valued work

Self-Determination Theory

BACKGROUND OF THE STUDY
Vance (2006) [5] stated that Employee engagement and commitment directly and highly affect the job performance of an employee and also impact the business results. Figure 1.1 shows that employer practices affect the employee engagement and level of commitment toward the organization and it shows that employer practices also affect the job performance of an employee.

CONCLUSION
After reviewing the various research and survey findings of employee engagement, it can be certainly concluded that high levels of employee engagement will lead to improved employee commitment & involvement towards job and thus creating a motivated workforce, that will work together to achieve the common goals of the organization . Acquiring skilled workforce is just not enough in today's changing economy like ours; instead a lot needs to be done to retain, involve and make them committed to the organization and its goals. Thus, engagement is a state where an individual is not only intellectually committed but has great emotional attachment with his/her job that goes above and beyond the call of duty so as to further the interest of the company. The organizations should not only provide their employees with great infrastructure and other facilities but also freedom to make their work exciting and also are providing them an environment wherein they can say good-bye to a monotonous work. They should focus on retention as an outcome of three HR focus areas such as employee motivation, career growth & remuneration, and compensation. Thus working in a safe and cooperative environment adds to the engagement level of an employee.

A STUDY ON THE RELATIONSHIP BETWEEN EMPLOYEE'S MOTIVATION AND WORK PERFORMANCE

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ABSTRACT
Motivation is important to a business and its employees. It helps an individual achieve personal goals. A motivated individual will have greater job satisfaction, heightened performance and a willingness to succeed. Without any spark of creativity, they are less motivated to perform. The employee performance is positively correlated to motivation. This implies if employees are motivated; it certainly helps to raise their performance. The positive correlation between motivation and performance is moderated via level of education; training and prior research experience. Motivation is considered as a predictor of job performance. The determinants of employee job performance were motivation, aptitudes and skill. The analysis shows that individual needs, personal preferences and work environment are positively and significantly related to job performance. If an employee feels motivated at work, they are more likely to work harder for the company. It is important for employees to feel motivated to hit targets or achieve promotions; without a reason to be motivated, employees are more likely to stagnate and contribute less to the overall success of the business. Performance must be measured against job descriptions and goal set from time to time; and goals and expectations must be quantified. If the employee is motivated, resulting performance then depends on the personal characteristics of the individual worker and the situation or environment they work in. Employee performance is actually influenced by motivation because if employees are motivated then they will do work with more effort and by which performance will ultimately improve. Motivated individuals are prepared to work hard; consequently, it increases their productivity and performance while meeting the organisational target. The employees should be motivated so that they take more interest as well as make significant efforts to carry out their duty productively. Motivated employees put in their maximum effort for achieving organizational goals. Motivation improves the work performance by bridging the gap between the ability and willingness to work. Better performance results in higher productivity and consequently lower cost of production.

Keywords: Motivation, Performance, Job satisfaction, Welfare, Productivity

INTRODUCTION:
Motivation is the process that initiates, guides, and maintains goal-oriented behaviour. In everyday usage, the term "motivation" is frequently used to describe why a person does something. It is the driving force behind human actions Job performance relates to how individuals perform in their job duties. In addition to training and natural ability job performance is impacted by workplace environment factors including physically demanding tasks, employee morale, stress levels, and working extended hours. Poor conditions and high stress can lead to compromising health habits like smoking and/or poor diet, which then have increasing detrimental effects on job performance. On the other end of the spectrum, well designed work environments, low stress, and a supportive employer can greatly increase job performance. Job performance is an important part of workplace productivity and safety.

Objectives:
Main basic objective of motivation is to create conditions in which people are willing to work with zeal, initiative, interest and enthusiasm with a high moral satisfaction personal as well as group. Motivation, as well creates feeling or responsibility and loyalty. If an employee is motivated, they are more likely to do a good job and work hard. Motivation is very important for attracting employees, retaining employees and general levels of productivity in a business. Motivated employees are more likely to be willing to work, rather than staying off.

Research Methodology:
The research is mainly based on secondary data. The Secondary data will be collected from books, journals, magazines, research papers, articles, and websites and Published data on the internet.

LITERATURE REVIEW
Literature review is the search and evaluation of the literature related to the research study. The literature review provides substantial support to the study. It provides secondary source of data which are subject related published reports, articles and papers. It helps to prepare the detailed and analytical summary of the previous research study performed by the researchers.

1. **A study on the impact of motivation on employee performance: An exploratory case study on a Dubai based semi-government Commercial bank. LATHIKA K WIJESUNDERA Cardiff School of Management 20th January 2018**

Motivation may be characterized as being the driver which integrates those internal and external factors found to stimulate an individual to be continually interested and committed to a job role or subject. In the engagement process, activating an individual to make effort which offers attainment of a given goal or target through an individual's performance and commitment benefits both the individual and the organization. Thus, Motivation can be seen as a key driver in the linking of an individual s performance while expecting results in the attainment of organizational goals, performance and as a consequence. Organizations use motivation in the attainment of these desired business outcomes and key factors such as extrinsic motivators described as salary, bonus and commission directly impacts an individual while intrinsic factors like working conditions, employee engagement and job security also plays a major role. This research aims to analyze the relationship between motivation and employee performance.

2. **The impact of motivation on employee performances: a case study of karmasangsthan bank limited, Bangladesh (Md. Nurun Nabi, Prof. Md. Monirul Islam, Tanvir Mahady Dip, Md. Abdullah Al Hossain) International Journal of Business and Management Review Vol.5, No.4, pp.57-78, May 2017**

Employees are the heart of any organization. For any organization to operate smoothly and without any interruption, employee cooperation cannot be replaced with anything else. It is of utmost importance that the employees of an organization not only have a good relationship with the top management, but also they maintain a healthy and professional relationship with their co-workers. The following study is self-conducted research on how motivational tools impact the performance of employee for betterment. The study alsofocused on de-motivation factors affecting employee performance negatively. A sample of individuals was selected and was interviewed with a self-administrated questionnaire to obtain primary data. The data was analyzed using descriptive statistical analysis methods. The results obtained indicate that if employees are positively motivated, it improves both their effectiveness and efficiency drastically for achieving organizational goals.

3. **A Study of Employee Motivation in Organization (Dr. Ankur Jain, Dr Bhuwan Gupta and Dr. Meenakshi Bindal) International Journal of Engineering and Management Research e-ISSN: 2250-0758 | p-ISSN: 2394-6962 Volume- 9, Issue- 6 (December 2019)**

Employee Motivation is the key factor to help up the capacity of an association. In the globalization stage, each organization needs to continue itself in a furiously focused

market. Representatives are the fundamental elements to show the business objectives into the real world. Subsequently, in the present world each association attempts to deal with its human asset office to keep its representatives inspired. In that specific circumstance, some of the administration speculations have been rehearsing by them. Business work or them

presentation in the market can be assessed by surveying the degree of inspiration of representatives. Inspiration can assume a lead job to get the expert achievement in each

budgetary year in a less exertion way. While trying to find what inspires representatives,

representative inspiration inquires about papers report that what spurs laborers today is fundamentally connected to the qualities and objectives of the person. Starting in the 1970's, it appears that there was a sensational move in the qualities and needs of the ordinary labourer. As individuals turned out to be progressively taught and the economy saw a sharp decay of

the Protestant hard working attitudes, what representatives needed from their managers changed also.

Motivation Theories

Motivation is a state-of-mind, filled with energy and enthusiasm, which drives a person to work in a certain way to achieve desired goals. Motivation is a force which pushes a person to work with high level of commitment and focus even if things are against him. Motivation translates into a certain kind of human behaviour.

It is important to ensure that every team member in an organization is motivated. Various psychologists have studied human behaviour and have formalized their findings in the form various motivation theories. These motivation theories provide great understanding on how people behave and what motivates them.

Motivation is a huge field of study. There are many theories of motivation. Some of the famous motivation theories include the following:

1. Maslow's hierarchy of needs
Abraham Maslow postulated that a person will be motivated when his needs are fulfilled. The need starts from the lowest level basic needs and keeps moving up as a lower level need is fulfilled. Below is the hierarchy of needs:

- Physiological: Physical survival necessities such as food, water, and shelter.

- Safety: Protection from threats, deprivation, and other dangers.

- Social (belongingness and love): The need for association, affiliation, friendship, and so on.

- Self-esteem: The need for respect and recognition.

- Self-actualization: The opportunity for personal development, learning, and fun/creative/challenging work. Self-actualization is the highest level need to which a human being can aspire.

2. Hertzberg's two factor theory
Herzberg's Motivation Theory model, or Two Factor Theory, argues that there are two factors that an organization can adjust to influence motivation in the workplace. These factors are:

Motivators: Which can encourage employees to work harder.

Hygiene factors: These won't encourage employees to work harder but they will cause them to become unmotivated if they are not present.

3. McClelland's theory of needs
McClelland affirms that we all have three motivating drivers, and it does not depend on our gender or age. One of these drives will be dominant in our behaviour. The dominant drive depends on our life experiences.

The three motivators are:

- **Achievement**: a need to accomplish and demonstrate own competence People with a high need for achievement prefer tasks that provide for personal responsibility and results based on their own efforts. They also prefer quick acknowledgement of their progress.

- **Affiliation**: a need for love, belonging and social acceptance People with a high need for affiliation are motivated by being liked and accepted by others. They tend to participate in social gatherings and may be uncomfortable with conflict.

- **Power**: a need for control own work or the work of others People with a high need for power desire situations in which they exercise power and influence over others. They aspire for positions with status and authority and tend to be more concerned about their level of influence than about effective work performance.

4. Vroom's theory of expectancy
Victor Vroom stated that people will be highly productive and motivated if two conditions are met: 1) people believe it is likely that their efforts will lead to successful results and 2) those people also believe they will be rewarded for their success.

People will be motivated to exert a high level of effort when they believe there are relationships between the efforts they put forth, the performance they achieve, and the outcomes/ rewards they receive.

5. McGregor's theory X and theory Y
Douglas McGregor formulated two distinct views of human being based on participation of workers. The first is basically negative, labelled as Theory X, and the other is basically positive, labelled as Theory Y. Both kinds of people exist. Based on their nature they need to be managed accordingly.

- **Theory X**: The traditional view of the work force holds that workers are inherently lazy, self-centred, and lacking ambition. Therefore, an appropriate management style is strong, top-down control.

- **Theory Y**: This view postulates that workers are inherently motivated and eager to accept responsibility. An appropriate management style is to focus on creating a productive work environment coupled with positive rewards and reinforcement.

Importance of employee performance
Employee motivation is the level of commitment, energy and innovation that a company's staff hold during the working day.

Maintaining and improving employee motivation can be a problem for companies, as not every task will be of interest and excitement to those who must complete it. Therefore businesses must work to find ways to keep up the motivation levels of their staff.

Higher productivity levels

If people are motivated to work faster and more efficiently, this will lead to more output. This can enable your company to do more, and even sell more.

More innovation

Not only will they produce more, but motivated employees are also more likely to make the offering even better. Being highly focused on the product or service, motivated employees will see areas for improvement and will be driven to work to enhance these.

Lower levels of absenteeism

Motivated employees are happier with their working lives and have a goal that they are working towards. These employees are less likely to miss work without good reason as they feel that this could delay their progress.

Lower levels of staff turnover

Motivated employees are more likely to stay in their roles as they can see the effects of their work and feel that there is an ongoing difference that they can make in the company. This can lead to lower training and recruitment costs for the company as employee churn is reduced.

Great reputation and stronger recruitment

As we will all be familiar with, people talk about the things they enjoy, and more notably, the things they don't. Satisfied workers spread the word and in turn, give the firm a good reputation as an employer. As a result, it becomes easier to recruit the leading talent.

Performance:
Performance is the process or action of performing a function or task. We perceive it

Employee motivation and performance are key factors in moving a small business forward. Owners, managers and supervisors know positive motivation leads to better performance and higher productivity.

A motivated employee is a business's most valuable asset. Research shows that a highly motivated employee has a higher level of employee performance while the opposite is true. To improve performance your human resource department must find creative ways to keep people motivated in the workplace.

Performance must be measured against job descriptions & goal set from time to time; & goals & expectations must be quantified. If the employee is motivated, resulting performance then depends on the personal characteristics of the individual worker & the situation or environment they work in. Their personal characteristics include personality and general mental ability.

Personal characteristics include skills & knowledge. These can be changed through training & experience. Performance can also be influenced by situational factors like company policies.

Types of performance
1.   Employees performance
Employee performance is defined as how an **employee** fulfills their job duties and executes their required tasks. It refers to the effectiveness, quality, and **efficiency** of their output. **Performance** also contributes to our assessment of how valuable an **employee** is to the organization.

Employee performance is a key factor that contributes directly to the performance of the company. Companies today, with increased competition in the business arena, are keen to boost employee performance in order to enhance their profitability, market reach and brand recognition.

However, simply doing employee performance evaluation is not enough - it should be followed up by mentoring and grooming sessions. Most of the organizations conduct workshops for this. The best practice to increase the input of employees in a company is the reprimand followed by encouragement policy. It should

also be remembered that the performance of a worker also depends on the relation he or she shares with the company, so it is also essential for a company to motivate and groom an employee in order to get the best results.

2. Organisational performance:

Organizational performance involves analyzing a company's performance against its objectives and goals. In other words, organizational performance comprises real results or outputs compared with intended outputs.

Organisation performance relates to how successfully an organized group of people with a particular purpose perform a function. (Louise James)

Environmental factors play a major role in determining an organization's success or failure. Managers should strive to maintain the proper alignment between their organizations and their environment.

All organizations have both external and internal environments.

An organization's internal environment is composed of the elements within the organization, including current employees, management, and especially corporate culture, working hours, motivational factor which defines employee behavior.

A manager's philosophical or leadership style directly impacts employees. Traditional managers give explicit instructions to employees, while progressive managers empower employees to make many of their own decisions. Leadership style also affects the employee's performance.

The external environment is composed of general and task environment layers. The general environment is composed of the nonspecific elements of the organization's surroundings that might affect its activities.

It consists of five dimensions: economic, technological, sociocultural, political-legal, and international. The effects of these dimensions on the organization are broad and gradual.

Relationship between employee motivation and employee performance

Motivation is the psychological process that gives behavior purpose and direction. and management is corned with the effect be and efficient deployment of resources. Human resource is one of the most important in any organization and company and the role of manager is to be a leader and achieve organization objective by developing a partnership with people. Motivation in work is one of the very variables determining employees performance. we can say that motivation it is hard to give any type of permanent definition about motivation but it is a kind of direction in which employees are ambitious and they can take action and make an effort. Motivation is an power that causes people to behave in a positive way motivation collective with ability result in performance. Motivation is the internal power or a type of energy and it pushes toward the performance of the employees. If desire and ambition are absent, motivation absent too because motivation are much do with desire and ambition. Motivation strengthens always give the way, courage energy and persistence to follow the organization goal. A motivate employee take action and does whatever and whenever it need to achieve their goals.

Motivating staff is a fundamentally important dimension of successful management and a vital aspect of a leaders role. Significant organizational outcomes can be obtained by having staff that are motivated. These include:

- Increased productivity in the workplace

- Reduced absenteeism and turnover

- Increased innovation and creativity

- Increased employee and customer satisfaction

- An enhanced company profile

- Higher quality products or services

- Improved financial performance

Employees want interesting work where they are given responsibility, autonomy, challenges and the opportunity to learn. Good working conditions, job security, and pay are important, appreciation should be shown and regular feedback should be given on an employee's performance. Managers holding this view of work and their employees would most likely demonstrate trust in their employees, use explanations and joint problem-solving methods, give staff room to interpret and implement organisational objectives for themselves, act as a

facilitator, provide opportunities for growth and job enrichment, allow staff to use their creative abilities and remove restrictions to doing a good job. The job of a manager in the workplace is to get things done through others. A committed and motivated workforce is critical to maximising an organisation's full potential. Highly motivated employees frequently seek to work beyond the bounds of their specific work roles and functions in order to not only improve themselves, but also to achieve the objectives of the organisation. Motivated employees can be considered vital to organisational survival in our rapidly changing workplaces and work world – they help organisations survive because they are more productive

At the end we can say that the performance of an organization is dependent on its employees. After all, your employees are the engine of your organization.

The extent to which employees are motivated in their work depends on how well those employees are able to provide output in their job. Motivation is expected to have a positive effect on quality performance. Employees who are characterized by a high level of motivation show a higher work and life satisfaction. Having a high level of motivation is therefore in itself valuable for employees and a decrease in motivation might affect employees negatively. The motivation leads to high level of initiative and creativity from the employee and where monitoring is difficult, motivation is therefore extremely important for ensuring high quality performance.

CONCLUSION
A positive workplace is the basic element that will get your company to the top. We understand that it may be time consuming and difficult to encourage employee motivation at the workplace. However, in order to achieve a high level of employee productivity, management needs to encourage a positive workplace environment. Ensure that your employees feel that their work and efforts is an important contribution to the company's success.

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REVELATION OF GENDER INJUSTICES IN DIVAKARUNI'S 'MISTRESS OF SPICES'

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ABSTRACT

Injustice plays a vital role in women's lives with a specified thought by the society that they are a weaker sex compared to the male which is a serious global issue underestimating the identity of women by segregating them with gender which is against the theory of libertarianism. As people suffered for the freedom of their voice when they were under the claws of suppression, which was effectively accepted by the world. But it is rarely accepted, when the theory of libertarianism is highlighted under the gender discrimination women. The discriminated injustice for women and the socially accepted rules only for women explicit the violation of their freedom which begins soon after the birth of a girl child. The revelation of gender creates the discrimination on the parental views when disclosed as a girl, the parents' thoughts would be filled with the burden of dowry and safety issues. Chitra Bannerjee Divakaruni in her notable work "Mistress of Spices" explicates the truth about the society in which women being targeted and suffocated to death. The research paper points out the imprisoned life of women and their convictions in which they were accused by their own family and the society was the 'gender' granted by the nature. Basically, speaking out the truth the word 'gender' defines a person's life and to achieve their dream. The gender discrimination begins with the prejudicial treatment on the ways of dressing, grooming, shaping their body, pursuing their dream, etc... Women being targeted by the society and were insisted to wear the unrevealing clothes, as it is believed that the revealing clothes creates the lustful emotions on men which is the major cause for the motives of rape and sexual abuses. Major novels of Divakaruni portrays the wicked life of women struggling under the man-made societal rules which destroys their life mentally and physically. The other Indian authors like Chitra Bannerjee Divakaruni were Sashi Deshpande, Anita Nair, Jhumpa Lahiri, Kiran Desai have also exhibited the sufferings of women and the injustices committed to women on gender basis. The research paper reveals the darkest side and the horrible truth of women being treated rudely because of their gender by the society and their families which was eventually rendered by many writers and feminists on their works, but the targets are same and the expectations on women to be silent are also same with no change.

Keywords: *Gender Discrimination, Violence, Humanity, Oppression, Right to Education, Rape, Dowry, Slavery.*

INTRODUCTION:

Elizabeth Fisher, author of the book *Gender Justice: Women's Rights are Humans Rights* defines the significance of gender roles by revealing that, "Gender is a cultural construct that refers to the different roles, responsibilities and activities that societies or cultures prescribe for females and males" (Fisher, 8). The social identity theory exposes the importance of individualism on both genders by attacking the stereotype societies via BIAS (Behaviours from Intergroup Affect and Stereotypes; see Cuddy, et al., 2007). The research paper focuses on the life of women living with a hope to see the light of the world and to fly like a bird towards their dreams. But every time when they try to pursue their dreams, they were put behind in the dark of their homes in the name of risking their safety and to safeguard their virginity. The identity loss leads to kill the human existence in life and the societal pressure adds up the uncontrollable emotions by silencing their real self.

The unfair treatment towards girls and women emerges from the discriminated tasks granted for them to perform at their home. The boys were assigned with the tasks of shopping and were permitted to hang out with their friends as per their wish. But the girls were given the tasks of handling the household chores, as it is believed that women are born to look after the home and kitchen as a wife and a mother. The gender superiority theories are exposed with the realistic examples and stand out as an exemplary ideology.

The society pressures the women to remain calm as air and symbolizes them as a beautiful flower in order to confine them as the weakling. It has picturized women as an easy-going natured personality rather than the conflictual personality. Women were taught to behave as a non-violent person, just because the society is watching over them and were brought up with inadequacy. Chitra Bannerjee Divakaruni, an Indian-American author who has penned the best novels and short stories. Most of her novels shares about the plights of women and their hellish life which drifts their happiness in the form of culture and tradition.

MAIN BODY OF PAPER:

Chitra Bannerjee Divakaruni's bestselling novel *Mistress of spices* depicts the story of the mystery woman Tilo and the people she encounters while she was working as a mistress for the spices. This novel has been widely appreciated by the New Yorker, "Beneath the sighs and smells of this brand of magic realism, [Divakaruni] deftly introduces her true theme: how an ability to accommodate desire enlivens not only the individual heart but a society cornered by change" (**divakaruni.com**).

Magical realism can also be viewed as an enchanting theory when compared with Divakaruni's novels. The author uses the theme to heal the destroyed souls and connects the protagonist with the real personalities to create hope in the readers. The novel *Mistress of Spices* renders the violence and abuses which women experience in their life before and after their marriage. The protagonist of the novel encounters various personalities in her world and uncovers their stories through the magical spices. The author characterized the protagonist as a magical angel who helped the broken souls by providing them the magical spices.

"Her lips are pale as pressed rose petals, her eyes like broken glass. She sways a little and puts out her other hand" (Mistress of Spices, 103). Ahuja's wife one of the most broken soul and a silent customer of Tilo's shop. Her distressed image is sketched with the sensual words by the author where Divakaruni picturizes the shattered women living in the shelled world, encountering the same emotions like the victims of abusive relationship. The faded identity is depicted through the name of Lalita being represented as Ahuja's wife, "Ahuja's wife of course has a name. Lalita. La-li-ta, three liquid syllables perfect-suited to her soft beauty. I would like to call her by it, but how can I while she thinks of herself only as a wife" (Mistress of Spices, 14) which delineates the life of each and every women after marriage.

The factual words of Divakaruni expressing the importance of identity shows the negligence of women to care about their self and their identity in the process of saving their family's reputation. "Lalita Tailor Works" (Mistress of Spices, 15) the unattainable dream of Lalita to have her own identity and to eradicate the loneliness from her life. But she was aware of the fact that her is life is no more hers, as she was sold to her husband in the process named 'MARRIAGE'.

When a child is born into a family of tradition, the cruel fate regarding the child's life is decided based on the child's gender. If the gender is declared as boy, then the mindset of the family is structured with the future which is clear with no restrictions and uninterrupted freedom. But the fate of a girl child becomes prominent with restrictions and the influences of the culture regarding their behavior, emotions, dream, education, marriage. The societal influences pressurize woman at every stage which portrays the upper hand of the society on the gender discriminated thoughts.

Lalita's passion on setting a tailoring shop shows her determined life and the clear picture on her future. If she was born as a male child, then she would not have been pressurized by the society and her family to leave her passion to start a new life with her husband. As she was a woman in gender, she was sincerely advised by her neighbors and her family to drop her dream work, in order to marry the well-salaried person working in the abroad.

The society has generated the historical myths on women by grading them as soft as a flower and obedient like a slave. A change in a women's character creates a trauma in the traditional views of the society and the people changes into the perpetrators in their life by abusing them physically and verbally. The historical beliefs on women's inequality and gender discriminations influenced the abusive spouses to take advantage of their wife by chastising them. The abusive spouses believe that chastising their wife or beloved physically is the right way to teach them their position, a wife as a slave.

The sacrifices of women are the major threat for women in their lives, which they never understood until their life got complicated with those unexpected problems. Lalita chose the life of being a wife instead of pursuing her own career, just to avoid from shame and humiliation as an unmarried girl in society. A girl being unmarried is considered as the greatest humiliation by the society. The societal influences crush the life of each woman and their dream. The historical excuses on gender variations that men can marry at any age and are considered as a fitting male after achieving a reliable job.

Men were never asked to leave their job and their parent's home after their marriage. The favoring culture and the traditional views of the society picturizes the gender ideologies in conjugal marriages. Simone De Beauvoir, the French philosopher and feminist speaks about the blind truth of women being bought as an object by their husbands and were used as servant in the tradition of the cultural marriages. The parents believe that their girl child is worthless until they were bought by their husband with a ransom price and they blindly trust that their

trading with the son-in-law's family would help their daughter to live a happy and successful life. But they had no idea of the fact that the trading always ends up them into the trap of their new master.

There is unanimous agreement that getting a husband-or in some cases a 'protector'-is for her(woman) the most important of undertakings…She will free herself from the parental home, from her mother's hold, she will open up her future not by active conquest but by delivering herself up, passive and docile, into the hands of a new master…. (Simone De Beauvoir, 352).

Chitra Bannerjee Divakaruni, the author of the renowned novel *Mistress of Spices* reflects the problems of women and the violence featured against them. Lalita, a woman with her own dreams was convinced to marry and migrate with her new husband to another country leaving her family and her everything in order to maintain the respect of her family. ""One night, two nights," says Ahuja's wife, "he's patient. Then he too gets angry"" (Mistress of Spices, 105). The forced sex reveals the uglier truth of marriages which can be called as a legalized rape.

Lalita depicts her past with Tilo that she was cheated by her husband visually. The baldness and the belly which she complaints it as, "potbellied" (Mistress of Spices, 105) and picturizes her innocence being used by her own family in order to get rid of her in the process of marriage, a trading traditional custom. Marriage the easiest and proud way for the parents to cut off the ties and decrease their worry over their daughter. Her choices never matter to anyone as the decision is always never relied in the bride's hands. She was forced to marry the person whom she despised and called, "liar cheater son-of-a-pig" (Mistress of Spices, 105) in her wedding.

Lalita's husband very well knew she did not like him but he never tried to understand her or gave her the time to get adapted to the situation. He was so obsessed with getting the experience of the first sex with her. His inferiority complex is portrayed in his action, raping his own wife after a few days of their marriage who was unable to wait for her consent. Consent for sex is never required in a marriage, a major belief in marriages.

Ahuja's actions reveal the fatal truth of women being raped by their own husband. The words of Lalita describes the beginning of the abuse in every relationship, "I push him away he grabs me and... […] A hard male elbow holding down on the mattress, a knee pushing her thighs apart. And when she tries to claw, to bite […] a slap to the head" (Mistress of Spices, 105-106). Her attempts to avoid the abusive life would make her life more pitier than the current life. The married woman running away from her married life would be never accepted her own family and the society. The word "honor" (Mistress of Spices, 106) relies the message of getting raped by her own husband is much better than getting raped by the strangers in the road, which is the true plight of the women running away from their marriage life.

CONCLUSION: -

Chitra Bannerjee Divakaruni has portrayed the truth about the fate of a married woman Lalita and the sufferings she experienced in her lonely migration phase after her marriage. She also reveals the truth of women's success being decided by their husbands. When Lalita opposed her husband, she was beaten and mistreated in her own home by her own husband who should be the major person to give her the warmth and the support she needed. Lalita sacrificed her dreams, her family, her happiness and left her native land by accompanying her husband for his dream and his work. But after the migration, her husband returned to his normal life, and Lalita spend most of her time in loneliness which gave her a courage to ask him about pursuing her dreams in the unfamiliar land. The answer for her courageous act was the hell punishment of getting beaten to death and being raped by her own husband.

The same brutality was encountered by many women who lived in Umoja, Nairobi which is a village in Kenya. They also faced the same unfair treatments by their husbands and Rebecca Lolosoli the Samburu woman created the village for women and the girls against the male gender and only for women who suffered violence because of the men in their life. The village welcomes the women who ran away from their home due to the miserable forced marriages and the dejected women who were raped by their husbands legally. Rebecca Lolosoli's social awareness thinking on creating a shelter for the suffering women made the world to see women's strengths and their individuality. Also, she helped several women by sharing her lengthy shoulders to transform their life. Further she remained as a substructure for them to lead a happy life by forgetting their hurtful past.

Rebecca Lolosoli, the social activist can be addressed as the strong icon lady and the greatest hope for the any colored and any country women who encounter the same violent experiences in their life by their family. The present twenty-first century has been modernized in many ways and but lacks to modernize the restrictions in women's lives which was fabricated by preceded humans of the past centuries in the society. Though the

society suppresses the women physically and financially, still they never give up in their life, as such Lalita was in the binge of depression and shut her down completely to strangers. When Tilo tried to help her with her magical spices, she slipped herself away and found herself hard to escape from her husband and her abusive life. Tilo acted as Rebecca Lolosoli and gave her the helpline number to save herself from the abusive relationship.

The author Chitra Bannerjee Divakaruni also describes about the immigrant women and their experiences on their transformation which was reviewed by the author Amy Tan that "The Mistress of Spices is a dazzling tale of misbegotten dreams and desires, hopes and expectations, woven with poetry and storyteller magic" (**divakaruni.com**). She incites the talent of Divakaruni in writing and also in depicting the problems faced by the immigrant women through her works. The only hope that is left under her works are to create the change and to insist the equality in women's lives. The change can only be seen when people begin to think that all genders are equally categorized under the category humans and discrimination is always a sin.

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A STUDY OF SOCIAL ISSUES PREVAILING IN RURAL AREAS AND DEVELOPMENT OF VILLAGEMITRA APPLICATION AS A SUSTAINABLE SOLUTION

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ABSTRACT:
Today's world is rapidly growing with advancement in technology but it badly impacts on environment. As Village life is very much close to environment and natural resources found in environment. So to sustain village life environment and its natural resources need to be conserved. In today's digita-l world technology has become inseparable part of human life. The study aimed to identify social issues in village. Make people aware government policies/ subsidies/ schemes towards rural development and applying suitable policies to village. Design a model – VillageMitra which will facilitate use of sustainable practices through trainings for conservation of natural resources and make best use of technology to provide professional resource support to encourage and enhance sustainable practices. Study evolve futuristic methods that could be pivotal for the sustainable utilization of natural resources and thus help government to frame policy on environment for rural areas based on survey analysis. It will benefit to society once village become sustainable village.

Keywords: Social issues, Rural area, VillageMitra App, Sustainable solutions

INTRODUCTION:
Rural development is one of the utmost important factor for progress of any country. Government of India is taking lot many steps for the rural development but still this development has not been reached to the last person. Four main aspects of rural development need to be focused agriculture and related activities, education, infrastructure and natural resources. There are various government schemes and policies which need to percolated to the villagers.

Village sustainability is perhaps most obviously a problem for developing countries in today's era as village life is vanishing. Village life is mostly depending upon the environment. So to sustain village life we have to conserve environment. With reference to AICTE environment policy 2020 we have to conserve the natural environment, develop sustainable solution, innovations & start up, promote rural technologies and control energy consumption.

The Smart Village Framework for a region depends on the availability of natural resources, geographical features, understanding socio-economic aspects of villagers. Technology will work to provide means to adapt sustainable practices by understanding gaps in the agriculture, energy, water resource and livestock.

Proper infrastructure need to build up for bio- fuel generation centre, overhead water tank. Smart farming can be achieved using technology along with traditional farming. There should be provision for water supply for agricultural, household use and drinking, which may facilitate effective and proper utilization of the surface and ground water resources. Sanitization and disaster management are again one of the aspects which need to be paid attention. Virtual classroom facility may be provided to use the benefit of available experts at other locations for remote villagers.

The smart village model consists of dimensions like Governance, Technology, Resources, Village Service, Living and Tourism of the concerned village.

This study tries to identify the problems faced by villagers. It has been observed that there is not adequate awareness about technological advancement, energy conservation and waste management practices as well as government policies. In view of this the proposed research will develop VillageMitra application as a sustainable solution towards resolving social issues prevailing in rural areas. An android application created which is helpful for the people of village to know what new government scheme has come via our app only. Farmers of the village can get market rates of different products just on single click. Technical team of android app will be responsible for providing details of government admin and government admin in turn will be responsible for adding the new latest government schemes for villages.

The proposed VillageMitra android application will consist of four modules that are knowledge repository, training program conduction, sustainable practices like rainwater harvesting, Sewage Treatment Plant, energy conservation, etc. and Report generation.

RELEVANCE OF THE STUDY:

Today's world is rapidly growing with advancement in technology but it badly impacts on environment. With rapid growth of industrialization there is an increasing demand of energy resources. This give rise to the concept of energy conservation and waste management. Government has laid down many policies, schemes for this context. Government of Maharashtra introduced scheme for smart villages as a proactive approach in 2015. But due to lack of awareness this scheme was not successfully implemented, so as a need of an hour government of Maharashtra reintroduced the scheme in association with Microsoft by announcing prize amounts to ₹20 lakh and ₹50 lakh at the taluka and district levels respectively. All these practices failed to give the desired result as many villages deprived from such policies.

So there is need for energy saving through energy efficiency and conservation not only to cut the cost but also to preserve the resources for longer use.

This study tries to create environment awareness among villagers by changing the mindset of youth. This study focuses on three major environment aspects water usage, energy consumption and waste management. It also tries to reduce the life threatening problems by focusing on recycling the scare natural resources like water. This study will try to implement best sustainable practice to be adopted by village to sustain village life in today's era.

LITERATURE REVIEW:

Indian as well as global agriculture will face several challenges over the coming decades because it must produce more food to feed affluent and growing populations. Improving agricultural productivity while conserving and enhancing natural resources is also another problem in Indian agriculture. The solution of aforesaid problem in changing scenario is sustainability in agriculture production. In India, rural economy suffers from poverty, unemployment, malnutrition, limited diversification of farming and degradation of natural resources such water, land and forest. Livelihood diversification is essential for poverty reduction, food security, rural livelihood security and improved income for rural farming community. This study mainly focused on sustainable agriculture, its roles in rural livelihood security, and major issues in sustainable agriculture, finally it discussed the government policies and institutions for securing the rural livelihood. The purpose of this paper is to explore how sustainable agriculture policies can better serve the goal of poverty reduction as well as rural livelihood security. The efforts to stimulate and support to the sustainable agricultural growth are essential for the rural livelihood security and rural development in India.[1]

Livelihoods opportunities are referred to the opportunities that the rural individuals get engaged in with the main purpose of sustaining their living conditions. The individuals, belonging to all categories and backgrounds and irrespective of factors, such as, class, caste race, ethnicity, religion, gender and socio-economic background are required to look for livelihoods opportunities. The educated and wealthy individuals are able to acquire reputed livelihoods opportunities. Whereas, the individuals, belonging to deprived and underprivileged sections of the society are able to acquire lesser paid livelihoods opportunities. In rural communities, agriculture is stated to be the major occupation of the individuals. Apart from agriculture, they are engaged in number of other activities as well. These include, handicrafts, artworks, silk weaving, pottery making, small scale and cottage industries, and so forth. The main areas that have been taken into account in this research paper include, need for improvements in livelihoods opportunities, National Rural Livelihood Mission, aspects signifying rural livelihoods, role of agriculture in improving livelihoods opportunities, and measures to enhance rural livelihoods.[2]

This research focuses Green ICT implementation at educational institutes with environmental sustainability in mind that is, to contain the minimum amount of hazardous materials, to be energy efficient during the use period of their life cycle, and to be disposed or recycled with the minimum effect on the environment and human health. [3]

The authors make their point persuasively: Opportunities to increase profits by saving resources and/or reducing pollution abound, especially in old industries or in facilities designed before the first OPEC embargo. Innovation, ingenuity, and leadership have enabled the firms in these case studies to take advantage of these opportunities. Their competitive economy, based on efficiency and profit maximization, can and does promote the values of energy conservation, resource efficiency, and pollution reduction needed to build a sustainable world. While too dry for bedside reading, and while not detailed at all in the sense of engineering design, this book tells an important story. With increased competition from overseas, and with a need to manage all their resources even more carefully, they need success stories to spread the philosophy and the methods of making profits from pollution prevention.[4]

The explosion in world population is changing the nature of solid waste management from mainly a low priority, localized issue to an internationally pervasive social problem. Risks to the public health and the environment due to solid waste in large metropolitan areas are becoming intolerable. The paper has summarized the salient features of the current scenario of MSWM in India and the future directions for improving the situation. India currently is facing a municipal solid waste dilemma, for which all elements of the society are responsible. The community sensitization and public awareness is low. There is no system of segregation of organic, inorganic and recyclable wastes at household level. There is an adequate legal framework existing in the country to address MSWM. What is lacking is its implementation. In spite of a stringent legislation in place, open dumping is the most wide spread form of waste disposal. The possible reasons for poor implementation could be a combination of social, technical, institutional and financial issues. Public awareness, political will and public participation as essential for the successful implementation of the legal provisions and to have an integrated approach towards sustainable management of municipal solid wastes in the country.[5]

As India has been facing the consequences of drought, the development of efficient water and energy management revival schemes are inevitable for maintaining sustainability. Most is of our village infrastructure of our associated with over tanks and bathtub based on the population of village/street. Turn ON of public water tank pumps without considering tariff and time period (Peak and low peak), Turn OFF the pumps once the water overflows from the tank and Overconsumption of water for public water tubs are the hectic issues. Due to these issues, the excess amount of water is being wasted and a considerable amount of pressure is kept on the load dispatching center by adding load during the peak time period. In this paper, the embedded controller based revival scheme is proposed to suppress the wastage of water and improper energy utilization on a common interest. The real-time clock, GPRS module, and various sensors are interfaced with a controller to communicate with the pump and the operating personnel.[6]

Today, development of cities and villages has created many environment damages and presenting some solutions to minimize these damages is useful. We should find a new model of residential area to fulfill with the new community requirements and create sustainable development in urban and village residential areas. The present study introduces and evaluates eco-village and how eco-villages have considered the concept of sustainability.[7]

The reason behind water crisis is its increased demand, zonal disparity in distribution, inadequate knowledge, change in land-use, water level decline and increase in salinity and pollution. Environmental sustainability considerations are integral part of India. The need for conservation of natural resources have been expressed in Indian scriptures more than three thousand years old and same have been reflected in our constitution and policy framework. Not only water and air pollution, degradation of land and forests.[8]

Rural energy plan should be integrated with the development planning of the area. It should address the rural economic development in an environmentally sustainable manner. Untapped energy sources can be used with the help of appropriate technology to meet the need and demand of fuel wood in rural areas. A powerful educational programme can play a significant role in motivating the rural masses for adoption of appropriate technology. Every sector of Government and non government agencies may help in implementation or of successful rural energy programme in India.[9]

V Ajit Prabhu, Sumesh R Nair, Pervaiz K Ahmed and C Ganesh 2013 wrote paper which uses ABC theory as the base theoretical model which assumes that behaviour (B) is a product of attitudes (A) and contextual factors (C) (awareness level, availability of physical infrastructure, socio-cultural institutions, training, etc.). It is assumed in the paper that in conditions of normalcy, factors in both domains (A and C) are collectively responsible for the presence of behaviour. However, different combinations of the variables result in different outputs of (presence or absence) behaviour. For instance, in an energy-saving situation, it could be assumed that having an awareness of the importance of energy saving and a positive attitude towards energy-saving equipment will produce positive behavioural change. [10]

For the development of the region, there is every need to utilize energy efficient techniques and potential of available renewable energy resources. An economic solution can be achieved by proper energy management making the village self-sustained in its energy requirement. By employing existing but well proven energy conversion techniques, these resources can be used for various energy requirements for basic needs like electricity, cooking, water heating etc. [11]

This is evident from the disappearance of forests, village wood lots, roadside trees, construction of giant hydroelectric dams, fossil fuel based power plants and controversial nuclear plants. This conflict between energy demand and environmental quality goals can be solved by having an integrated approach to the problem

of energy planning with a view to minimizing consumption of non-renewable sources of energy and maximizing efficiency of energy use and harnessing of renewable sources of energy in an ecologically sound way. [12]

Village development that provides solution of village problems by utilizing technology to ease information access and provides energy access effectively. The smart village model consists of dimensions like Governance, Technology, Resources, Village Service, Living, Tourism of the concerned village. [13]

An android application created which is helpful for the people of village to know what new government scheme has come via our app only. Farmers of the village can get market rates of different products just on single click. Weather prediction and associated guidance will certainly help farmers to increase their crop by checking weather before planting seed. Technical team of android app will be responsible for updating the market cost of crops and also fertilizers products and government admin will be responsible for adding the new latest government schemes for villages. [14]

The Smart Village Framework for a region depends on the availability of natural resources, geographical features, understanding socio-economic aspects of villagers. Technology will work to provide means to adapt sustainable practices by understanding gaps in the agriculture, energy, water resource and livestock. [15]

Rural development is one of the utmost important factor for progress of any country. Government of India is taking lot many steps for the rural development but still this development has not been reached to the last person. Four main aspects of rural development need to be focused agriculture and related activities, education, infrastructure and education. There are various government schemes and policies which need to percolated to the villagers. [16]

Proper infrastructure need to build up for bio- fuel generation centre, overhead water tank. Village population. Smart farming can be achieved using technology along with traditional farming. There should be provision for water supply for agricultural, household use and drinking, which may facilitate effective and proper utilization of the surface and ground water resources. Sanitization and disaster management are again one of the aspects which ned to be paid attention. Virtual classroom facility may be provided to use the benefit of available experts at other locations for remote villagers. [17]

RESEARCH METHODOLOGY:

This study will develop VillageMitra mobile application to attain the same.

Study understands and identify problems faced by villagers. Concerns pertaining to water availability and utilization, waste management and energy demands will be studied. Training programs, workshops will be organized for villagers about sustainable practices pertaining to these social concerns. Government policies, schemes and subsidies to solve the selected problems will be discussed with villagers.

Best suitable sustainable practices for above mentioned social issues will be identified for the selected village. These sustainable practices will be finalized after analyzing data collected in and study of government policies.

Detailed analysis and design for VillageMitra will be carried out in this phase.

Development of VillageMitra mobile app which will be user friendly and villagers can access it in hassle free manner.

Testing and post release maintenance of the developed android app will be monitored and assistance will be provided for villagers.

Above said steps are shown in below flow diagram.
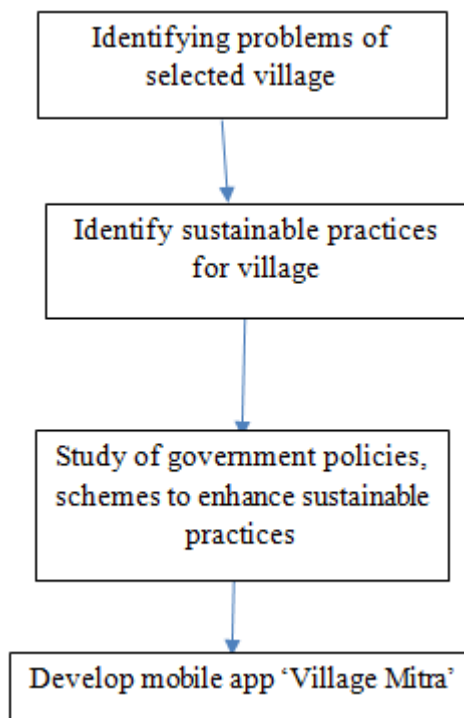
Fig: Flow diagram of proposed research proposal

ANALYSIS & DISCUSSION OF VILLAGEMITRA:
Importance of the Study:

1. This study will help village to reduce pollution and to use natural resource in optimal way.

2. This study will benefit to reach government policies/ subsidies/ schemes up to the villagers in easy way.

3. Project includes training to villagers that will result in better understanding of the government programs.

4. It will benefit to society once village become sustainable village.

5. VillageMitra application will help to create awareness about sustainable practices in rural area.

6. The study will identify social issue prevailing village.

FRAMEWORK OF VILLAGEMITRA APP:
Developing an android app which can be deployed on smart phone.

Proposed model will device solution for identified social issues pertaining to rain water harvesting, waste management and energy conservation.

1.   Knowledge Repository:
This module will provide information regarding various policies, subsidies, scheme or grampanchayat policies pertaining to sustainable practices.

2.   Training Program:
This module will plan training in the form of seminars, workshops, etc. on identified problems in the selected village. This module will allow villagers to enroll for trainings and consult with experts. Feedback regarding these training sessions will be conducted to know usefulness of such sessions.

3.   Sustainable Practices:
It will give detail information regarding implementation of sustainable practices like rainwater harvesting, Sewage Treatment Plant, energy conservation techniques. Villagers can use VillageMitra to check their eligibility to avail government policies. Vendors will be identified and they will physically visit the village for further implementation of sustainable practice.

4.   Reports:
Report generation module will help to give an overview of the following:

•   Detail information about total villagers benefited by the scheme.

- Detail information about villagers implementing sustainable practices.

- Report regarding total training programs conducted during 6 months/ 1 year.
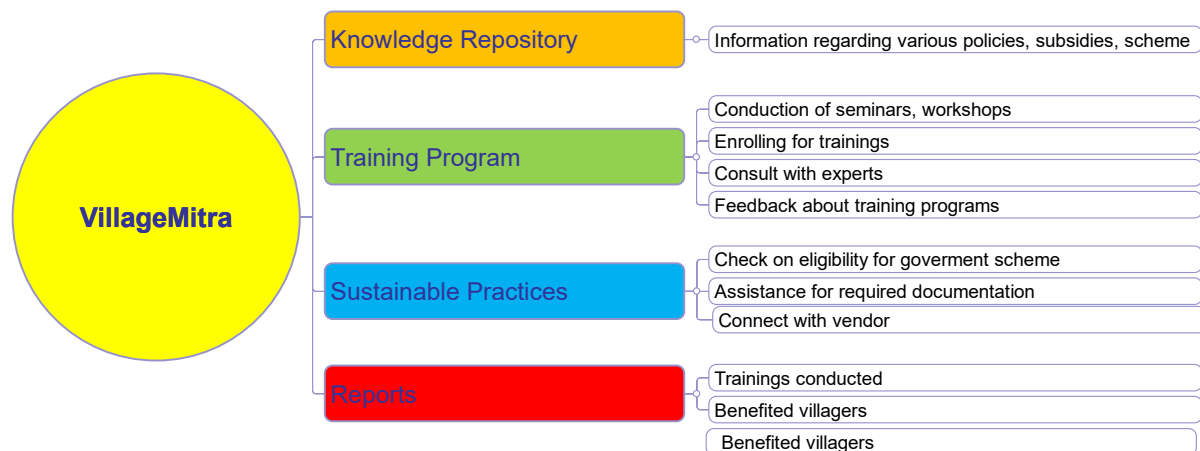
Fig Framework of VillageMitra App

CONCLUSION:

Sustainable development of villages is largely about people, their well-being, and equity in their relationships with each other, in a context where nature-society imbalances can threaten economic and social stability. **Regardless of the economic endeavors, development is closely linked to use of the natural resource endowment**. The study examines major challenges faced by the rural population who make their living by tapping and processing the resources. Furthermore it draws the attention towards various policies schemes and training programs through VillegeMitra for rural communities. The study has analyzed the enabling conditions required to mobilize investment in sustainable practices and the potential benefits. In order to minimize the obstacles in potential development, VillegeMitra laid down the guidelines in order to achieve a more satisfactory results which not only motivates villagers but also helps them to implement it. Therefore it provides fresh perspective resource efficient technology and socially inclusive economic growth.

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REVERSE SUPPLY CHAIN MODEL: A GAP ANALYSIS WITH REFERENCE TO WASTE REDUCTION IN INDIAN FMCG SECTOR

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ABSTRACT

Indian FMCG sector is the 4th largest sector and also its contribution in generating pollution through various means is bigger. To resolve the problem of pollution, green marketing practices are undertaken by various sectors worldwide. This study has focused upon Indian FMCG sector and pollution generated from sector through waste disposal even after practicing green packaging. The study aimed at examining the implementation of green packaging and has tried to discuss its contribution in reducing waste from the landfill. Also, study tried to identify the need of reverse supply chain in Indian FMCG sector. This study is based on secondary data collected from various websites, research articles, newspaper articles, etc. The study has tried to evaluate the green packaging practice followed by Hindustan Unilever Ltd. and ITC Ltd. Also, the study tried to figure out the gap between the contribution of FMCG company for waste reduction and the waste gathered at landfills in India. To overcome the gap, a model representing reverse supply chain (RSC) is described. The study concluded with certain major aspects that are necessary for a successful implementation of the RSC model.

INTRODUCTION:

Indian FMCG sector is the 4th largest sector also the pollution generated is higher. To heal the environment and to eradicate the harmful effects and various pollutants generated, green marketing practices are adopted. Green marketing practices includes green manufacturing, green packaging, green disposal, green products, etc. This study aims at focusing on green packaging practiced in Indian FMCG sector. The major pollution spread is because of waste disposed in landfill in the form of plastic and paper packaging. Not all the packaging is recycled or reused also the packaging which is biodegradable are not given sufficient or needful segregation treatment. This study tries to resolve the problem of waste segregation and re-direct the waste towards recycling/ reusing treatment rather than disposing them in landfill.

Key words: Recycle, Reuse, Biodegradable, Waste disposal

REVIEW OF LITERATURE:

Srinath Srinivasan, Wen F.Lu (2014) presented various tools of sustainable packaging decisions used in FMCG sector. These packaging designs were more or less user friendly considering the main factors such as cost, attractive and eco-friendly. Researchers tried to present the paired comparisons of relevant FMCG products to evaluate their packaging.

Ankit Patel; Dr. S.N. Teli; Yogesh Dhumal (2018) has described in depth the major packaging materials along with the environment friendly properties in them. They discussed about polymers such as "glass, metals, plastics, paper, laminates, co-extrusions and bio-degradable". On their concluding part, they discussed the concept of green packaging was not the sole holders i.e., government, policy makers, consumers, local municipalities, investors and packaging suppliers should hold upon with the company to contribute in waste reduction and proceed towards zero-waste approach.

Ahmed Hussein Ali; Siddharth Zalavadia; Mahmoud Ramadan Barakat; Ahmed Eid (2018) has tried to examine the impact factors of related to reverse logistics upon sustainability. A primary study was conducted among the main players of reverse logistics indicating the performance in FMCG sector. The study concluded that the reverse logistics has significant favorable relationship with time, cost, recycling efficiency and quality. But it has adverse relationship with waste. On concluding part researchers disclosed that social performance could only be positively influenced by recycling efficiency.

Wong Ker Xin; Yap Kar Sen; Salini Devi Rajendran (2019) in their study on advantages of green packaging having its positive impact on sustainable supply chain management. Researchers explored the relationship between various features which creates advantage in FMCG industry. The features that aroused various benefits such as reduced expenses, eco-friendly, legal compliance and image of brand. The study was primary in nature and data collected was by taking interview. Exploratory analysis was conducted and study concluded that there was a significant relationship between the advantages generated from green packaging that leaded company towards successful sustainable supply chain management.

G. Hesil Jerda, Dr. S. Sahayaselvi (2020) has focused on disclosing the level of pollution in coastal villages and their nearby areas caused due to human and other living creatures. Researchers tried to address them to the key players i.e., consumers, policy producers and manufacturers. This was the primary study conducted in Kanyakumari district of India. The respondents were 395 for the study. The study concluded that the consumers even though they had low-income scale they were concerned about the environmental conservation.

RESEARCH METHODOLOGY:
This study is completely based on secondary data i.e., websites of respective companies, Hindustan Unilever Ltd. and ITC Ltd. They also studied various reports, newspapers articles and research articles for gathering the qualitative secondary data. On the basis of analysis done for review of literature, the study was able to find the research gap and need of the study viz. The implication of reverse supply chain by Indian FMCG company for green packaging with the motive to reduce solid waste from landfills.

EVALUATING INDIAN FMCG COMPANIES ON THE BASIS OF GREEN PACKAGING PRACTICES AND REVERSE LOGISTICS:
I) Hindustan Unilever Ltd. (HUL):
HUL has contributed in making green disposals of 1.2 lakh tons or more of post-consumer-use plastic waste, since 2018. HUL practiced green disposal of 39,000 tonnes plastic packaging in 2019. HUL reduced their aluminium packaging of deodorants. Also, they have revised the size of packaging of a product which are sold in sachets prevailing in hair care (personal care) and home care products. This innovation in packaging helped them in reducing over "3,800 tonnes of polymer, 102 tonnes of aluminium and 2,700 tonnes of paper across categories" in 2019. Conversion of shampoo sachets and soap bar wrappers into the recyclable materials. 2019 was a green year with application of 1.5KT of Post-Consumer Recycled Packaging.

By 2020, company has targeted to reduce the waste generated while manufacturing a product to half. Also, they are partner with Xynteo and UNDP in order to achieve their target of sustainability. HUL ensured that their plastic packaging will be completely recyclable, reusable or compostable by 2025. They have already started working in order to achieve their target of replacing the virgin plastic for nearly 100,000 tonnes with recycled plastic. By 2030, they aim to reduce the affect that the greenhouse gas has on environment produced due to their manufacturing process. In order to recycle the packaging, HUL uses r-PET (80% recycled PET) personal care products i.e., Glow & Lovely, Pepsodent, etc. While, Vim bottles with 50% of r-PET. They adopted post-consumer recycled polymer consisting 25% r-HDPE in our bottles of Surf Excel, Tresemme, etc. The company's dedication remained untouched of covid crisis and stayed still in practicing the plastic waste reduction. Hindustan Unilever Limited (HUL) declared from 2021 onwards, the plastic waste collection will be higher than the plastic waste production. Also, the process for around 1 lakh tons for PCR will be undertaken from each state and UTs.

II) ITC Ltd.:
ITC successfully contributes in waste management by its WOW initiative which helps in promoting awareness regarding recycle and waste segregation. They ensured the impactful implementation of practice by establishing a system. ITC along with local municipality trained workers who were collecting wastes and rags. This systematic segregation helps in reducing waste proportion disposed in landfills. The dry waste gathered are reused as raw material to manufacturing industries such as glass, paper and plastic. "ITC's well-being out of Waste" program has involved such 13 million citizens who contributes in MSWM (Municipal Solid Waste Management). A promising forecast of 100 percent reusable, recyclable or compostable packaging in next ten years is made by ITC. They will try to reach this year 24 states to collect nearly 30,000 tonnes of plastic waste and collect more plastic than generated by the company.

ITC has come up with a sustainable model for its solid waste management in which he has focused on three main areas i.e., replicability, scalability and sustainability. Step wise segregation is practiced starting from collecting waste from households. For this ITC has a tie up with local bodies in urban areas and panchayats in villages. They are recycling the dry waste collected and preparing compost from wet waste. Post-consumer multi-layered plastics are recycled with different methods successfully and feasibly. They reached to 3.4 million houses for same.

ITC bifurcated the waste in three types and the proportion of their waste generated and recycled by the year 2019-20 i.e.,

(i) Specific waste generation: The total waste generation from entire ITC PSPD units as well as other units reduced upto 9% as PSPD Bhadrachalam accounted for 8% less waste generation this year. The unit wise

contribution in waste generation: PSPD Tribeni 5%, PSPD Kovai 2%, PSPD Bhadrachalam 80% and other ITC units 13%.

(ii) Hazardous waste: Out of total waste generated, 97% got recycled and 3% was disposed as per legal approvals. Only 3% of total waste generated was of ITC.

(iii) Non-Hazardous waste: 99.82% waste got recycled either reused as per the applicable feasible treatment. Fly ash generated from boilers was used by cement and brick manufacturers. Bottom ash taken for producing bricks and filling up lower regions. Wood waste was used in boilers of inhouse. Lime sludge was reused by cement manufacturers and inhouse lime kiln.

ITC considered the following aspects of Sustainable Environment Friendly Packaging:

(i) Reducing hazardous impact on environment

(ii) Minimizing plastic packaging

(iii) Recycling and revamping the Multi-layered laminate packaging

(iv) Exploring recycled plastic for products other than food

(v) Life Cycle Assessment (LCA) application

(vi) Replacing current plastic packaging with biodegradable and to substance having least carbon foot print.

(vii) Cradle-to-Cradle solutions for packaging waste

TC's total carbon foot print derived from its packaging at the end of year is 180,000 MT (approximately). This consists of 77% by packaging based on paper, 22% based on plastic, 1% of glass and metal. ITC's 21% paper packaging is having certification from FSC and 55% is in form of CFCs produced from recycled materials. 85% is the thin or multi layered plastic while remaining are following in PET or others.

IMPACT OF THESE PRACTICES ON WASTE COLLECTION ON LANDFILLS:
The Indian FMCG companies has led the year 2020 as the year of highest waste collection and leading the processing of waste. 60% of waste got processed in the year 2020 while 53.19% of total waste generated was processed in 2019. The study remarked that since 2019, the waste segregation and processing got a keen upgradation due to the spread of maximum awareness (statistica, 2020). But still the conditions in landfills are not improved as they should like they sound by when the above data was disclosed.

Urbanization, economic development and population increase are the crucial factors contributing in waste generation. In fact, a report disclosed that India is the most waste generating country according to world bank. According to statistics disclosed in the year 2016, India produced 277 million tonnes of municipal solid waste per annum viz. 80% higher than 334 million tonnes of waste from south Asia and 13% of waste generated worldwide. This will increase to 387.8 up to 2030 and 543.3 up to 2050 specifically in India. Further the statistics disclosed that the 33% waste is dumped openly, worldwide. Precisely, when study narrow down to India 77% of waste is openly dumped, 18% of total waste is biodegraded and only 5% of waste is recycled (TNN, 2020).

The FMCG Companies are processing the waste generated from their company. The study revealed that HUL has a targeted to achieve up to 100% recyclable packaging of plastic by 2025. Also, ITC has aimed at achieving the sustainable goal of segregating waste more than generated i.e., segregating waste proportion is 100% higher than proportion of waste generated by company up to 2030. Likewise, Coca-cola, Future consumer, Pepsi-co, Parle Agro, Marico, Nestle India are having the goal of achieving 100% recyclable packaging by 2025. (Himadri Buch, 2019). But as the results are disclosed, it seems companies need, to practice with greater efforts than what they are investing now to achieve the target in near future as per their forecast. If each company takes the responsibility of the waste generated (including the plastic waste while production, consumer waste generated after disposal and the waste gathered in landfills) from their company and collect their waste back from various sources, the impact will be reflected significantly from the landfill waste reduction.

This contribution will lead companies towards stronger CSR implication for environment. This will include all the stake holders involved in the supply chain of a FMCG product. The following RSC model will describe the application of Reverse Supply Chain with the concept of Cradle-to-Cradle Life Cycle Assessment.
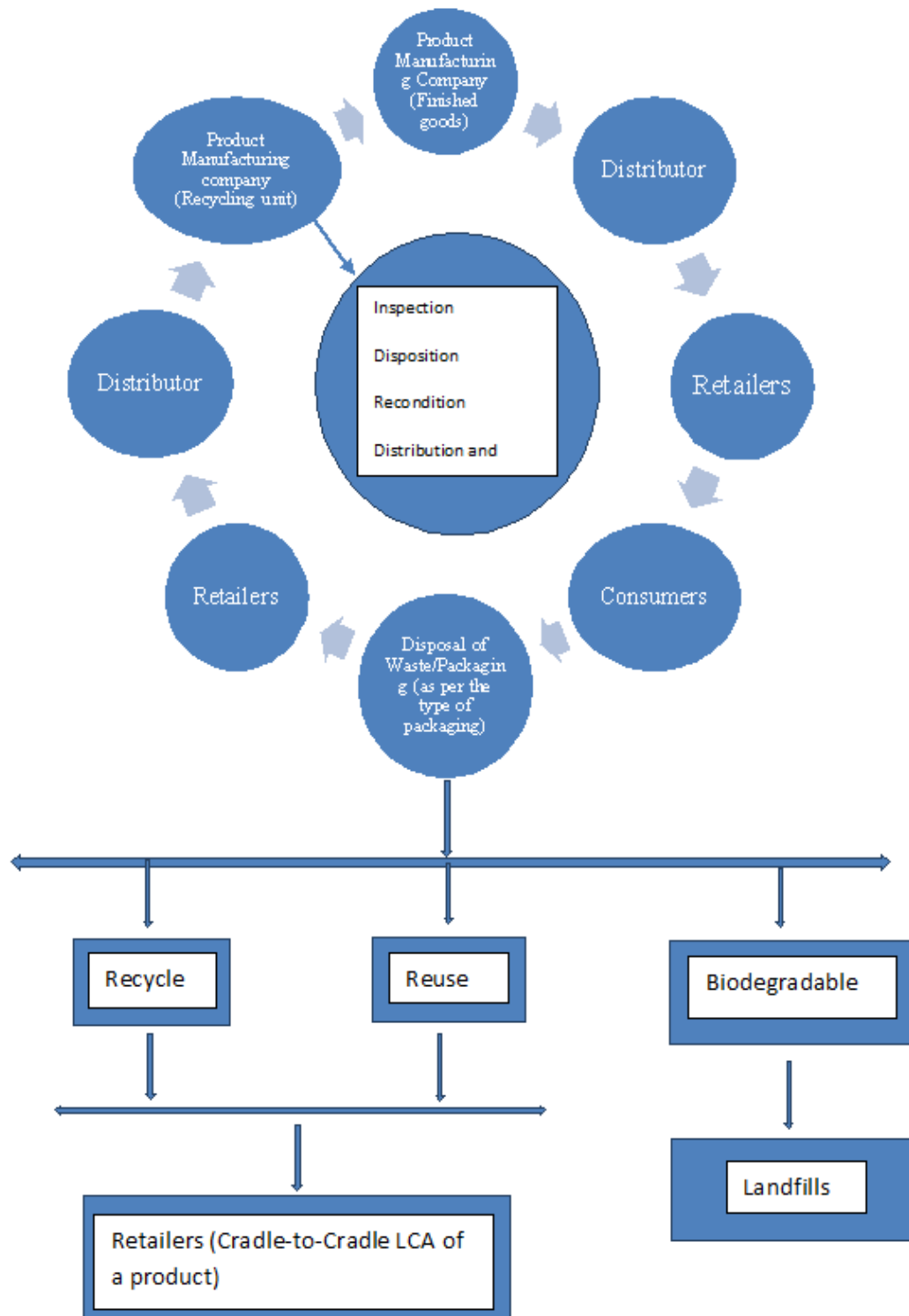
CONCLUSION:

Successful implementation of this model can contribute effectively in reducing landfill waste and rejuvenate the mother earth by making it free from plastic. For implementing the model, following points are necessary to be considered:

(i) Educating stakeholders about the type of plastic and its properties.

(ii) Specifying the type of packaging so that the disposal of waste could be made precisely. Also, the waste collectors will not face much difficulty while processing segregation.

(iii) A company should specify and make each stakeholder aware about the green practice they are following.

(iv) Involvement of each stake holder is must for successful implementation of the reverse supply chain.

LIMITATION AND FURTHER SCOPE FOR THE STUDY:

This study is limited up to the information available on secondary sources. Also, only two companies of Indian FMCG sector are taken for analyzing critically. An experimental approach with the model of Reverse Supply Chain can be made in future to examine its practical applicability towards solid waste reduction from landfills of India. Also, it's application from the view point of company as well should be taken into consideration for further scope of study.

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A PLUNGE INTO DARK WEB AND ITS ETHICAL ANALYSIS

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ABSTRACT
Dark web, a way to hide services from other users, often used by cyber criminals. Internet connects millions of computers by creating a network in which any computer can communicate with other computers connected to the Internet. The web is a medium that provides access to information. Dark web is accessed by Tor (launched in 2002 by the US Naval Research laboratory) and purpose is to keep information/data hidden. Anonymity is not completely verified on dark web, but it does provide a factor of data hiding. Number of anonymous users can be calculated through client request directories. This paper discusses how Dark Web is expanding its root in society as well as the pros-cons that are generating by the usage of this technology. This paper also discusses various case studies related to Dark Web.

Project Title- The Impact of Employee Engagement activities/Practices on Employee Productivity

1. INTRODUCTION

Nowadays three webs are available for usage. First one is *surface web*: having searchable content. Second one is *deep web*: where contents are not available directly on search engines. e.g. medical reports etc. And the last one is *Dark Web*: also known as *Dark Net*. It is a small part of deep web. It cannot be accessed by standard browsers but accessible by Tor browser as shown in Fig 1.

DARK WEB was coined in 1970's for security purposes. It refers to online content which cannot be indexed by conventional search engines. Dark net websites are different from normal websites. These websites end with suffix (.onion). Also, these websites contain illegal material, hence, requires registration to use it. As there are many layers in onion. Similarly, onion address provides additional layer of security assurance. Hence, system got its name like this. Onion is a special name designated to onion service known as hidden service reachable via Tor Network. Hidden services are not only for the users, here, websites itself are hidden. Tor itself is not a hidden service but its websites host are. This means their IP address could not be identified/located.

Dark web favors both legal and illegal activities. Tor is the software name that we install on the computer and it enables users to access websites through virtual tunnels. It distributes data through public networks and route their traffic through "users' computers", in order that traffic is not traced back to the originating users. To pass the data from one layer to another layer, Tor has created "relays" on computers so that the encrypted information is placed between the relays. Tor traffic goes through three relays and then it is forwarded to the final relay/exit relay [1].
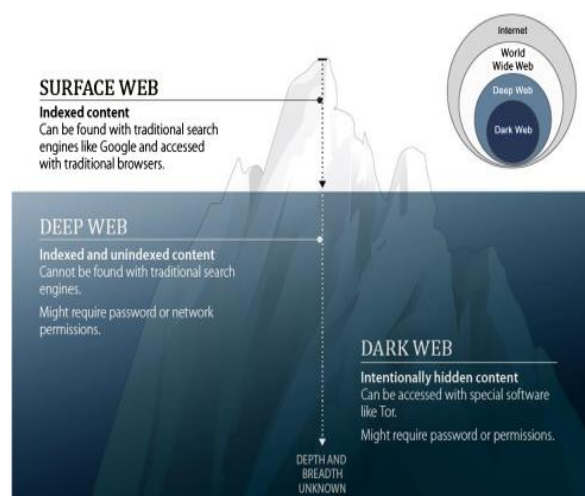
Fig1: Different types of webs [1]

The IP address of exit relay resembles the Tor traffic source. Browsing websites through Tor enables the display of the link for the given web page only but in the background, there exists the IP address for the exit relay of Tor as shown in Fig 2. E-mails, web chats hosted in Tor are used for more privacy.

Sometimes, when we are innocently searching anything on public sites. They use forms, data breach opportunities to steal information and sell it on dark web. Also, there are cases when we do not provide sensitive information then how hackers get these? There are cases when personal information can easily be stolen by boarding pass. People should treat their boarding pass as they are treating their passport. Hackers can easily scan barcode present on the boarding pass and gain personal information like airline account number, name, email address, bank details. Sometimes, hacker is not successful in logging in, and then they might call and ask for the last known password to re-credential you or, they can change your password.
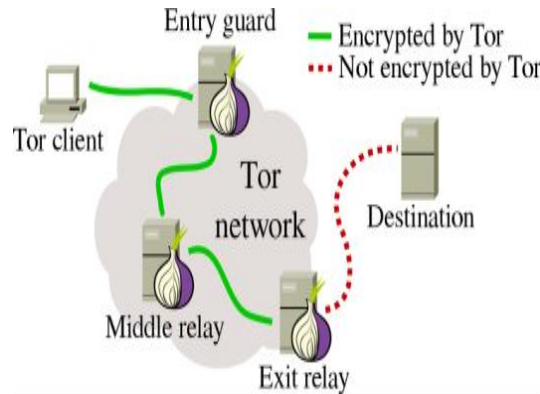
Fig 2: Tor Network [2]

Following are various types of information that can hurt business, if stolen or modified:

- ✓ Payment card information
- ✓ Financial details
- ✓ Medical reports
- ✓ Blueprint: planning data
- ✓ Government secrets: budget, documents etc.
- ✓ Research data: about new drugs, covid-19 data

Payment on the dark web takes place through bitcoins and transaction stored in block chain (public ledger) [3]. This is a platform to exchange information. We can say here, information is wealth. People share/access personal information in return of bitcoins. The wallet (contains user's address) contains an individual's private key, a secret number allows individual to spend bitcoins from the wallet [4].

2. LITERATURE SURVEY

Many researchers identified the nature of services hosted on the dark web. Guitton [5] collected a list of hidden services from which 1,171 hidden services were classified into 23 different categories. These 23 categories were further divided into two broad categories, as ethical and unethical. 45% of content falls into an unethical category of which 18 percent appeared as child pornography. This result was further confirmed by researcher in 2014 using a modeling technique. It was also found that half of the adult content sites offered child pornography. 30 different languages were identified that used in dark web content using a language classifier.

In [6] author collected the onion addresses of 39,824 hidden services and classified them into 18 categories using MALLET and uClassify which claimed that nearly half of the hidden services were selling compromised accounts, counterfeit, and stolen items. Using Langdetect software, they identified 17 different languages, other than English.

Owen and Savage [7] found that most services were running on Apache Web servers. They found that 15% contributed to drugs, 2% related to child abuse whereas 9% related to fraud sites. Intelliagg [8] found the presence of drug trafficking, weapons, forged documents, and credit card dumps, among other services. As compared to Owen and Savage [7], he found one percent of content related to child abuse. In [9] author divided 7,931 hidden services into 26 categories of which eight contained illegal content. They found that tf–idf along with logistic regression, produced the highest accuracy for classifying illegal activities.

3. TOR & DARK WEB

Tor via volunteer server networks route the Internet traffic over the world to avoid identity. The onion technique allows anonymous communications through a network of computers. Messages are sent encrypted then they are

sent through some nodes of networks known as onion routers. When the message is sent to the onion routers, each onion router deletes the encryption layer in the same way as remove the onion peeling to not discover the routing instructions, so a message is sent to the other router and this process is repeated until it is sent to a specific destination This protects the source, destination and message content as shown in Fig 3 [10,11].
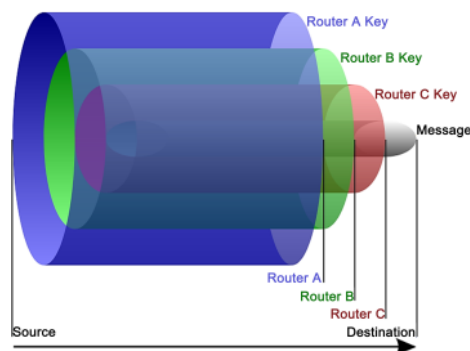
Figure 3: Onion Layers

Dark web is useful in various sectors and activities as discussed below [1,3,4].

- Political activities: Government can access contents blocked in certain part of the world using dark web. Also, govt. established rule for using ToR.

- Whistle Blowing: It keeps democracy in check but can expose govt. methods if not done through official channels.

- Sensitive communication: It may help to protect project from competitors in businesses. Also, to protect children from online abuse activities.

- Solution of leaked information: Individuals can share documents e.g. journalists to communicate securely with informer.

- Military: To study the environment in which it is operating. Also, to study activities present which may give operational risk to troops. It may help in taking down a website or a denial of service attack and inhibit enemy communications. It can be used to plant disinformation about troop movements and targets, for counterintelligence.

- Used for intelligence purpose: DARPA is conducting the Memex(uncover relationship in online data), aims to build a more comprehensive map of Internet content to help human trafficking investigations.

4. CASE STUDY
This section discusses about the misuse of dark web. Technology are designed, discovered for welfare of human beings but some negative elements of society may change the concept about technology by using that in wrong way. Following are some case studies that show how dark web played with the security, privacy, emotions of society.

4.1 Selling of drugs ,2020 [12]
Bengaluru police was forced to investigate and tackle the new challenge. Ten people have been arrested as they purchased drugs (using bitcoins) imported from foreign countries through dark net and sold to students. Narcotics worth Rs 90 Lakh have been seized from the accused by the police. Police also gather information about such persons and conducted raid at 8 places such as Vijayanagar, Mahalakshmipura and many more.

4.2 Financial scam [13]
In Ahemdabad, Harshwardhan Parmar passed out class 12 student, executed scam targeted nearly 40 foreign countries. He got this idea from a Pakistani. He met that person through social media platform, whom introduced him to dark web and then he conducted financial scam. Parmar used to steal bank card details of people from different countries (such as Australia, UK, Japan etc.). Bank account holders do not receive any OTP (one-time password) for transaction. He was paid between Rs. 700 to Rs 7500 depending on the amount in bank holder account. He used that money to buy premium goods, to throw parties for around 500 people, to buy luxury phones, buy gold coins until he emptied the account. Later, he sold it to shop keepers for cash. Police nabbed him when he ordered 30 refrigerators to a spot near his house.

4.3 Human Trafficking, 2016 [14]

Benjamin Faulkner, a Canadian, was the owner of a dark net website (of child personal photos) which ran for six months. Website showcased 100 producers who brutalized children and shot videos. US department of homeland security arrested Benjamin and his associate in Virginia in October 2016. Faulkner was carrying 47,000 images and 2,900 videos on his electronic device at the time of arrest.

The Federal Bureau of Investigation (FBI) took in control the Freedom Hosting (website of dark web) in 2013. He infected the website with a malware designed to identify visitors and identified suspects and their location using anonymous services. The total number of directories' requests that come from users divide by ten and it is found the number of users. The directories disassemble IP addresses according to country codes from where comes the access to them and are reported in aggregate form.
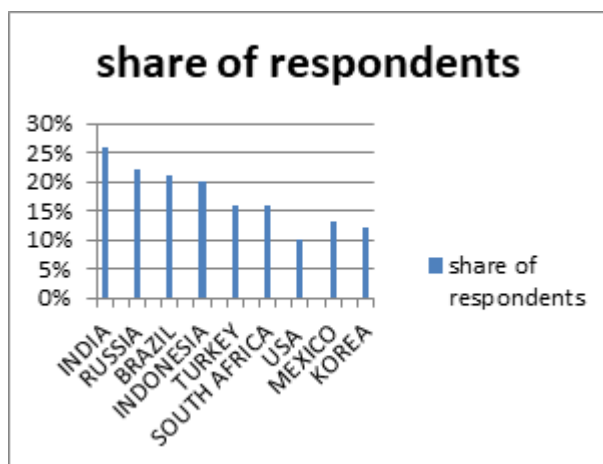
Figure 4: Internet Users who used Tor as of February 2019.

4.4 Child abuse , 2020

According to section 377 of IPC along with the provisions of POSCO Act and IT act , Ram Bhuvan , 50 year old Uttar Pradesh irrigation department junior engineer arrested on 16 November 2020 and his wife was taken into custody on 28 december 2020. He was accused for using dark web to sell sexual abuse material of around 50 children (in the age group 4-16 yrs)and making money from it. The agency team has identified around 35 victims and is in the process of identifying others.

According to CBI, accused used electronic items and gadgets to lure children. The scrutiny of the emails of the accused had revealed that he was in constant touch with several individuals (both Indian and foreign nationals) for the purpose of sharing child sexual abuse material. He said the accused had allegedly created and shared huge quantity of child sexual abusive material, over the years, through the internet using various social media platforms and websites over the darknet etc.

5.   DISCUSSION ON THE USAGE OF DARK WEB

The big question now arises should we use it?

As per a survey, Fig 4 shows number of users of dark web across the different countries.

Dark web has both pros and cons, if we have to sum up the benefits of dark web and subtract the cons of it from the total, would we have a positive or a negative utility?

According to utilitarian approach [15], only happiness has intrinsic value, this approach assesses an action in terms of its outcomes. There are many advantages of using dark web as there are many people using it with innocent intentions, it is a platform of free speech (most of the websites on surface web restrict speech to the point) also the utility of political activists create a massive counterweight to the harms discussed above. law enforcement personnel improve their methods to track dark web criminals and people who have created a tremendous damage to society will diminish further. Hence , this scale is in the favor of allowing unfettered access to those who desire it.

According to libertarian approach [16], human freedom is the most important value for society . And they prefer a govt that has minimal role in society or we can say that they're not in favor of paternalism then dark web may not seem like nefarious place. Imposing restrictions on dark web would not stand up to this scrutiny .

According to kantian approach [17], free means to act autonomously (self governing body) Also, Act only in accordance with that maxim through which you can at the same time will that it become a universal law. when we take an action, one way to determine whether or not it was moral or immoral is to ask ourselves whether or not we think everyone should act likewise. Kant was not in favor of restricting access to dark web. Should ask ourselves what maxim we are purporting when we claim that the government should create policy that restricts access to the dark web. One answer would be that the government should create policy to protect its citizens against anything that it deems to be unsafe. This is, at its core, paternalistic. However, Kant rejects the notion that the state should act paternalistically at all.

A user has to be careful when working in deep web, one should not enter personal information on public computers. User should keep passwords safe and change them often. One should never email bank account details, credit card number etc. And user should have browsing devices compatible with firewall protection.

CONCLUSION

This paper gives an insight into the dark web. There are both pros and cons of dark web. One can use it for benefit with presence of mind. On the other hand, one should be careful and informative about the websites they are using to avoid any kind of problems. On one side, dark web offers anonymity, enormous knowledge gain and a platform where one can do anything. On other hand due to its usage, hacking is growing vastly, users are gaining knowledge about illegal activities and there is also increase in piracy. It can be concluded that there should be restrictions imposed by govt. in usage of dark web but on other hand users also must be attentive and vigilant while diving into it.

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A STUDY ON VIRTUAL MANAGEMENT: IT'S IMPACT ON EMPLOYEE SATISFACTION DURING COVID-19

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ABSTRACT

The present study examines about the Virtual Management and its impact on Employee satisfaction during Covid – 19. The objectives of the included: To analyse the employee satisfaction through virtual communication and also to determine the extent of virtual collaboration affecting employee satisfaction. To analyse the employees satisfaction working as virtual teams during Covid-19. The area of the study was PRODEVBASE Technologies PVT LTD. The sampling technique used in the study is simple random sampling method. The data sources were both primary and secondary data. The data were collected with the help of questionnaire method. The statistical tools used for analysing the data was percentage analysis method, simple regression analysis and ANOVA (analysis of variance) at 5% level of significance. The purpose of the study is to determine whether the virtual communication, virtual collaboration, virtual teams has significant relationship with the employee satisfaction or not.

Keywords: Virtual Management, Virtual Communication, Virtual Collaboration, Virtual Teams, Employee satisfaction.

INTRODUCTION:

Virtual management refers to managing the people virtually by using the technology. Virtual Management suggests that maintaining adjacent operating relationships with colleagues in several locations, while not the necessity for as several conferences as frequently required. Virtual Management could be a high risk strategy unless company's area unit committed, and needs investment in technology yet as in team coaching.

Virtual Management is that the coordination of teams of distributed people operating along to attain a typical goal and solve a shared downside through the employment of computer- related communication technologies, connecting them across time, space, and societal barriers.

The sudden outbreak of the pandemic has led the business operations to face challenges around the world. To overcome those challenges human resources managers have modified the business working patterns and have embraced remote work culture for operating business effectively. Technology usage has increased rapidly due to the Covid-19 to manage the virtual teams and to run the business operations smoothly. Remote work is become trend in most of the industries to overcome the pandemic. Working remotely means that a much better work-life balance, and a much better work-life balance keeps staff intended, happy and a lot of targeted.

Coronavirus has influenced working conditions definitely moving work from workplaces to homes for an inconclusive timeframe. For a few, the change from office to work was simple, while for some it has become a thrill ride of feelings, as they shuffle their time among family and work. Not all telecommuters can keep up their efficiency levels at their work-from-office levels. This could be because of an absence of conveniences like quick web associations and fast connections with colleagues or the unavoidable interruptions at home.

A few businesses are satisfied with the efficiency of their representatives that they are closing workplaces down and diverting to lasting work-from-home plans. Others are despondent and feel that there's a drop in efficiency when representatives are telecommuting.

Different elements add to the drop in employee performance in a far off functioning set-up, stress, and nervousness being at the first spot on the list. Lack of proper communication between colleagues and subordinates, people are worried about their job security and over working time etc. has reduced the productivity of the employees.

To improve the productivity of the remote employees a HR can contribute by maintaining the transparency in the communication, enhancing the employee wellbeing by providing adequate support, helping the employees to maintain work life balance, focusing on the employee engagement and productivity and also by using the technology to bridge communication gap.

CONCEPTUAL FRAMEWORK

INDEPENDENT VARIABLES	DEPENDENT VARIABLE
Virtual communication	Employee satisfaction
Virtual collaboration	Employee satisfaction
Virtual teams	Employee satisfaction

REVIEW OF LITERATURE

Okechukwu, Elizabeth Uzoamaka (2017) carried out a study to know the effect of virtual communication on employee's effectiveness, effect of virtual communication on employee performance. The discoveries of this examination have huge administrative suggestions for e-business firms in Nigeria as far as building a compelling correspondence framework basically, a collateral virtual contact with employees, virtual preparing framework and a viable virtual connection among officers and workers which permits both administration and representatives to be efficient, valuable, trustworthy and advanced. Virtual Communication, cooperation and Training don't just comprise a chance to convey data to build information and mindfulness, yet additionally to change conduct, works with successful accomplishment of hierarchical objective, and improve worker execution.

The research completed that the effective communication, workplace collaboration leads to the performance of the remote employees, good interpersonal communication among employees and top and middle level management of the company as this regulates employee satisfaction, trustworthiness and employee responsibility. This empirical research accomplished the objectives to gain a better opinion about how the performance of the employees are affected by the virtual communication, virtual collaboration and virtual management.

Zareh A.Demirdjian(2018) has showed that the point of this examination was to recognize and assess the benefits and difficulties of virtual work environments in SMEs situated in Lebanon, alongside the administrative and initiative capabilities needed to guarantee productive execution and collaboration in virtual working environments and among virtual groups in SMEs situated in Lebanon. Virtual teams are facing many challenges and conflicts in the form of overworking, communication difficulties, lack of trust. Hence, to overcome these conflicts managers and leaders can focus on breaking down the communication difficulties, handling conflicts, helping employees to manage work life balance, building trust and overcoming the technological complications.

Dileep Srinivasan, Edward Jenks(2012) in their future of work article stated that virtual collaboration in the real sense is about sharing the information and knowledge by providing the right tools which helps the teams to gather to work as soon as possible. Teams need to be provided by right tools to reduce time and space and also to overcome the business competitive problems and to exploit the opportunities before the time. The factors that come in to picture when it comes to virtual collaboration are like where to implement the virtual collaboration, assigning an ambassador to motivate and discuss the success, progress and results with the team members, investment plan in cloud computing, social based collaboration platforms and mobile devices, conducting live discussions, enabling idea sharing, motivating through the usage of gamification, managing cultural change, adapting work policies and procedures.

Veena Shenoy (May 2019) in her study examined the virtual employee experience. She finds out that virtual experience of an virtual employees depends on the set of perceptions they have while they interact with the organization in their virtual work. When the employees are having sound virtual experience they will be more productive, enhanced work interests etc. she explains about the elements of the virtual employee experience like E-leadership, communication, work life balance, rewards and recognition, autonomy, interpersonal relationships, organizational culture, internal policies. It is the major challenge to the organisation as well as to HR practitioners to maintain sound employee experience to increase the productivity of the employees, reducing retention of the employees, enhancing employee engagement.

Swati Kaul Bhat, Neerja Pande, Vandana Ahuja (2017) carried out a study about the virtual team effectiveness. She has stated that there are three factors like trust, knowledge/ information sharing and communication which are responsible for the effectiveness of virtual teams. Virtual teams are consists of characteristics which are like temporary, culturally diverse, geographically dispersed, communicates electronically. The present study focused on the importance of factors that effects the communication, trust, information sharing in the IT industry. The resulting factors of the research- 1[Employees dependency on each other], 2[time management], 3[Concern for Collaboration], 4[Information Penetration], 5[Variety of Information], 6[Reliability on Technology], 7[Tools Used for Communication], 8[Implementation of Results], should be considered to create effective virtual teams.

Tim Holmlund, Oscar Lindqvist (2015) were carried out a study on Virtual team management and Organizational identification. They concluded that in a virtual team the three major/success factors like clear and distinct communication, user friendly technology and user experience of the technology needs the high quality communication tools and knowledge to accomplish the tasks virtually. Other success factors such as face to face meetings and trust are identified. The major issue in the organisational identification is inconsistency between managers and employees because of the cultural differences in the virtual work. They also suggested that a manager should adopt situational leadership in order to manage the teams successfully. A manager should focus on the transparency environment, should define strategies, roles and responsibilities precisely in a team.

Iza Gigauri (2020) carried out a study on the effects of covid 19 on Human Resource Management from the perspective of digitalization and work life balance. Some percentage of remote employees are preferred to work from home but some of them are willing to work from office. In the remote work the job requirements are filled for private space. In this pandemic, HR management is adopting the hybrid model to recruit the remote employees, to redefine the organisational strategies and policies, to transform in to digital offices or work place.

Manoj Bhattarai (2020) carried out a study on working from home and job satisfaction during Pandemic times. The research was done based on the four factors which are physical, financial, psychological and technological. The results indicated that the individuals who work more than normal hours were feeling unhappy or unsatisfied in their job. Employees were also satisfied by reducing their gas expense compared to the virtual meetings pressure on daily or weekly base. He was concluded that employees should be valued more to keep them involved and committed.

Rebecca k. Mansfield (2018) has done her doctoral dissertation on employee job satisfaction and attitude towards virtual workplaces. In her study she was taken independent variable as job satisfaction, dependent variable as attitude towards virtual work place and moderating variables as leader member communication and leadership style. The researcher found that there is positive relationship between the attitude towards virtual work place and job satisfaction. Transformational leadership should be adopted by the leaders to manage the positive relation between job satisfaction and virtual workplace attitude by the employee.

Research gap
A few researchers had examined about the virtual management, virtual collaboration and virtual communication and its impact on employee effectiveness during the normal period. There are no adequate articles related to this topic.

Employee satisfaction factors such as interpersonal relationships, training and development, flexibility, rewards and recognition, motivation, brainstorming sessions has been taken for the research.

OBJECTIVES OF THE STUDY
1. To analyse the effect of virtual communication on employee satisfaction in PRODEVBASE Technologies PVT LTD.
2. To determine the extent of virtual collaboration affecting employee satisfaction in PRODEVBASE Technologies PVT LTD.
3. To analyse the factors contributing to employee satisfaction in virtual teams during Covid 19 in PRODEVBASE Technologies PVT LTD.

HYPOTHESIS
HYPOTHESIS 1

H0: There is no significant impact of virtual management on employee satisfaction in PRODEVBASE Technologies PVT LTD.

H1: There is positive significant impact of virtual management on employee satisfaction in PRODEVBASE Technologies PVT LTD.

HYPOTHESIS 2

H0: There is no significant impact of virtual collaboration factors on employee satisfaction in PRODEVBASE Technologies PVT LTD.

H1: There is significant impact of virtual collaboration factors on employee satisfaction in PRODEVBASE Technologies PVT LTD.

HYPOTHESIS 3

H0: There is no significant impact of virtual teams on employee satisfaction in PRODEVBASE Technologies PVT LTD.

H1: There is significant impact of virtual teams on employee satisfaction in PRODEVBASE Technologies PVT LTD.

RESEARCH METHODOLOGY
RESEARCH DESIGN: The research design is both exploratory and descriptive research.

1. **Sample area**: PRODEVBASE Technologies PVT LTD.

2. **Sample size**: Responses from 100 employees.

3. **Sampling technique**: Simple random sampling technique.

DATA COLLECTION
PRIMARY DATA: The primary data has been collected on the basis of sample survey with the help of questionnaire and created Google form which has been send to the employees for responses.

SECONDARY DATA: The secondary data has been collected from the articles, reports, books, journals etc. which has been collected from websites like research gate, Mckinsey.com etc.

PERIOD OF THE STUDY: 45 days

STATISTICAL TOOLS:
1) Percentage analysis.

2) Simple linear regression and ANOVA (one way)- Analysis of Variance.

PROPOSED MODEL
In my project work totally I have four constructs. In each and every construct I have consider maximum 5 items. In my analysis, in level 1 I am measuring the 5 items of virtual communication impact on employee satisfaction. In level 2 I am measuring the 5 items of virtual collaboration impact on employee satisfaction. In level 3 I am measuring the 4 items of virtual teams' impact on employee satisfaction.
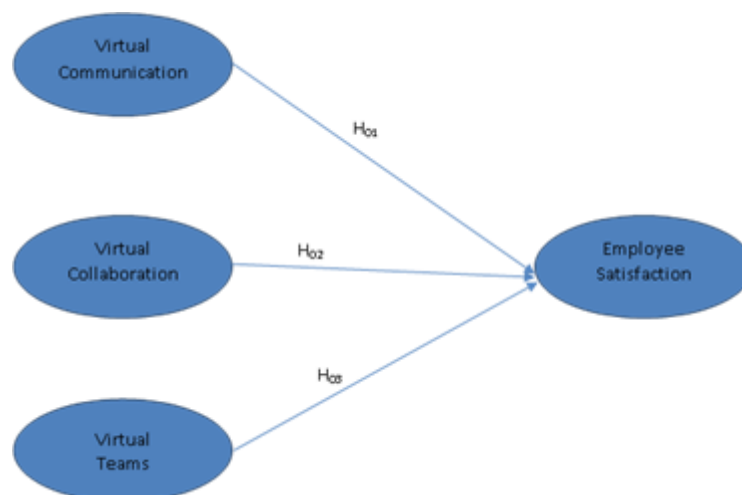
HYPOTHESIS TESTING 1
H0: There is no significant impact of virtual management on employee satisfaction in PRODEVBASE Technologies PVT LTD.

H1: There is positive significant impact of virtual management on employee satisfaction in PRODEVBASE Technologies PVT LTD.

Table 2.1a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.292[a]	.085	.036	4.11381

Table 2.2b: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	147.954	5	29.591	1.749	.131[b]
	Residual	1590.806	94	16.923		
	Total	1738.760	99			

Table 2.1c: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.521	1.789		6.440	.000
	I think that web conferencing is the most prominent communication in your company?	-.126	.289	-.044	-.434	.665
	Does the virtual communication is effective?	3.350	2.398	.414	1.397	.166
	Are your work objectives clear each day/each week?	1.211	.761	.161	1.592	.115
	Do you complete your each day's important tasks during normal working hours?	-.966	1.521	-.187	-.636	.527
	Does your team leaders are friendly and approachable when you need them?	-.408	.582	-.073	-.701	.485

INTERPRETATION:

The table 2.1b shows the analysis of variance (ANOVA). The independent variable is virtual communication and the dependent variable is employee satisfaction. The analysis of variance shows whether the null hypothesis is statistically significant or not. From the above table we can observe that the P value is greater than the 0.05 significance level (.131>0.05). This shows that the null hypothesis is failed to reject. Thus we conclude that there is no significant impact of virtual communication on employee satisfaction in PRODEVBASE TECHNOLOGIES PVT LTD.

HYPOTHESIS TESTING 2

H0: There is no significant impact of virtual collaboration factors on employee satisfaction in PRODEVBASE Technologies PVT LTD.

Table 2.2a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.279[a]	.078	.029	4.13065

Table 2.2b: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	134.907	5	26.981	1.581	.173[b]
	Residual	1603.853	94	17.062		
	Total	1738.760	99			

Table 2.2c: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.393	2.268		7.668	.000

	I think that quick decision making and problem solving motivates you to collaborate with others?	-.032	.463	-.008	-.068	.946
	Do you have regular check-ins with teammates and direct reports?	-1.553	.578	-.277	-2.687	.009
	Does the leader host virtual meetings for brainstorming?	.059	.410	.015	.144	.886
	Does the virtual ice breakers are injected in virtual meetings?	.397	.580	.070	.683	.496
	Did ASANA project management tool is effective?	.012	.427	.003	.027	.979

INTERPREATION:

The table 2.2b shows the analysis of variance (ANOVA). The independent variable is virtual collaboration and the dependent variable is employee satisfaction. The analysis of variance shows whether the null hypothesis is statistically significant or not. From the above table we can observe that the P value is greater than the 0.05 significance level (.173>0.05). This shows that the null hypothesis is failed to reject. Thus we conclude that there is no significant impact of virtual collaboration on employee satisfaction in PRODEVBASE TECHNOLOGIES PVT LTD.

HYPOTHESIS TESTING 3

H0: There is no significant impact of virtual teams on employee satisfaction in PRODEVBASE Technologies PVT LTD.

H1: There is significant impact of virtual teams on employee satisfaction in PRODEVBASE Technologies PVT LTD.

Table 2.3a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.168[a]	.028	-.013	4.21736

Table 2.3c: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.078	4	12.270	.690	.601[b]
	Residual	1689.682	95	17.786		
	Total	1738.760	99			

Table 2.3c: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	16.686	2.186		7.632	.000
	Does the team coordination and team control is effective through virtual mode?	-1.215	.912	-.150	-1.332	.186
	I think job promotions, hikes, bonuses are the recognition and rewards by the employer virtually during pandemic?	-.055	.901	-.007	-.061	.951
	Do you feel supported and trusted by your team leaders?	.780	.813	.107	.960	.340
	Did the knowledge sharing among the teammates and team leaders is effective?	-.298	.400	-.075	-.745	.458

INTERPRETATION:

The table 2.2b shows the analysis of variance (ANOVA). The independent variable is virtual teams and the dependent variable is employee satisfaction. The analysis of variance shows whether the null hypothesis is statistically significant or not. From the above table we can observe that the P value is greater than the 0.05 significance level (.601>0.05). This shows that the null hypothesis is failed to reject. Thus we conclude that there is no significant impact of virtual teams on employee satisfaction in PRODEVBASE TECHNOLOGIES PVT LTD.

FINDINGS:

The result based on the descriptive statistics shows the following:

i. Virtual communication has no significant impact on employee satisfaction in PRODEVBASE TECHNOLOGIES PVT LTD.(r = 0.292, F= 10749, P= 0.131>0.05).

ii. Virtual collaboration has no significant impact on employee satisfaction in PRODEVBASE TECHNOLOGIES PVT LTD. (r= 0.279, F= 1.581, P= 0.173>0.05).

iii. Virtual teams has no significant impact on employee satisfaction in PRODEVBASE TECHNOLOGIES PVT LTD. (r= 0.168, F= 0.690, P= 0.601>0.05).

CONCLUSION:

The study concludes that virtual communication, virtual collaboration, virtual teams has no significant impact on employee satisfaction. Virtual management become customary during this pandemic in majority of the companies. The virtual workspace culture should be framed in such a way that it also should change the behaviour of the employees to be engaged, satisfied, effective and productive. Thus the findings of the study in PRODEVBASE TECHNOLOGIES PVT LTD concluded that through the virtual management, the employees are not satisfied during Covid 19. The company should develop a proper virtual framework with the strategies that should align with the employees and organisation goals and objectives.

LIMITATIONS OF THE STUDY:

▪ One of the important limitation is time period, in this pandemic it is complex to convince the respondents to answer the questionnaire.

▪ The data was collected through questionnaire. The response from the respondents may not be accurate.

▪ Limited access to information.

▪ Lack of previous research studies on the topic.

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ROLE OF SCHOOL MANAGEMENT COMMITTEE TO ENSURING THE QUALITY EDUCATION

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ABSTRACT

Community participation is a concept that enables the community to play a collaborative role in school functioning, management and developing quality school education. The Right of Children to Free and Compulsory Education Act, 2009 has enactment the constitutional role of school management committee to formulate and implement school development plan, monitoring the functioning and financial aspects of school activities, for ensure the quality of school education. Present paper discusses a strong role of SMC to development the concepts and activities of Buniyadi Shiksha, Mega Parents Teacher Meeting (PTM), Entrepreneurship Mindset Curriculum (EMC) and inclusive education towards educational quality in government schools of Directorate of Education.

Keywords: Community Participation, Right to Education, School Management Committee, Quality Education

INTRODUCTION

Policy makers, teachers, and other stakeholders involved in education are looking for ways to utilize the resources efficiently and effectively to identify and solve educational problems and so that all children access quality school education. The role of the community is that of a guide in the formulation, design and implementation of the program strategy in any area. Their efforts have contributed to realizing the significance and benefits of community participation in education, and community participation as one of the strategies to improve educational access and quality. The role of the local community also becomes necessary because being local, the understanding of the condition of the people here is better than that of other people. Similarly, the role of community has been considered important for the development and quality of education, because education is not only related to schools, but also this process is related to family and society. (Uemura 1999)

Strong and sustained community participation in the management of schools can not only enhance transparency and accountability in the education system but also promote a sense of ownership, agency and responsibility for positive change. Active involvement of communities have improved school functioning significantly (Govinda & Diwan 2003). Community participation in school functioning not only helps in the management of facilities but also paves the way for improvement in educational quality. It has been present in the Indian education system since ancient times and since independence to the present time, various commissions, committees and documents have accepted the importance of community participation in the context of developing quality education of the school. The Kothari Commission has Recognizing the importance of community participation in school education, also mentioned in its report i.e. Education and National Development (1964-66) that education is a subject of national importance, and every parent is connect to education, therefore education and community should be connected with each other, By connecting in touch, each other can be developed.(GoI 1964-66)

The National Policy on Education,1986 recommended the establishment of an appropriate institutional framework at the district and sub-district levels, such as, District Board of Education and Village Education Committees (VEC) for greater involvement of local community members in the management of elementary education (NPE 1986). Furthermore the 73rd and 74th Constitutional Amendments have entrusted roles and responsibilities to the Panchayati Raj bodies in management and control of elementary education at local level (IGNOU 2017). State/UT Governments may adopt innovative formats, such as school complex, rationalization of schools, without in any way reducing accessibility, for effective school governance, resource sharing, and community building. School complexes could also share counselors, trained social workers, technical and maintenance staff, etc. to further support teachers and help create an effective learning environment. In collaboration with parents and other key local stakeholders, teachers will also be more involved in the governance of schools/school complexes, including as members of the School Management Committees/School Complex Management Committees. (GoI, NEP 2020) Linking schools to their community increases number of socio-cultural resources that support education of all children. Involvement of SMC in the school supports achievement of all children.(NCERT, 2020)

School management Committee is one of the revolutionary change happening at present, enacted by the Right of Children to Free and Compulsory Education Act, 2009, to ensure the implementation of quality-education in the school. Enabling learning through participation in the life of a community and the nation at large is crucial

to the success of schooling. The failure to 17provide this will result in the failure of the system, and hence needs to be treated as the utmost priority (NCF 2005). RTE Act, 2009, Article 21(1) has made provision for the constitution of a SMC consisting of elected representatives of the parents or guardians and teachers of the children admitted in government schools. The following provisions were made for the constitute of the committee:

- At least three-fourths of the members of the committee shall be parents or guardians;

- Proportionate representation will be given to the parents or guardians of children belonging to disadvantaged groups and weaker sections in the committee;

- Fifty percent of the members of the committee shall be women.

COMPOSITION OF SMC, DIRECTORATE OF EDUCATION DELHI
Following the provisions regarding constitution of SMC by RTE, Directorate of Education, Delhi issued a circular regarding constitution of School Management Committee for smooth functioning in government schools through this circular, the post-details of all the 16 members of the committee have been mentioned as follows (DoE 2013).

S. N.	Actual Designation	Position in SMC	No.of Members
1	Principal/HoS	Member/President	01
2	Parents/Guardians of the Children (Vice-President shall be from amongst the parent members)	Member	12
3	Teacher of the School	Member/Convener	01
4	Elected Representative of the Local Authority	Member	01
5	Social Worker in Educational Field	Member	01

As per Section 21(2) of the Right to Education Act 2009, the SMC shall perform the following functions:

- Monitor the functioning of the school;

- To prepare and recommend school development plans;

- To monitor the utilization of the grants received from appropriate Government or local authority or any other source;

- And to perform such other functions as may be prescribed.

ENHANCEMENT OF POWERS OF SMC AS PER DIRECTORATE OF EDUCATION RTE BRANCH
According to the DoE, circular (2016) regarding enhancement powers of School Management Committee are as follows.

- The SMC shall be empowered to take any decision for the overall development of the school and the welfare of the students and teachers, and shall be empowered to get these decisions implemented.

- There shall be two meetings in a month. Meetings will be held on the first and third Saturday of the month. The SMC may change meeting days as per their convenience.

- Any member can ask for any records related to the school by requesting in writing. The HOS must acknowledge the receipt of request on a duplicate copy and return the acknowledgement to the SMC member. It is the duty of the HOS to make the records available within 3 days.

- During the monthly SMC meetings, all records, as decided by the SMC, related to the school have to be presented to the SMC. This includes (but is not limited to) financial records, bills, attendance register of teachers and students, etc.

- The report of all expenses made since the last SMC meeting have to be presented in the SMC meeting. In an SMC meeting, when bills or expenses on school building and maintenance are presented, the members of the SMC are authorized to physically examine the repair, maintenance or asset that has been purchased.

- SMC has the power to identify the children requiring special training and remedial education by means of organizing diagnostic learning level assessments on periodic basis.

- SMC bas the power to organize special training and remedial education program in school premises to support academically deficient students.

- SMC has the power to collaborate on pro-bono by means of an MOU with any NGO from amongst the government empanel led NGOs for meeting any of its deficiencies in academics, sports, music, or in any other field. This would require a resolution passed by the SMC with a minimum of half of the total strength of the Committee.

- A Student Suggestion Box must be put up in a prominent place in the school, which must be opened in the presence of SMC members.

- A Parents Suggestion and Complaints Box must be put up in a prominent place in the school, which must be opened in presence of SMC members.

OBJECTIVES

- To study the role of school management committee to ensuring the quality school education educational system.

- To study the role of school management committee to development and implementation of academic activities of DoE School. .

METHODOLOGY

- To know the role of school management committee to ensuring the quality school education educational system, mixed research method was used in the present paper. Following research tools were used for the develop understanding on the role of SMCs in context Inclusive education in schools.

- **Interview** with 10 HoS/President of SMCs

- **Questionnaire** for 50 Members of SMCs

SAMPLE

10 Government schools were selected under the systematic random sampling process.

CONCLUSION
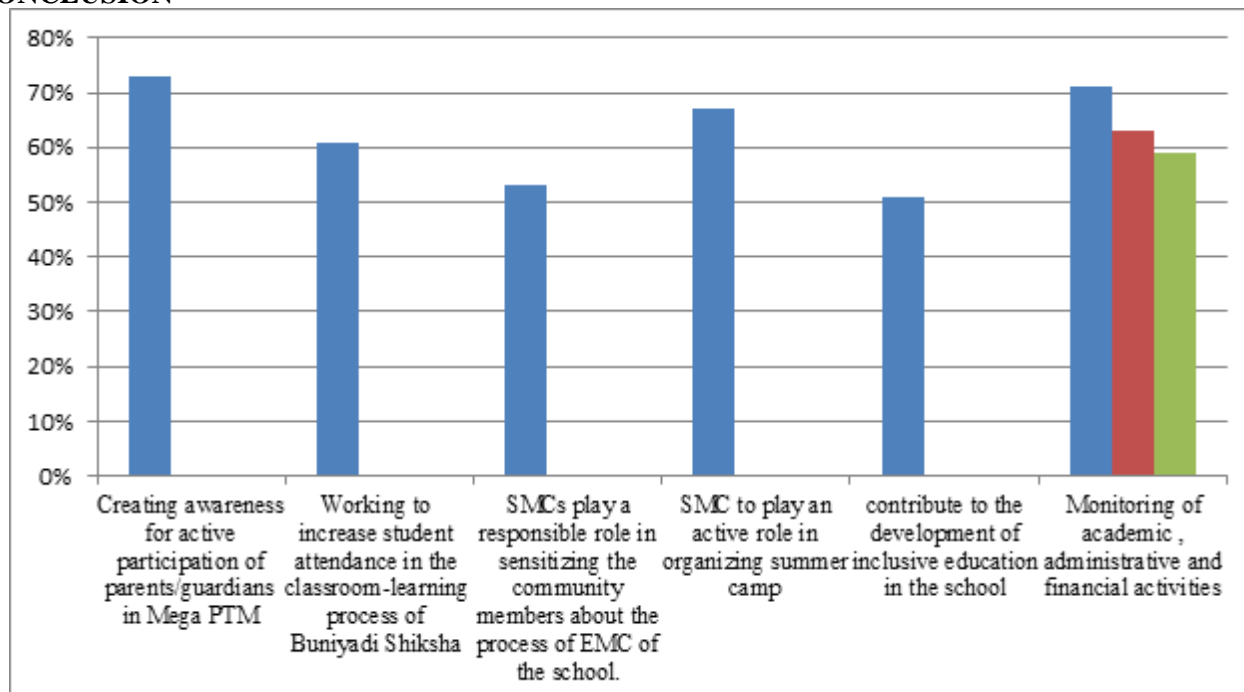
(Table: Role of school management committee to ensure quality Education)

The above data shows 73% responses including President of SMCs agreed that SMC Creating awareness for active participation of parents/guardians in **Mega PTM**. SMC is playing dialogical role between the school and the community for making active participation of parents in Mega PTMs organized in Government Schools of DoE. 61% responses show that SMC is Working to increase student attendance in the classroom-learning process of ***Buniyadi Shiksha.*** A Circular was issued by DoE regarding planning/implementation of classes of Mission Buniyaad, Following the directions of this circular, the SMC in its meeting main focused on the aspects

of *Mission Buniyaad* (DOE 2018). 53% responses show that SMCs play a responsible role in sensitizing the community members about the process of **EMC** of the school. The members of the SMC establish contacts with people related to various businesses located in the community. The members of the SMCs play a responsible role in sensitizing the community members about the process of EMC of the school 67% responses show that SMC played an active role in organizing **summer camp.** More than 45,000 students enthusiastically participated in the first summer camp organized in DOE government schools. The members of the SMC have played a very active role in organizing summer camps to persuading parents to send their children to school even during summer vacations (Sisodiya 2019). 51 % responses show that SMC contribute to the development of inclusive education in the school. SMC members identify CWSN children around the school and play an active role in getting them enrolment/admitted to the school. Need based recommendations are made in the meetings of the SMC for procuring TLM and equipments related to CWSN. The above data show that SMC actively monitoring of academic, administrative and financial perspectives/activities of the school. SMC participates in recommending the implementation of supporting aspects of inclusive education in the school development plan. Based on the interaction with President and members of committee, SMC is actively participate and monitor the school activities. HoS agreed that SMC plays vital role for developing quality education in school.

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ENERGY EFFICIENT MODULE TO LOCATE A MOVING OBJECT: A COMPARATIVE STUDY

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ABSTRACT

As we all know, much work is being done in the time of technology. New records are being set up everywhere, whether in the health sector, defense sector, education sector, space factor, or industry sector [25]; there is much work everywhere. Similarly, to increase development in every industry more thoroughly, we started working in wireless technology systems and streamlined this work. To work in this manner, we did a thorough study of all the jobs done in the past. In this paper, we mentioned the work done in the past and showed the work done by us comparatively. I worked on energy conservation because, In today's time, the most critical task is to conserve maximum energy. LEACH [4-23] (Low Energy Adaptive Cluster hierarchy) is the essential work done in this direction, which is a serial the available methods of energy conserved. My job to detect any moving objects, and he would have him save the chapter of power while preserving the information collected by it a detailed description.

Keywords: *WSN, object Tracking, LEACH, Localization*

1. INTRODUCTION

In this chapter, we will high light every main point used to conserve energy as much as possible. Our work mainly based on wireless sensor networks [2], so before I explain the main job done, I need to tell you about the wireless sensor network. In short, it is called WSN. WSN is the adjustment of many small sensors which we call sensor nodes [17]. The Sensor is an electronic device that mainly consists of transmitter-receiver and storage elements [30]. This device is very light-weight. If we talk about the central component of the Sensor, it has four main points.

- sensing unit

- power unit

- communication unit

- processing unit

As you can see in Figure 1,

The Sensor is responsible to find any object which is moving in wireless sensor network.

The WSN is a cluster [19] of many small sensor nodes that have used to detect changes in the environment, or any network, the primary source of energy in this network is the inter-interest battery of each sensor node. There is energy given to every primary node in a certain amount, so I should use it very carefully. To make WSN, We deploy a lot of small and tiny nodes so that we can easily find out about all the activities there in those networks. From this network, we can get the temperature, humidity [51], speed of air, the intensity of sound, the amount of pollution.

A lot of information in todays modern's era, the discovery, and the use of electronic devices such as sensors, is significant. If we talk about the changes happening in the country by accepting the information and monitoring the data, then speak in technical terms Programmed non-electrical signal has converted into electrical signals [49].
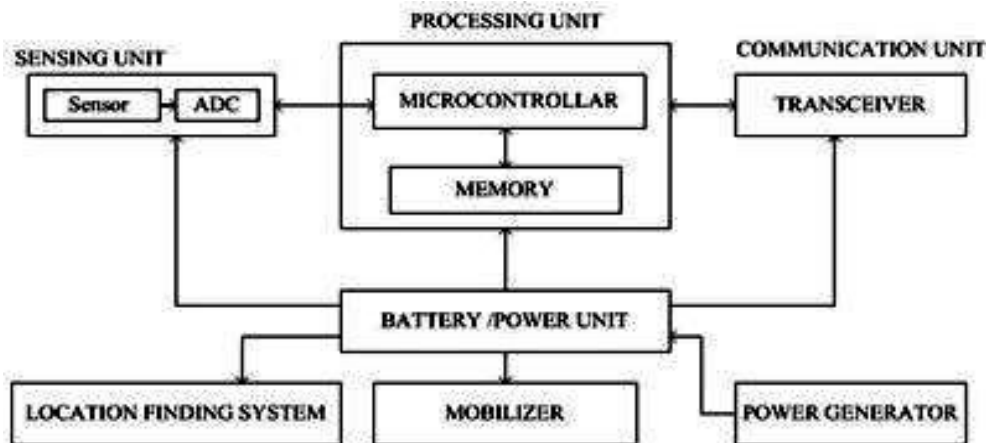
Figure 1: Architecture of Sensor node

2. PROPOSED WORK

In this chapter, we will collect the complete knowledge of the object that comes in the field of WSN; that is, we will explore that object. What technology has been used to find it? In this work, I also discuss as much study as possible about all the subject areas. The purpose of the work is only as much as the energy was being spent in locating that object. Could the rescue come from applying in this area, which is the most critical task was Leach is only by so it sort of clusters of nodes called benchmark, for the valuation of sensor networks [50]. As shown in the figure, we have prepared many sensor nodes as individual savings. Each group has many nodes, and out of all those nodes, we have made a critical node which is called a cluster head [20]. Whose task is to collect information from all the Sensor node present in the group and provide it to the base station, thus to understand this case we have taken the help of in picture three. in which We have taken about hundreds nodes, and we have deployed [2-28] it in an area as far as the extension of nodes in a specific range is called sensor field [1]. Whatever information has taken from the cluster head node it sends to, the bus station also called Sink node [46]. It has known that the main point of this whole work is to find out the status of his object, which route he travels from one place to another [35].
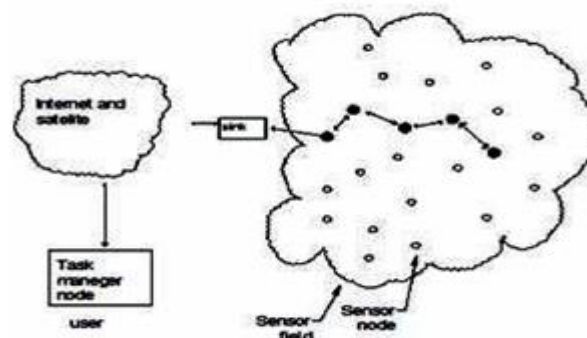
Figure 2: Report of Data transfer

2.1 The types of energy-saving are as follows.

1. To find this, we used DPR. DPR is an algorithm that guesses about a path and accordingly predetermines information about that path [13]. If our target chooses that path, then there should be no energy loss in our sensor node to track that object.

2. we have divided the sensor nodes in three-part

a. Active mode: In the active mode, we have nodes that have a sufficient amount of energy and are very close to the object [5-45]. The information stored by these nodes translates to the cluster head (CH), and cluster nodes transmit it to the sink node (BS). Thus there is no value for storing unnecessary information in the cluster head as well to save energy.

b. Sleep mode: In the Sleep mode, we have placed the sensor nodes which are away from the object. Still, in this also we have adjusted them in such a way that all the nodes which are in sleep mode will be converted to active mode as soon as the object comes to them, and All the nodes that were in Active mode, would themselves go into sleep mode [45].

c. Dead Nodes: In this mode, we have kept all the nodes whose energy has been exhausted or very low. Now, these nodes will not be able to give any information about the object in the network, so all the nodes provided by The selection of data are done by the cluster head itself, explained in detail by the Energy Management System (EMS) [19].

To find the object's exact location, we have studied many algorithms, such as quadrilateral algorithms, hexagonal algorithms, and Trilateration algorithms [7]. We have used the Trilateration algorithm in our research. In this algorithm, we have considered the intersection point of the Three Spheres. The Intersection point of three spheres has known as the exact location of the object. So that in this way, unnecessary energy might be save.

2.2   Modernize energy saving scheme
Under this scheme, we have tried our best to explain the work we have done in this paper through Pseudo code, and at the end of the result, we have shown our work comparatively in two steps. We have shown the work in the first phase. We have saved the energy that has spent in selecting the cluster head [35], and in the second phase, we have saved the save energy that goes on locating the object Have tried. First, we initialized all the nodes with fixed energy [21], then we built a WSN by extending those sensor nodes in a specific range and applying a minimum distance algorithm from three nodes on it by locating the moving object and then after that The lowest distance out of the three nodes was selected, after selecting, the received signal strength [18] of that node was measured by which it was known. Those nodes could exchange information or not. Then we applied the DPR and placed a condition to calculate the location. If the approximate nodes which are less than or equal to the area of the moving object then become a cluster head (CH) [46], otherwise, we have to apply the Trilateration algorithm again to locate the object.

2.3   Localization and Object Tracking Hurdles
Various hurdles can hit the object tracking feature in wireless sensor networks:

1. Lumps in WSNs are likely to crashes due to battery fatigue, environmental hazards, hardware Device omissions, outside aggression, active queue [5] consequently offered object tracking rules should cope with these hurdles.

2. Object desiring and recreation: prophecy errors, obstacles, abrupt variations in object trajectory [52] and speed problem loss of to object, hearty tracking algorithms should have recommended decreasing the possibility of juggling objects. Furthermore, improving devices have measured in case the object was lost.

3. Coverage and connectivity: Coverage and connectivity are complementary to each other. Through these two, an object can detect. Wireless technology also has low power and low radio-frequency (RF) sensors that cost very little. Such sensors are called micro sensors in wsn [2].

4. Data collection: It is the most challenging task is the collection mechanism [26] aims to eliminate data redundancy. Importance on power dissipation. Sensor nodes are willingly put in low-power rest mode as much as feasible, to reduce average power dissipation. So, the data collection should accomplish accurately, with minimum data latency while preserving energy.

5. Localization and Object Tracking Difficulties can influence the object-tracking feature in wireless sensor networks:

i.   Node breakdown: nodes in WSNs are likely to break down due to battery depletion, environmental disasters, appliance failures, and externalities attacks [6].

ii. Object missing and restoration: prophecy errors, hindrances, path diversity, and speed variation, Hale tracking algorithms should intend to diminish the probability of avoiding objects [9-16].

iii. Surrounding objects: which node has more close to the object the gives accurate information about the object's position [38-26]

iv. Data collection: Data collection is significant for any system [5]. In this whole process, the data sent by the sensor node goes to the group, and the cluster head sends it to the base station. The same data goes to the cluster head, which is new for us and has not repeated. It occurs [15].

2.4 WSN link establishment
The essential task in any network is storing the data from that network and transporting that information to the destination without causing any damage, so it is imperative to have a link establish for a sound communication

system. With the help of this Figure, we have very by securely collecting information through cluster head (CH) [19]; it has transported to the destination i.e., base station (BS).
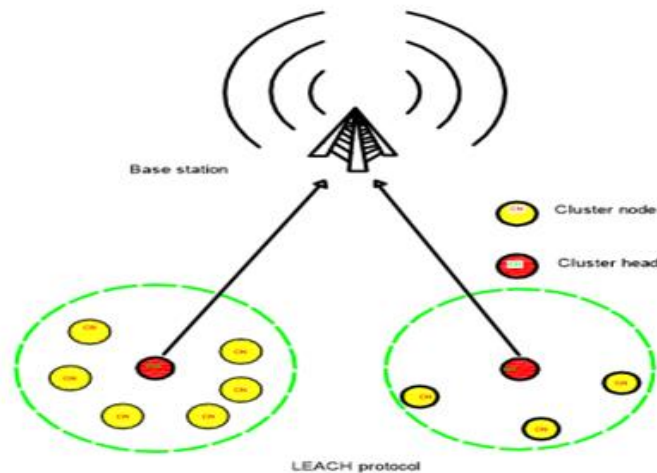
Figure 3: Link Establishment of wsn

2.5 WSN utilization and their specifications

Healthcare

WSN adopted in healthcare schemes has obtained notable recognition from the analysis society, and the analogous utilization has viewed and also secures routing for disaster [8]. We recognize two kinds of healthcare-oriented systems, i.e., alive rank monitoring and remote healthcare surveillance. In status monitoring utilization, victims wear sensors that control their alive parameters to distinguish dangers and support the caregiver to re-spend completely. Applications include mass-casualty, Crash monitoring [3], alive sign monitoring in clinics, and next fall or epilepsy seizing apprehension.

Environment and agriculture

WSNs are mainly well suited to farming and open space monitoring utilizations since lined deployment would be costly and unproductive. A variety of applications have occurred in exactness farming, animal monitoring, and environmental monitoring. In exactness farming, sensor lumps have spread everywhere in a field to observe appropriate parameters, such as climatic temperature, soil precipitation, moments of sunbeams, and the moisture of the scales, forming an arrangement provision system. Different purpose of exactness farming is stock (water, fertilizer, pesticides) optimization [36], frost security, and disease evolution prophecy and real-time [29]. Most important application of wsn is IoT [14].

3. RELATED WORK

In this paper, all the work that has been done on this subject so far has shown in order. We recognized four universal sensor activation plans for quarry path that could use to implement another energy-quality trade-off: straightforward activation, irregular activation, particular activation with foresight and duty-cycled activation [25]. As we know that to locate a moving object is a great task for the researcher. If object moving very fast then localize them is very difficult for us because at that missing rate is very high and prediction is not suitable at that circumstances [6]. In this article discuss a dynamic distributed algorithm for fast-moving object in WSN. In this paper we take a reference of dynamic distributed algorithm [36] for tracking object if they are moving very fast. In regular tracking, the first step is to predefined threshold level of energy for all sensor nodes that help to preserve energy of nodes and secure our data. After localize the objects, its location has calculated by using many techniques such as Trilateration [7], Triangulation [41], and Voronoi cells [21]. In this article, we describe the Voronoi Diagram [21], which is help to optimize preventive coverage and energy-efficient clustering algorithm. The full benefit of the Voronoi-diagram is the boundary to detectability. Two challenging concerns arise in originating WSN-based tracking systems with considerations to conventional tracking systems, e.g., AWACS systems—the first issue of how we capture the target which deployed by the sensor nods. The second one is how to communicate with sources that have limited resources isf WSNs, such as energy, bandwidth, etc. The nature of the first issue is that a moving object may not reside in the ceiling of one sensor all the time means the collaboration of WSN nodes outwardly, an individual sensor cannot capture the moving target always so lose the target through tracking. Furthermore, noise may also cause a crash in sensor activation and commence to target loss in tracking. The second issue is due to the supply restriction of WSNs on

energy at every node and reduced transmission bandwidth among nodes [19]. Our aim to track a movable object with minimum time means delay should be minimum. The guidelines of WSN should provide the distribution between tracking accuracy and required resources. The decentralized calculation can bypass multi-hop relays and diminish transmission load at the cost of local numbers and is scalable for massive scale WSNs. The tracking efficiency has shown to the assortment of transmitting nodes. Therefore the reporting of WSN nodes is programmed in our PIBS [36]. The problem analyzed in this paper is precisely associated with the query of state estimation with sensor selection. In this article, we provide some modifications to locate an object in wsn. Its major works to control the mobile node's movement to detect the target in the shortest possible time. Commonly it has assumed the actual location of the object is the same as the predefined location using a prediction algorithm, and this object location transmits cluster head to the base station in the shortest time. A consecutive data gathering system is not becoming for realizing the target chasing applications because continuously transmit of object location is diminish its energy. Hence, the target tracking duty requires data gathering methods to secure that the number of transferred data is as minimum as possible. This article introduces a static cluster algorithm in which only active sensor node is involved to track the moving object, and other nodes are in sleep mode [45]. Our intended algorithm has based on a static clustering design where the sensor nodes that can act as CHs through the tracking process are pre-define in the network. These nodes have initialized with monitoring to the situation while holding others in a sleep state to preserve system energy. It is mentioning that the network is heterogeneous, which means the pre-define CHs have allocated more energy than the other nodes to enhance the tracking fulfillment and network lifetime [34].

2.4 Summary of Object Tracking Strategies in WSN

4. RESULT

In today's time, a lot of research is being done in every field; whether it is the health technology, industry, or the field of education, in this paper, we have worked in the technical field and energy in doing that work. Emphasis has been placed on saving in this research. We have built a wireless sensor network that has made by deploying a group of small sensor nodes in the A region. The task of saving the energy it takes to locate a moving target in the network created by those sensor nodes has based on the LEACH [39]. We extracted a graph with the number of rounds to the active node dead node and the residual energy. All this work has been done on the MATLAB based software. All graphs have indicated in the paper. The scale taken to extract the result is about the hundred nodes with five-thousand Rounds. If we talk about the Active node and Rounds, then where only ten nodes of him have left on fifteen hundred rounds, the same localization algorithm has ninety-eight nodes have left. Similarly, if we talk about dead nodes and rounds, then up to two thousand rounds, all the nodes have dead, whereas in the localization algorithm, near twenty nodes have died. Finally, we extracted the graph between the residual energy and the nodes, and we found that up to fifteen hundred rounds where there is no one left in each node in the LEACH, the same localization algorithm still have a few energy in the nodes. In this experiment, we have created a network with all the notes in point-five joules energy in all nodes [51].
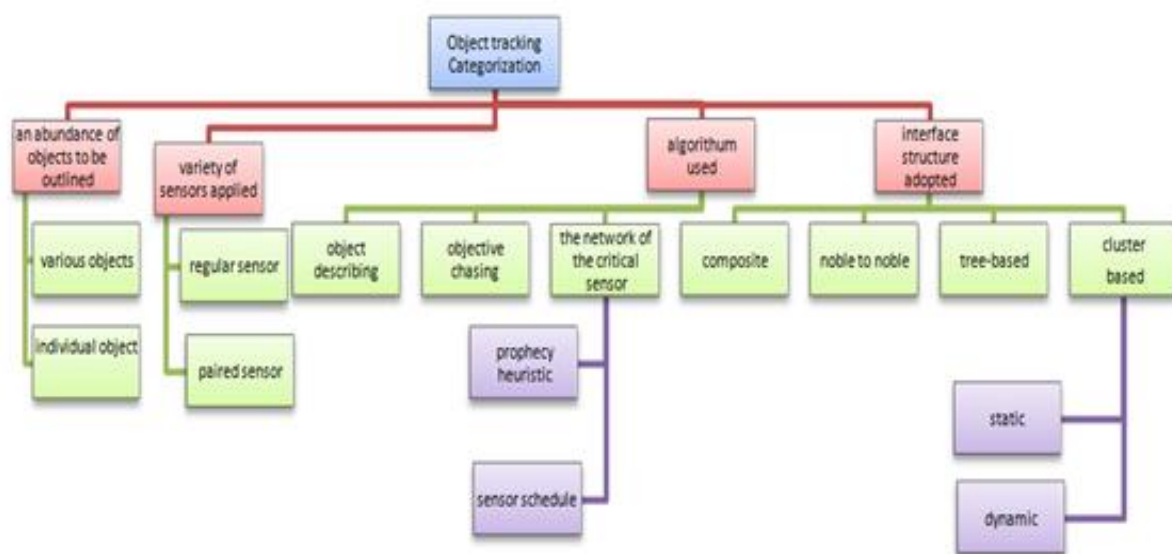
Figure 4: Object tracking architecture in wireless sensor network
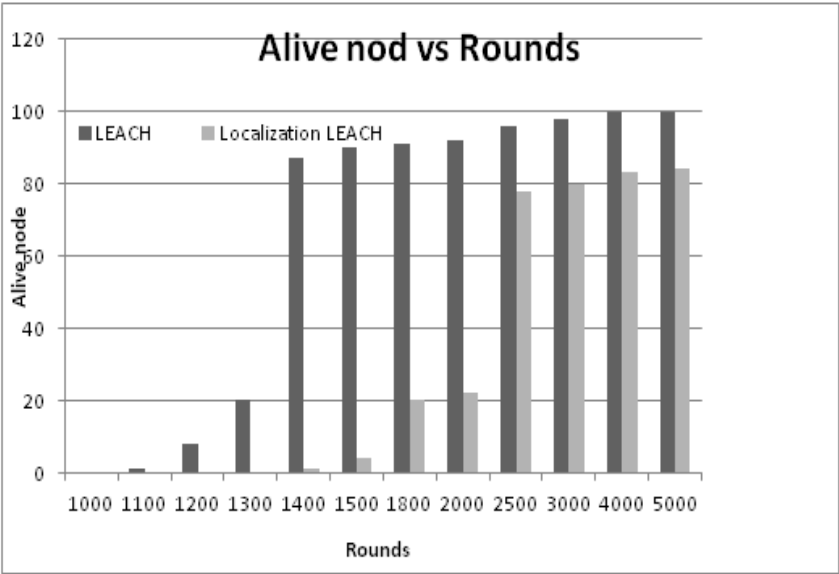
Figure 5: Alive node vs Rounds
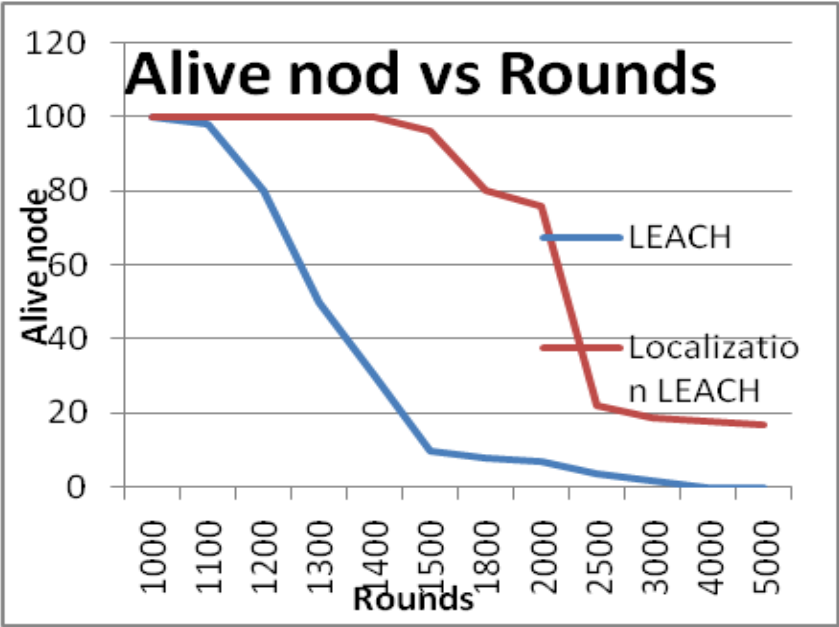
Figure 6: Line Curve of Alive
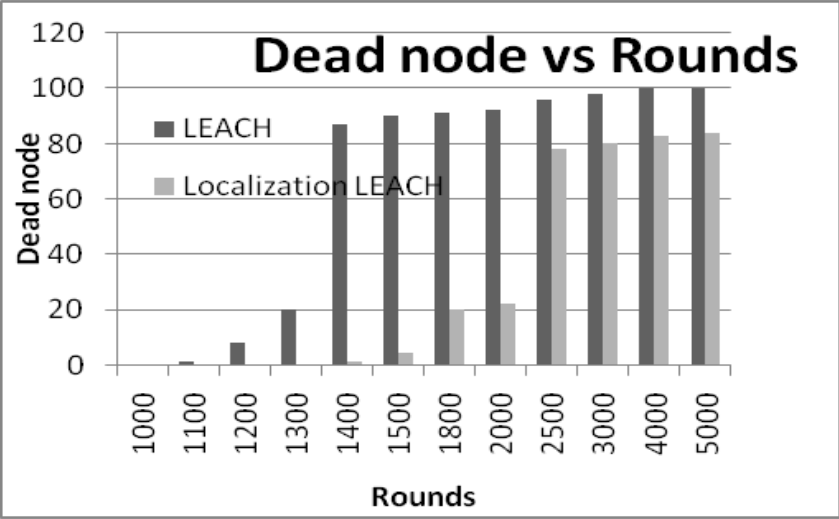
Figure 7: Dead node vs Rounds
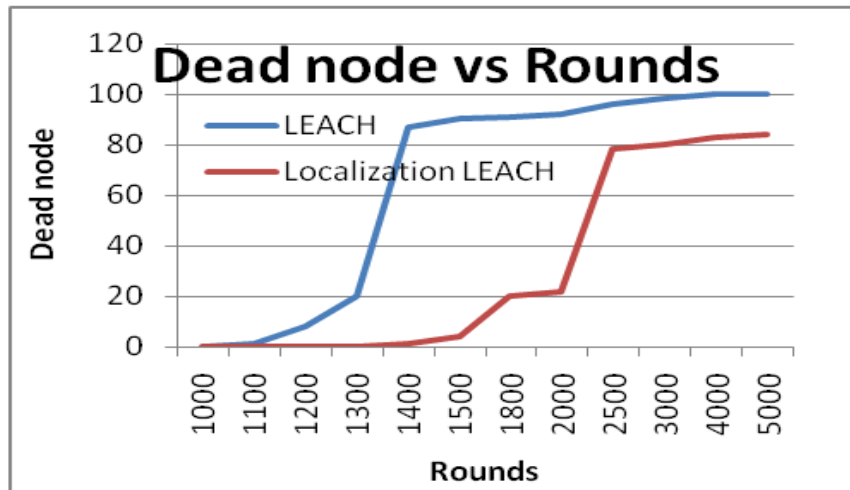
Figure 8: Dead node vs Rounds
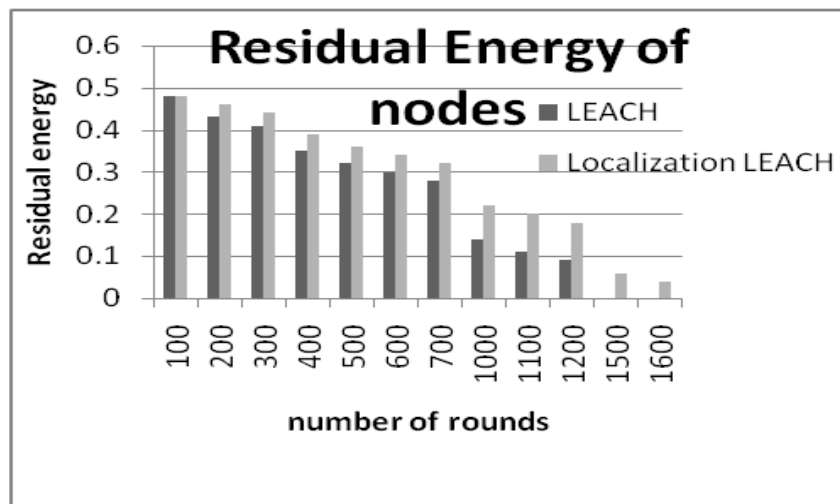
Figure 9: Comparison of Residual Energy
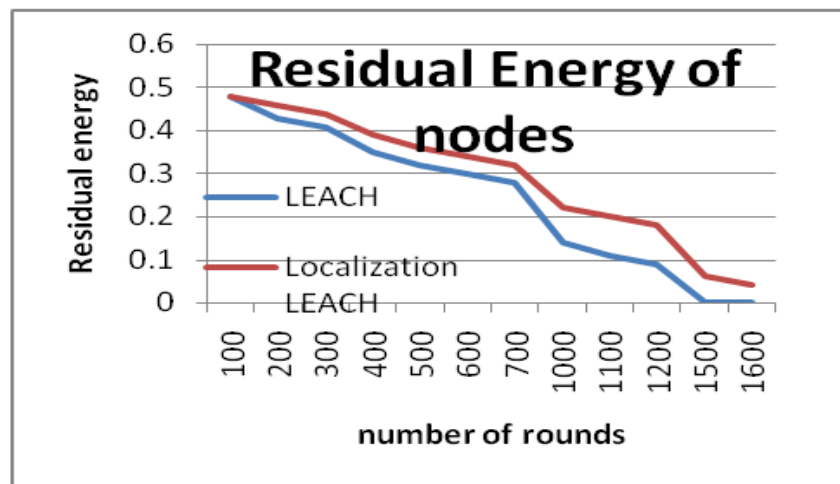
Figure 10: Line curve of Residual energy

5. CONCLUSION

The main objective of this paper is to create an algorithm to save the energy spent in locating a moving target in WSN, which has based on the MATLAB software as well as where to use this network. Also, where such type of experiment can be done is discussed. The picture of it has also been told through this paper. In this paper, a view of what happened in this field has also given through this paper. The principal locus in this document is the comparison of basic LEACH [23-46] to the Localization Algorithm with a comparison parameter is an alive node [5], Dead node, and Residual Energy to the number of Rounds. The complete chart is mention in Result

and shows that this algorithm has given a Great Result to another result that has come and the basis on which these results have expanded and the energy that can be used to find more than one moving target in the future. It is going to be done to save energy. There is new work, and as far as I have researched, it is different from the work done so far, and the Result is also good.

6. PSEUDO CODE

Algorithm 1: *Object Localizing in WSN*

Requires: *Parameter initialization, Formation cluster head,*
       Error accuracy, Energy Optimization Protocol for data Transfer

Ensures: *Object localization throughout the network*

1: *Parameter initialization*

2: *Network formation by random node deployment*

3: *Moving object located*

4: *Apply algorithm to find three nodes at minimum distance*

5: *Select one node at least minimum distance*

6: *Calculate the strength of signal*

7: *Apply DPR and calculate location*

8: *IF desired predicted node is less than or equal to the*
    Range of moving object then predicted node becomes
    Cluster head

9: *Else (further move to where moving object is located)*

10: *End if*

11: *Absolute tracking and prediction accuracy error of*
   x and y coordinate is calculated

12: *Energy optimization protocol is applied for data transfer*

13: *Nodes start to sense data*

14: *Data send to its cluster head* **(CH)**

15: *Cluster head send Data to base station* **(BS)**

16: *End*

Algorithm 2: *for Trilateration algorithm*

Requires: *Apply Trilateration algorithm to locate the object*

1: *Locate moving object coordinate*

2: *Finding the received signal strength captured by all sensor nodes*

3: *Path loss exponent*

4: *Apply DPR*

5: *Generating mapping circle*

6: *Selected id for cluster head*

7: *Compute the root mean square error*

8: *Counter for bit transmitted to base station to cluster head*

9:     **While** *(First node dies)*

10:       **Do** *(Localization algorithm is applied for energy optimization)*

11: *End While*

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SECURITY ATTACKS ON CLOUD

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ABSTRACT

Cloud Computing is the emerging technology in the world for hosting and delivering services over the Internet. It permits Us to make, arrange, and design applications. It offers various benefits such as low cost, access to different services on the cloud without any installation. Due to this the businesses and organizations are depending upon Cloud for its services.Recently, Due to the Pandemic crisis, Most of them are shiftingto work on Cloud. Despite all the advantages provided by the Cloud, It is prone to Security attacks which limits its widespread adoption. So, here we are going to know about the differentkinds of attacks on the cloud and also get a detailed study of prevention to solve this. The main aim of this research paper is to comprehend the security dangers and distinguish the fitting security procedures used to relieve them in Cloud Computing.The recognizable proof of safety difficulties and relief procedures in enormous number of administrations of Cloud Computing is a very testing task. During the time spent recognizable proof from research techniques ,we had distinguished a good number ofdifficulties furthermore, relief procedures which are being utilizedas of now and furthermore in future Distributed computing.

For a Prior security purpose, we can secure our Data which can be a doc file, image, audio, or video file using the XORsymmetric Encryption method which is very useful in the protection of our documents even if the cloud is being attacked bythe attacker he/she would not be able to access these documents

Index Terms—Attacks,Security,DoS,Account Hijacking,Man-in-the-Middle,Prevention

I. INTRODUCTION

Cloud computing is an apt technology that is providingusers with many great services as well as reliability and cost- effectiveness. Consequently, it has become a trend. Predom- inantly, it runs a suitable platform for the users to access the cloud resources and services over the internet. Due to its advantages which include on-demand services, pay-as- you- go, and low-cost, it became very useful and convenient to use. On-demand service providing is the main goal of cloud computing. However, there are lots of security issues, threats, and challenges connected to the use of cloud computing. Attackers are constantly working on developing sophisticated ways to attack the Cloud. Security is a very important concern when we use the non-cloud infrastructure because the data

which is located in a virtual cloud server in an isolated areawith no authority on it

A. Overview on Cloud computing

Cloud Computing provides us a way by which we are ready to access the applications as utilities, over and resources over the web. It allows us to plan, build, and organize applications online by utilizing the already developed services which make our work easier and finish our task during a short interval of our time. The major benefit up here is we would need not worry about maintaining or managing our resources.

II. ATTACKS ON CLOUD

A. Phishing Attack

Phishing is a type of social engineering attack which is oftenused to steal user data, including login credentials and credit card numbers. It occurs when an attacker, pretending to be a trusted entity, mislead a victim into opening an email, instant message, or text message. The recipient is then tricked into clicking a spiteful link, which can lead to the installation of malware, the freezing of the system as part of a ransomware attack, or the revealing of sensitive information. The scammersnormally gather as much information about it as they canahead of time to make their letters as persuading as could really be expected. For a touch of credibility and uniqueness, they might construct the victims' email addresses into phishing hyperlinks, so that when the phony page is visited the locationis as of now there, and just the mailbox secret password stays to be entered.

1) Methods of Phishing Attack:

- Sending through email: The attacker showcases itself to be a part of a larger organization or behaves as sending official letters from the bank with an attached archivethat contains malicious software. Due to its presentation, the victim will fall for the attack and click onto the attachment, and fall prone to the attack.

- Malicious PDF Files: Most individuals think that PDFs are safe to use and they never have an idea

about the
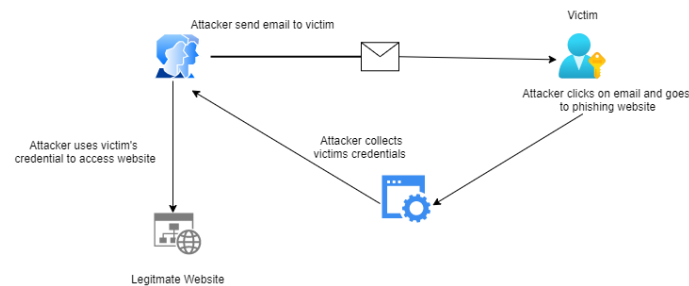
Fig. 1. Diagram of Phishing Attack.

attackers that they can turn those PDFs into keys to invade our Privacy which presents itself as a very important document which is needed to be read urgently. Opening these types of files will exploit malicious code not only in the cloud but also the Virtual environment is also damaged.

2) **Scenario of Phishing Attack: For instance, let us take an example where the Attacker creates a fake** website or URL which is similar to the original one that is sent to one or more victims. When the victim clicks on the link, the page is directed to the fake website where the person enters their credentials which are then saved with the Attacker.

B. **DoS Attack**

A DoS attack is a refusal of administration attack wherein the victim's Cloud is barraged with traffic from the pro- grammer's framework. The attack is with the end goal that the victim's Cloud closes down. While attacking, the center is to trouble the victim's server influencing its capacities constraining the Cloud to close down. DoS attack is an internet-based assault. At the point when the assault is made on a site, it is made totally inaccessible for its clients. The objective site's server is assaulted with immense traffic from programmers' framework to close its administrations. Mostly DDoS Attack takes place where the attacker uses multiple computer or machines to attack the targetted victim's cloud

Fig. 2. Diagram of Dos Attack.

There are classified as

- Low-Rate(LDDoS) whose volume is in Mbps which aim is not to stop the cloud services from doing their normal operations but to decrease the Quality-of-Service (QoS) for the legitimate clients of the cloud.

- High-Rate(HDDoS) whose volume is more than 500Gbps and aims to either interrupt the connectivity of the le- gitimate users which is called the Bandwidth Depletion Attack or make the services of the cloud unavailable and this is called Recourse Depletion Attack The impact of this attack can affect Businesses and Revenue loss, the extra consumption of energy, components damage, the cost of mitigation, and reputational loss. The confidentiality of the user's data can be misused by the attacker.

C. **Man in the Middle Attack**

A Man in the Middle attack happens when the delinquent claims to be a genuine member situating himself in the discussion between a client and an application to meddle among one of the gatherings causing it to show up as a relaxed exchange of data. The assailant controls the discussion making harm both of the gatherings as a real member.

The target of an attack is to digest individual data, for example, account subtleties, capture information, charge card numbers, login qualifications, and access the assets. Data determined during the assault can be utilized for unapproved reserve move, fraud, and unlawful secret key change.

An effective MITM assault comprises of 2 stages: Intercep-tion and Decryption.

The most straightforward way for the assault is that the aggressor makes free malignant wifi accessible to the public which isn't secret key ensured. When people in general interfaces with such wifi, the assailant gains admittance to the entirety of the information. An aggressor utilizes either IP caricaturing, ARP parodying, or DNS ridiculing.

In IP satirizing, the aggressor camouflages himself as an application by modifying bundle headers in the IP address. When the casualty gets to the URL interfacing with an application, it is shipped off the assailant's site.

While in ARP satirizing, the aggressor interfaces the MAC address with the IP address of the client sending counterfeit ARP messages. In this manner, the subtleties shipped off the first IP address will be diverted to the assailant.

DNS ridiculing includes infiltering the DNS server and changing the site's location record. Therefore, the clients at- tempting to get to the webpage are shipped off the aggressor's site because of the change in the DNS record.

After the block attempt, a two-way SSL traffic should be decoded without cautioning the client. Subsequently, a few strategies exist to accomplish this:

HTTPS Spoofing sends an authentication to the client's pro- gram once the association demand is made to a protected site. It holds a computerized thumbprint concerning the included application where the program confirms from their trusted locales. Along these lines, the assailant can get the data before the application.

SSL Beast targets TLS Version 1.0 in SSL. Here, the client's PC is tainted with antagonistic JavaScript which has encoded treats on the site. Then, at that point, the application's CBC is named to decode the treats.

SSL Hijacking-Here, the aggressor passes the produced verification keys to both the client and the application while TCP handshake happens.

SSL Stripping-corrupts the HTTPS to HTTP association while encroaching upon the TLS verification sent from the application to the client. The assailant sends the decoded variant to the client of the application site and keeps up with the got meeting. Subsequently, the whole meeting of the client will be noticeable to the assailant.
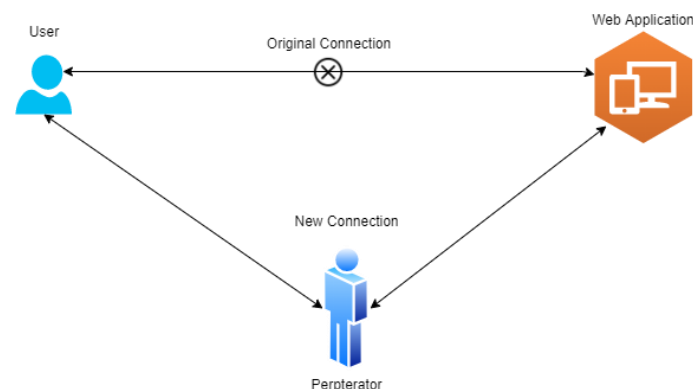
Fig. 3. Diagram of Man in the Middle Attack.

D. **Hyperjacking**

An attacker utilizes the Hyperjacking to take the advantage of the hypervisor utilizing the rootkit introduced in the vir- tual machine. Assuming the aggressor gets effective, he will approach the whole host and can likewise alter the manners of the virtual machine. Which prompts harm to the running virtual machine.

Taking advantage of Live Migration:

Attackers have recognized, during the relocation in the cloud or between the mists, they get the chance for access. At the point when the associations play out the live relocation, the assailants interrupt the cloud the

executives situation and control them by making counterfeit movements or moving assets to the virtual organizations.

III. LITERATURE SURVEY

In [1], The author has proposed a model of cloud storage which has become an essential computational model for pro- viding flexibility in impenetrable resources as well as reduced costs. Storing the data in different locations causes these problems. The major issues to be discussed are security and protection. Intrusion Detection Mechanisms, CryptographicMethodology, and Electronic Forensic Software are provided by some of the service providers.Some of the Cloud protection issues are Data confidentiality-The health and financial sectorsneed strict security for their data. Any security infringements
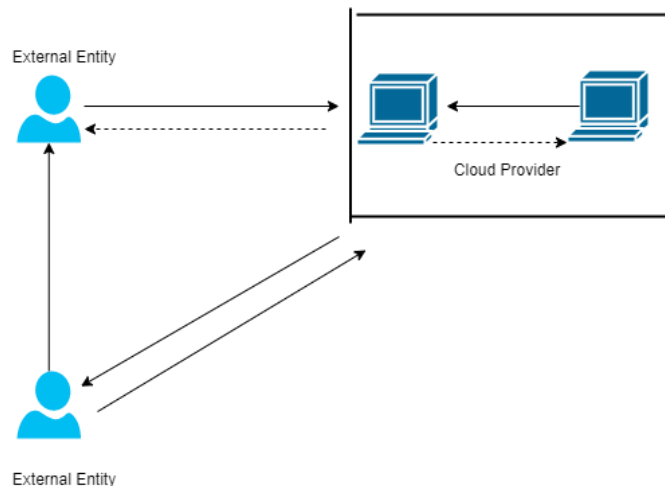
Fig. 4. Diagram of Hyperjacking.

may result in sanctions arising from the leak of classifiedinformation which may damage the credibility of the organi- sation. Malicious insiders-The client cannot monitor personnelprocurement procedures. Therefore, until employing workers particularly those who use his data centres, to monitor the cloud provider infrastructure. This paper cannot address any protection threats from bringing an organisation into the cloud are proactively analysed and a Risk Management Plan for all defined risks is accessible. Cost of a countermeasure is an important role in choosing the protection standard.

In [2], The author proposed a framework of 'Cloud computing as an on-request conveyance of administrations' in which applications and framework are designated to clients as metered administrations over networks. Cloud registering administrations are a lot less expensive as the client doesn't need to arrangement any registering equipment support. It is an arising innovation that convey figuring administrations, for example, on the web business applications and infor- mation stockpiling over the Internet. As many organizations are adopting to the cloud computing, attackers can exploitthe cloud to obtain unauthorized control on the valuable data stored in it. Different types of services are provided by trusted cloud providers over the Internet by using many technologies, it arises different security threats. The process ofutilizing services and computing resources from the hardware on which they run is known as virtualization. VM is an image of large size contents per-image of operating systemis known as visitor working framework. It is responsible for running various assignments on the framework. Multi-tenancyintroduces is sharing resources, that are shared by multiple operators is called tenants. It gives one or more users the opportunity to share a single cloud network. A programming language that is meant for database management systems (DBMS)SQL. In this injection attack, the attacker targets the SQL servers that are vulnerable. Attackers can inject maliciouscode in SQL code to acquire unofficial access to a database and ultimately to other confidential information. Further ag-gressors can control the data set substance, recover delicate information, run framework orders distantly or likewise get admittance to the web server for extra crook and criminal operations. Weak authentication mechanism and innate re-strictions of one-factor validation systems permit assailant to acquire unapproved admittance to distributed computing frameworks. This paper cannot address the solution from attacking password in cloud. Collaboration with the cloud happens through Internet channels, which, without legitimate assurance, can likewise represent an expected danger to the security of the organization. This implies that attackers can capture a web meeting or take passwords to get to cloud the executives frameworks.

In [3], The author has proposed a framework of types of security challenges which include Third Party Handling Data: The data stored in Cloud is handled by the third party. Therefore, there is security risk. Cyber

Attack: There is a lot of different challenges and when it comes to malware, we are seeing that malware is nowadays very polymorphic it attacks multiple different vectors simultaneously. A middle man attack: occurs when the delinquent pretends to be a legitimate participant positioning himself in the conversation between a user and an application to intrude among one of the parties making it appear as a casual trade of information. Account Traffic Hijacking: This kind of attach can provide an exploiter with passwords and other primary information which can easily allow them to access all the data This paper cannot address the possible solutions for any of the security challenges.

In [4], The author proposed a model of preventing security attacks on cloud. It offers an assortment of advantages like expense saving, admittance to various administrations with practically no establishment from anyplace and any time by web, and so forth In spite of the relative multitude of benefits presented by Cloud, this innovation is as yet powerless to secu-rity dangers. The customers and every one of the associations will not give need to the benefits of CC over of their own information security. Regardless of the multitude of benefits presented by CC, this innovation still powerless to security dangers. The major threats are account piracy, data loss, denial of service (DoS), distributed DoS attacks, internet protocol (IP) spoofing, address resolution protocol spoofing, man-in- the middle, port scanning, etc. Indeed, this new technology can be easily targeted by attackers. This paper cannot detect the unknown attacks which are not in this database neither profiled before Hence, there is a need for a new solution which focuses on detecting new malicious attacks that have not been occurred before and in real-time. While previous researches have applied a basic IDS to detect malicious attacks in Cloud, the capabilities of this system for network detection system have not been thoroughly investigated.

In [5], The author has proposed a model of cloud com- puting which provides us with ground-breaking advantages over native servers like to improve capacity, performance and decrease costs, but meanwhile, it carries many security issues like browser Malware- Injection and Flooding attacks.

Cloud security has various benefits such as reduced costs, Reduced Administration and Reliability. Every one of these aspects plays a vital role in providing a very versatile and cost-efficient cloud platform or server to its clients. With the utilization of increasingly more cloud servers, its security has turned into a significant point to talk about. SECURITY ATTACKS IN CLOUD COMPUTING - Flooding attack, Data stealing, Wrapping attack, virtualization attack, Accountability checking, Malware- Injection attack In flooding attack, the attacker sends parcels from the mishandled data assets in an enormous sum which are called a zombie. The parcels might be as protocols, like TCP, UDP, and ICMP These sorts of conventions are seen distinctly in the informal organization association framework. In Data stealing Attack the preser-vation and natural admittance to break a record is done by information taking. In this, the record and the secret phrase are abused first. Then, at that point, thus, the capacity honesty and cloud security will be pannier by the taking and annihilating of the multitude of helpful and secret information. In Malware- Injection Attack, the attackers insert their own malicious service implementations. The first step of the attack after the insertion is to implement the malicious service to run Iaas or SaaS servers Then the cloud is consequently diverted to the solicitations of substantial clients to the pernicious assistance, and the aggressor can begin his code execution and this is the principle of the malware attack. This paper cannot address the executives of data innovation assets and administrations, how- ever the change will consistently accompany new challenges. In [6], The author has proposed a model of Virtual Machine Level Security Challenges in which VM cloning attack occurs when a duplicate VM is created resembling an existing one causing security issues besides wasting resources. VM isola-tion is an attack that isolates a VM from others which leads to reduction of QoSin presence of compromised hypervisor. VM sprawl on the other hand is the situation where VMs are deployed sans control causing resource wastage. Hypervisor Level Security Challenges: VM to VM attack is another attack situation where an adversary can take control of a VM through another VM that run on the same host. VM introspection is another activity that could monitor state of VM that may result in illegal access to VM information. HYPER-VISOR ATTACKS: Interaction data modification: This kind of threat occurs when adversary modifies the address of Virtual Machine Control Structure (VMCS) during context switch. Modification of entries in EPT: With respect to remapping attack, different parities such as attacker VM and victim VM. The attacker VM tries to remap Guest Virtual Address (GVA) to the page released by victim and thus it can use it. Thus, the information leaks. In double mapping an attacker compromises

and controls a VM.

In [7], The author has proposed an idea of cloud computing with great services such as scalability along with effectiveness of the cost. It has many advantages such as demand services, pay as-you-go, and low-cost, On-demand service providing is the main goal of cloud computing . DDoS attacks is a major threat that attacks traditional network architectures. DDoS

attack is a special type of DoS attack where controlled systems target the victim. These systems are called Bots or Agents. The attacks could be classified Low-Rate (LDDoS) and High- Rate (HDDoS) , also called brute-force and semantic attacks. The impact of these attacks could be direct or indirect-The direct effect may be business and revenue loss while indirect effects include the extra consumption of energy, components damage, the cost of mitigation, and the reputational loss. Since the DDoS attacks have the most elevated likelihood of making the assets inaccessible from any remaining sorts of dangers, the safeguard systems against them should be adequately hearty to coordinate with the refinement of the assaults. This paper cannot address the cloud infrastructure which is affected by DDOS attack. The foundation of the cloud, the situation, and the impact of DDoS attacks are clarified in the paper. Moreover, the few sorts of DDoS attacks with the cloud includes that open the entryway for the attackers to dispatch the DDoS attacks are featured too.

In [8], The author has proposed a model of cloud pass- word shield. Password-based authentication is essential to any online service. It is normally powered by a database of user credentials, for example a RADIUS server. Password-based authentication can still be resource-consuming on large-scale systems and is thus vulnerable to distributed DDoS attacks. The rapid growth on the number of insecure devices also ag- gravates the scale of DDoS attacks, and stops legitimate users from accessing essential network services. These devices are vulnerable to malware which infect them and turn them into bots.Essentially, the firewall is a password pre-screener using a global Bloom filter to provide DDoS resistance for password- based authentication servers, which supports all operations of a user credential, i.e. setup, insertion, query and deletion. As for scalability issue, the Bloom filter can be naturally replaced by its scalable varients, such as counting Bloom filters, dynamic Bloom filters for elastic capacity. KSSBF: key-based secure solution for trusted cloud servers. In this design, the Bloom filter reveals nothing without knowledge of a private key, thus can be distributed to a non-trusted environment and to be updated timely. GSBF: generically secure solution for non- trusted cloud servers. For third-party firewall vendors, we design a Bloom filter that is generically secure without relying on a private key. We show that false positives in a Bloom filter, can work against offline brute-force attackers who have access to the Bloom filter after compromising the cloud server. This paper is unable to differentiate whether the firewall is trusted or untrusted, we design KSSBF and GSBF, both of which provide the two-folded provable security against DDoS attacks and offline brute-force attacks.

IV. SOLUTION

A. Encryption and Decryption of image,audio,doc,mp3 and video files

It is only a straightforward interaction in which we convert our information or data into discharge code to keep it from unapproved access and keep it hidden and secure. To start with, we will choose a picture, and afterward we will change over that picture into a byte exhibit because of which the picture information will be completely changed over into numeric structure, and afterward we can without much of a stretch apply the XOR procedure on it. Presently, at whatever point we will apply the XOR work on each worth of the byte exhibit then the information will be changed because of which we will not be able to get to it. In any case, we ought to recall one thing that here our encryption key assumes a vital part without that key we cannot unscramble our picture. It goes about as a secret phrase to unscramble it

V. RESULTS

A.

Fig. 5. Implementation of Phishing Attack

B.
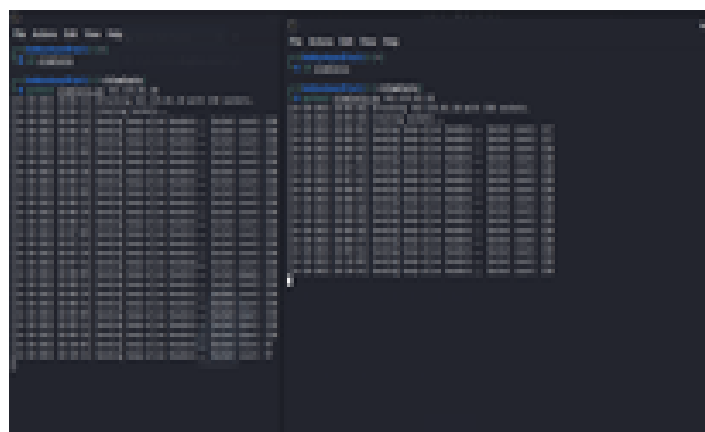
Fig. 6. Implementation of DDOS Attack

C.
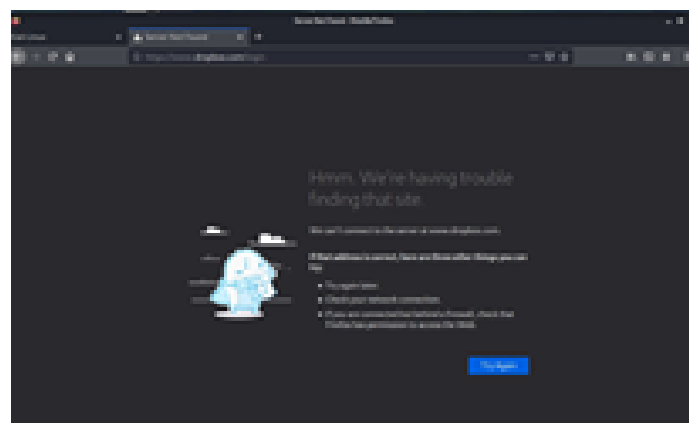
Fig. 7. Effect of DDOS Attack on server

VI. CONCLUSION

The reception of cloud innovation was a distinct advantage both for organizations and programmers. It brought an en- tirely different arrangement of safety hazards for distributed computing and made various cloud security issues.

The shift to cloud innovation gave organizations much-required versatility and adaptability to stay serious and creative in the always changing business climate. Simultaneously, it made endeavor information powerless against releases andmisfortunes because of an assortment of elements.

Keeping the guidelines of cloud security is the most ideal way of shielding your organization from reputational and financial misfortunes.

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ANALYSIS OF RC BUILDINGS WITH PLAN IRREGULARITIES UNDER THE INFLUENCE OF SEISMIC BEHAVIOUR

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ABSTRACT

Earthquakes are the natural phenomenon which can happen suddenly and can cause vast destruction. Most of the Indian land is insecure because of the vibration caused by the earthquakes. In the other sense it is impossible to prevent occurrence of earthquake, but the damage can be controlled by means of effective seismic designs. The design can be done by considering various limits states specified by the codes and applying the economical ones. The structure can be designed as semi elastic and it is economical rather than elastic because designing of structure for total elastic in response is very uneconomical. The aim of the present work is concerned with the effects of various plan irregularities on the seismic response of a structure. The objective of the project is to carry out Response spectrum analysis (RSA) of plan irregular RC building frames and to carry out the earthquake based design using IS 1893.The scope of the project also includes the evaluation of response of structures like maximum storey displacement, maximum storey drift, story stiffness and storey shear, time period and Comparison of the results of analysis and design of irregular structures with regular structure was done, the four types of models consider namely MODEL-I,MODEL-II,MODEL-III and MODEL-IV in that MODEL-I is a regular model remaining three are plan irregular models. Results show that plan irregularity with G+10 models, the model-II [Use of columns of different sizes] shows highly response results for storey displacement, storey drift and time period. When come to the story stiffness and storey shear point of view model-III [Presence of structural wall on one side of buildings] gives better results compare to other models, but the model-IV exhibits a complex behaviour under uni- or bi-directional seismic excitation because of torsional coupling effects affecting the response.

Keywords: Earthquake, RC buildings, Seismic behaviour

1. INTRODUCTION

In multi-storied framed buildings, damage from earthquake ground motion generally initiates at locations of structural weaknesses present in the lateral load resisting frames. This behavior of multi-storey framed buildings during strong earthquake motions depends on the distribution of mass, stiffness, and strength in both the horizontal and vertical planes of buildings. The damage in a structure generally initiates at location of the structural weak planes present in the building systems. These weaknesses trigger further structural deterioration which leads to the structural collapse. These weaknesses often occur due to presence of the structural irregularities in stiffness, strength and mass in a building system. The structural irregularity can be broadly classified as plan and vertical irregularities.

In the last decade, the Indian subcontinent has experienced many devastating earthquakes. The occurrence of earthquakes is not evenly distributed in India. Major earthquakes of India are associated with the collision plate boundary between the Indian and Eurasian plate. The occurrence of earthquake is irregular in the southern India, whereas the north- eastern, the northern and the north-western part of India are subjected to regular earthquakes. The Himalayan Frontier is seismically one of the most active regions of the world. The peninsular India is also not devoid of earthquake. In this structure people are demanding for height increasing at a particular floor level. Like shopping malls, car parking, gym, swimming pool etc. So in this type of structure should be having to resistant stability during an earthquake. Seismic building analysis is one of the researches interests now a days, it is because earthquake causes lots of damage and losses of economy or finance. It is desired to study seismic response with real time history to prevent seismic effect by designing structure to withstand against earthquake. The performance of a RC building during strong earthquake motions depends on the distribution of stiffness, strength and mass along both the vertical and horizontal directions. If there is discontinuity in stiffness, strength and mass between adjoining storeys of a building is known as irregular building. One of the most commonly used lateral load resisting system in building is shear wall system. it is well established fact that shear wall are quite effective in seismic load resistance of to reinforced concrete buildings. Proper modeling fact that shear wall have very high-in-plane stiffness and strength, which can be used simultaneously to resist large horizontal loads and support gravity loads, making them quite beneficent in seismic performance of buildings so an attempt would make to seismic response with response spectrum. The earthquake code IS 1893(part-1):2001 indicates that every structure shall be designed the seismic forces because whole part of the country is under the seismic influence.

1.1 The detailed classification of structural irregularity
As per IS 1893:2002(part-1) vertical irregularities are classified as follows.

Stiffness irregularity: a) Soft Storey: A Soft Storey is one in which the lateral stiffness is less than 70 percent of that in the storey above or less than 80 percent of the average lateral stiffness of the three storeys above

b) Extreme soft storey: A extreme soft storey is one in which the lateral stiffness is less than 60 percent of that the storey above or less than 70 percent of the average stiffness of the three storeys above.

Mass irregularity: Mass irregularity shall be considered to exist where the seismic weight of any storey is more than 200 percent of that of its adjacent storeys.

Vertical geometric irregularity: vertical geometrical irregularity shall be consider to exist where the horizontal dimension of the lateral force resisting system in any storey is more than 150 percent of that in its adjacent storey.

In plane discontinuity in vertical element elements resisting lateral force: An in- plane offset of the lateral force resisting elements greater than the lengt of those elements.

Discontinuity in capacity: A week storey is one in which the storey lateral strength is less than 80 percent of that in the storey above.

1.1 Plan irregularity
The plan asymmetry has been given utmost importance. The presence of the plan asymmetry makes it more vulnerable to damage during occurrence of an earthquake which is evident from excessive damage of buildings due to plan asymmetry during previous earthquakes. The plan asymmetry results in torsion in a building which is due to non-coincidence of center of mass and center of rigidity. The distance between these two points is called as eccentricity. The eccentricity generated due to other factors like non- uniform distribution of load and difference between the actual and computed stiffness/strength yield of elements. These factors lead to coupling between lateral and torsional motions in the building system which results in non-uniform distribution of the floor displacement and uneven seismic demands in lateral resisting elements at different locations of the building systems which eventually leads to its failure. The torsion originating from these effects is called as accidental torsion. Due to damage caused by torsional irregularities during past earthquakes, the seismic torsional response of irregular structures has been extensively investigated by many researchers throughout the last few decades.

1.2 Failure of plan irregular buildings
Damage to irregular structures caused by asymmetry in plan has been observed during many major and minor earthquakes during the past. The non-coincident centers of mass and stiffness in a structure generate plan asymmetry which causes torsional vibration resulting in severe damage to structural components in the more laterally flexible regions of the structure. The building in Figure 1.21 shows failure of a three-storey reinforced concrete building from the Miyagi-Ken-Oki (Japan) earthquake in 1978 due to torsion. Due to presence of a stiff wall, the center of stiffness shifted towards the wall. This resulted in twisting of building with respect to the center of stiffness. This was due to occurrence of torsion generated by the eccentricity between the centers of mass and stiffness. The torsion resulted in severe damage of columns along the periphery away from the wall. Figure 1.22 shows the Ministry of Culture building which was damaged due to torsion during the Haiti earthquake in 2010. The presence of stiff core area on one side of the building resulted in torsion which led to damage of lateral load-resisting members away from the center of stiffness. Due to failure of these members, the whole storey experienced a downward pull which led to the total collapse of the building.

2. METHODOLOGY
A detailed examination of the related literature in the form of journals and official document was performed to study Reinforced concrete building can adequately resist both horizontal and vertical load. Whenever there is requirement for building to resist higher values of seismic forces, lateral load resisting system such as shear wall should be introduced in a building. Vertical plate like RC wall introduced in building in addition to beam, column and slab are called as shear wall. Shear wall can be provided both along the length and width of the building. Properly designed building with shear wall has shown good performance in past earthquake. In this chapter different methods of seismic analysis are briefly discussed, and designed procedure is explained.

2.1 Loads
Loads in a structure can be specified as joints load, temperature load and fixed end moment load. ETABS can also generate the self-weight of the structure and use it as uniform distributed loads in analysis. Any fraction of this self-weight can also be applied in any direction.

2.1.1 Member load
Three types of member loads may be applied directly to a member of a structure. These loads are uniform distributed loads, concentrated loads, and linearly varying loads (including trapezoidal). Uniform loads act on the full or partial length of a member. Concentrated loads act at any intermediate, specified point. Linearly varying loads act over the full length of a member. Trapezoidal linearly varying loads act over the full length or partial length of a member. Trapezoidal loads are converted into a uniform load and several concentrated loads. Any number of loads may be specified to act upon a member in any independent loading condition. Member loads can be specified in the member coordinated system or the global coordinate system. Uniformly distributed Member loads provided in the global coordinate system may be specified to act along the full or project member length.

2.1.2 Fixed end member load
Load effect on a member may also be specified in terms of its fixed end loads. These loads are given in terms of the member coordinate system and the direction is opposite to the actual load the member. Each end of member can have six forces; axial; shear y; shear z; moment y; and moment z.

2.1.3 Dead loads
All permanent construction of the structure forms the dead loads. The load comprises of the weight of walls, partitions floor finisher, false ceilings, false floors and the other permanent construction in the buildings. The dead loads may be calculated from the dimensions of various members and their weights the unit weights of plain concrete and reinforced made with sand grave or crushed natural stone aggregate may be taken as 24kN/m" and 25kN/m" respectively.

2.1.4 Earthquake load
Earthquake shall be calculated using BIS 1893-2002 PART recommendation. Response spectrum method has been used for calculation of earthquake horizontal load using the calculation of natural period. Earthquake Resistant Design now the following steps may be taken.

(a) Estimation fundamental time period Ta using empirical expression given in the code IS: 1893-2002 CI.7.6. Ta=0.075 Ho.75, IS: 1893 CI.7.6.1 for bare frame along each axis Ta=0.09h/√d along x-axis IS: 1893 CI.7.6.2 for frame with substantial in fills is the height of the building and d and b are the base dimension of the building along x and z axis respectively

(b) Calculate the design horizontal seismic coefficient Ah now computed the fundamental time period T/x and T/z for the bare frame along the two axes by dynamic analysis. These are generally found to be higher than Tax and Taz respectively. The design horizontal coefficient Ah is given by

2.1.5 Supports
Supports are specified as PINNED, FIXED, or FIXED A pinned support has restraints against all translational moment and none against rotational movement. In other words, a pinned support will have reactions for all forces but will resist no moment. A fixed support has restraints against all directions of movement

2.2 Dynamic analysis
Dynamic analysis shall be performed to obtain the design the design seismic force, and its distribution to different levels along the height of the building and to the various lateral load resisting elements, for the Building.

a) Regular building- Those greater than 40 m in height in zones 4 and 5 and those greater than 90m in height in zones 2 and 1.

b) Irregular buildings- All framed buildings higher than 12m in zones 4 and 5 and those greater than 40m in height in zone 2 and 3. The analytical model for dynamic analysis of building in with unusual configuration should be such that it adequately models the types of irregularities present in the building configuration.

2.2.1 Static Linear Analysis
Linear static analysis represents the most basic type of analysis. The term "linear" means that the computed response displacement or stress, linearly related to the applied force. The term "static" means that the forces do

not vary with time or, that the time variation is insignificant and can therefore be safely ignored. An example of a static force is a building dead load, which is comprised of the buildings weight plus the weight of offices, equipment, and furniture. This dead load is often expressed in terms of N/m^2. Such load are often defined using a maximum expected load with some factor of safety applied for conservatism.

The static and dynamic analysis equation is: $[k]\{u\}=\{f\}$

Where k= stiffness and u=displacement. In linear static analysis displacement, strains, stresses and reaction forces under the effect of applied loads are calculated.

2.2.2 Dynamic Analysis
Dynamic linear analysis is discussed with seismic analysis of the structure analysis of the structure and dynamic analysis can be used to find natural frequency, dynamic displacement, Time history results, and modal analysis.

2.2.3 Time History Method
Time history method of analysis shall be based on an appropriated ground motion and shall be performed using accepted principle of dynamics. Time history analysis is the study of the dynamic response of the structure at every addition of time, when its base is exposed

2.2.4 Response spectrum method
Response spectrum method of analysis shall be performed using the design spectrum specified, or by a site-specific design spectrum mentioned in the response spectrum method. This approach permits the multiple modes of response of a building to be taken into account (in the frequency domain). This is required in many building codes for all expect very simple or very complex structures. The response of a structure can be defined as a combination of many special shapes (modes) that in a vibrating string correspond to the "harmonics". Computer analysis can be used to determine these modes for a structure. For each mode, a response is read from the design spectrum, based on the modal frequency and the modal mass, and they are then combined to provide an estimate of the total response of the structure. In this we have to calculate the magnitude of forces in all directions i.e. X,Y&Z and then see the effects on the building combination methods include the following:

Absolute –peak values are added together.

Square root the sum of the square (SRSS)

Complete quadratic combination (CQC) – a method that is an improvement on SRSS for closely spaced modes.

2.2.5 Design of lateral force
The design lateral force shall first be computed for the building as a whole. This design lateral force shall be distributed to the various floor levels. The overall seismic force thus obtained at each floor level shall then be distributed to individual lateral load resisting elements depending on the floor diaphragm action.

2.2.6 Design seismic Base shear
The total design lateral forces or design seismic base shear (V_B) along any principal direction shall be determined by the following expressions:

$V_B = A_h W$

Where Ah=horizontal acceleration spectrum W=seismic weight of the floors

Fundamental natural period the approximate fundamental natural period of vibration (T), in seconds, of a moment resisting frame building without brick in the panels may be estimated by the empirical expression:

Ta=0.075h 0.75for RC frame building Ta=0.085h0.75 for steel frame building

Where h=Height of building in m. this excludes the basement storey's, where basement walls are connected with the ground floor deck or fitted between the building columns. But it includes the basement storey's, where they are not so connected. The approximate fundamental natural period of vibration (T), in seconds, of all other buildings, including moment resisting frame buildings with brick lintel panels, may be estimated by the empirical expression.Where h=height of building, d=base dimension of the building at the plinth level, in m, along the considered direction of the lateral force.

2.3 DISTRUBUTION OF DESIGN FORCE
Vertical distribution of base shear to different floor level IS 1893(PART-1):2002 The design base shear (v) shall be distributed along the height of the building as per the following expression:

$$Q_i = V_B \frac{W_i h_i^2}{\sum_{j=1}^{n} W_j h_j^2}$$

Q_i=design lateral force at floor I, W_i=seismic weight of floor I

h_i=Height of floor, I=measured from base, and

n=number of storey's in the building is the number of levels at which the masses are located.

Distribution of horizontal design lateral force to different lateral force resisting elements in case of buildings whose floors are capable of providing rigid horizontal diaphragm action, the total shear in any horizontal plane shall be distributed to the various vertical elements of lateral force resisting system, assuming the floor diaphragms can not be treated as infinitely rigid in their own plane, the lateral shear at each floor shall be distributed to the various vertical elements of lateral forces, considering the in-plane flexibility of the diagram. The total shear in direction of horizontal plane shall be distributed to the various vertical elements of lateral forces resisting system, assuming the floor to be infinitely rigid in the horizontal plane.

2.3.1 Beam Design
Beams are designed for flexure, shear and torsion. If required the effect of the axial force any be taken into consideration. For all these forces, all active beams loading are pre scanned to identify the critical load cases at different section of the beams. The width of the member shall be not less than 200mm. Also the number shall perfectly have a width- to depth ratio of more than 0.3. The beam consideration is rectangular beam. The bending moment and deflection of the beam will be calculated by considering the different types of loads.

2.3.2 Column Design
Columns are designed for axial forces and biaxial moments per IS456:2000.

Columns are also designed for shear forces. All major criteria for selecting longitudinal and transverse reinforcement as stipulated by IS: 456 :2000 have been taken care of in the column designed of E-TABS. However following clauses have been satisfied to incorporate provision of IS 13929:1993cl 7 the minimum grade of concrete shall preferably be M30.

Steel reinforcements of grade Fe415 or less only shall be used

The minimum dimension of column member shall not be less than 200mm. For columns having unsupported length exceeding 4m, the shortest dimension of column shall not be less than 300mm.

The ratio of the shortest cross-sectional dimension to the perpendicular dimension shall preferably be not less than 0.

The spacing of hoops shall not exceed half the least lateral dimension of the column, except where special confining reinforcement is provided.

Special confining reinforcement shall be provided over a length from each joint face, towards mid span, and on either side of any section, where flexural yielding may occur. The length shall not be less than a) larger lateral dimension of the member at the section where yielding occurs, b) 1/6 clear span of the member c)450mm.

The spacing of hoops used as special confining reinforcement shall not excced1/4 of minimum but need not be less than 75mm nor more than 100mm.

The analysis of ETABS

1. Modeling
2. Static analysis
3. Response spectrum analysis

Steps involved in Response Spectrum Analysis in ETABS

1. Define the load patterns and add new load of earthquake in X and Y directions. Select type as seismic and select auto lateral load as IS: 1893:2002 and modify lateral load according to our region.

2. Define the function and then select the response spectrum. Add new function and next select the function type as IS: 1893:2002.

3. Define the load cases and add new load case. Enter the load case data response spectrum in X direction; in that we will give load case type as response spectrum. In loads applied, we will add new, in this we select load type as acceleration, direction is U1, function is whatever functions we have mentioned there is Indian standard response spectrum (IS RS) and then enter the scale factor value.

4. Scale factor: The response-spectrum scale factor is I g / R, where g is acceleration due to gravity (386.4 in/sec2 for kip-in and 9.81 m/sec2 for kN-m). After analysis, we should review the base shear due to all modes, reported in the Response Spectrum Base Reaction Table. If the dynamic base shear reported is more than 85% of the static base shear, no further action is required. However, if dynamic base shear is less than 85% of the static base shear, then the scale factor should be adjusted such that the response spectrum base shear matches 85% of the static base shear. In this case, the new scale factor would be (I g / R) * (0.85 * static base shear / response-spectrum base shear). Analysis should then be rerun with this scale factor specified in the response-spectrum case.

5. Next add another new load case as response spectrum in y direction and select load case type as response spectrum then change the direction that U1 to U2 because in the Y direction now and the function will be Indian standard response spectrum and scale factor is calculated and all the things remains same as before we have given for RS-X. So RS-X an RS-Y have been set then press ok.

6. Define the load combinations as per our requirement.

7. Before doing the response spectrum we should check that our joints are fixed if the joints are not fixed the fix the joints.

8. Next step is assigning, so we will select whole structure and we assign the diaphragm to the shell for that we will assign go to shell then assign diaphragms in that select D1 as diaphragm apply. The diaphragm is assigned to the whole structure of the shells such that that will act as a single mass.

9. Then we will go for analysis, we will check the model first because we have did this checking of model before so we will check it again such that all the things are safe or not.

10. Check the model if any warning messages have been generated, if no warning messages are generated then the model is said to be safe and read to run for the analysis.

11. Run the analysis, the analysis will be running it will take some time based upon our height of the structure and number of panels taken for the structure to be analyzed.

12. Once the analysis is completed, we can see the deflection, displacements for the dead load on the screen and we can see that there is a button for start animation.

13. Start the animation, Check the earthquake x and y direction and we will see whether they are moving in proper direction what we have provided for load cases.

14. Next go to display show tables and then go to the mode period and frequencies for checking the time period and frequency values for each mode.

15. Then go to display to show the store response plots. In this store response plots, we can check for maximum story displacement, maximum story drift, story shear, story stiffness, overturning moments etc.., and we can also export the graphs to excel for print the data.

MODELING AND DESIGN

The presence of structural irregularity in a building has a significant impact on its seismic response. The structural irregularity aspect has not been adequately addressed by the codes in formulating the seismic design methodologies. The past earthquake records show that the irregular buildings exhibit a poor seismic performance which shows inadequacy of the seismic design codes based on which these buildings were designed. Therefore, structural irregularity aspect needs to be incorporated in formulating the seismic design methodologies. In this Chapter, the building models with different types, magnitude and location of irregularity have been described at first. Secondly, different analysis methods available to obtain the seismic response have been discussed and based on review of analysis methods a suitable method has been adopted for analysis of irregular building models.

Table 4.2: Geometrical Properties

Type of building	Plan irregularity
Structure type	Ordinary moment resisting frame
No of stories	G+10
Storey height	3m
Column size	(i).450mm x 450mm (ii).230mm x230mm
Beam size	300mm x 450mm
Slab thickness	150mm
Shear wall thickness	225mm

Table 4.2: Material Properties

Grade of concrete	M 25
Grade of reinforcement	Fe 415
Live load	3 KN/m²
Dead load	1.5KN/m²
Wall load	12 KN/m²
Seismic zone	V
Important factor	1.0
Zone factor	0.36
Soil type	Medium
Response reduction factor	5.0
Density of concrete	24 KN/m²

Definition of the building models

The present study adopts building models with different type, magnitude and location of irregularity. The seismic responses of these building models have been compared with that of the regular building model. These building models have been briefly described in following subsections

Definition of the base case

The base case has been represented by the building models without any irregularity in mass, stiffness and strength distribution and may be called as a regular building model. The different forms of structural irregularities have been introduced in the regular building model to generate irregular building models.

Definition of building models with plan irregularity

The present study adopts four building models with different type, magnitude and location of irregularity including one base model. A structure can be classified as vertically irregular if it contains irregular distribution of mass, strength and stiffness along plan of the building.

(a)   Use of columns having s me sizes, [base Model–I]

(b)   Use of columns of differ nt sizes, [Model–II]

(c)   Presence of structural wall on one side of buildings, or [Model–III]

(d)   Presence of staircase or elevator core at one corner of buildings [Model–IV]

Multi storey reinforced concrete building with sa columns model **sizes of** The symmetrical plan dimension of the building is 16 m x 16 m, the floor plans into four bays in X direction and four bays in Y direction. The height of building is 30 m w
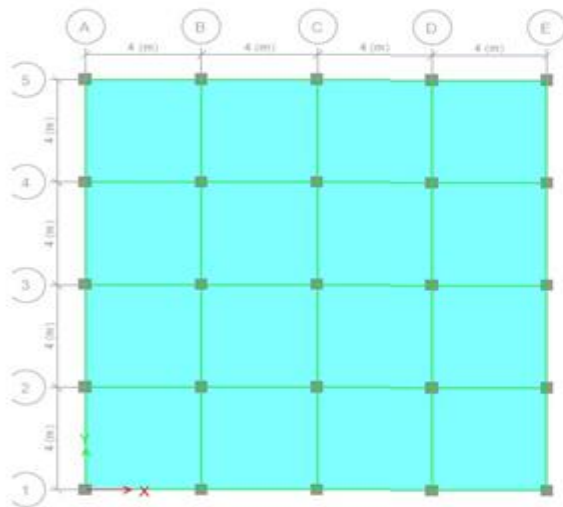
(a)Fig.4.1.Plan view of the model
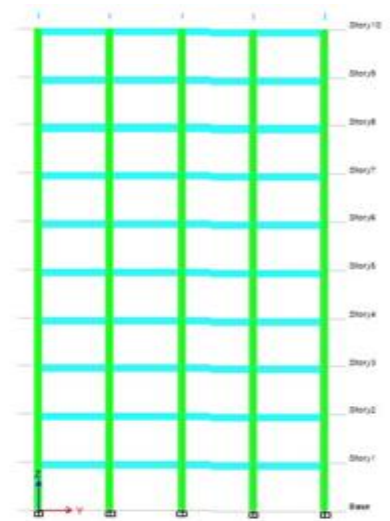
(b) Fig.4.1.Elevation view
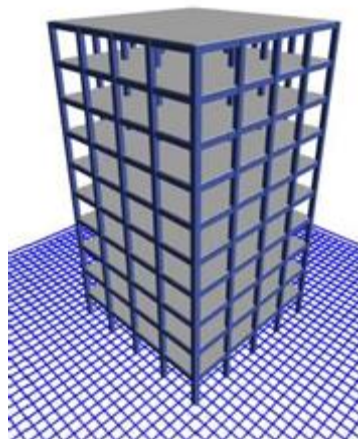
(c) Fig.4.1 Isometric view of the model

.Multi storey reinforced concrete building with different sizes of columns along the plan.

The symmetrical plan dimension of the building is 16 m x 16 m the floor plans into four bays in X direction and four bays in Y direction and having different columns sizes along the plan. The height of building is 30 m with 10 storey level
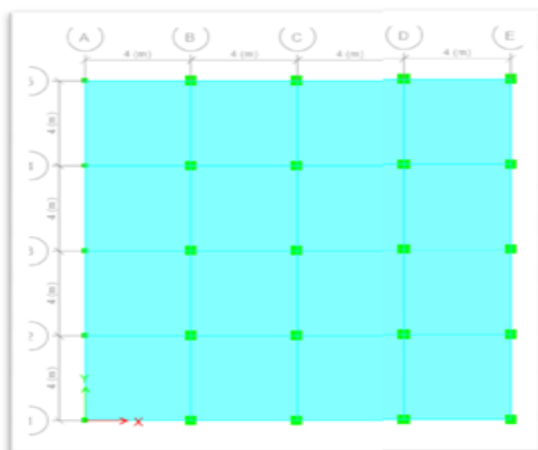
(a).Fig.4.2.Plan view of the model
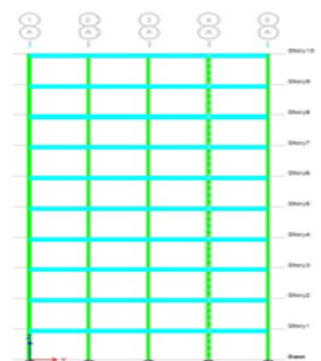
(b).Fig.4.2.Elevation view
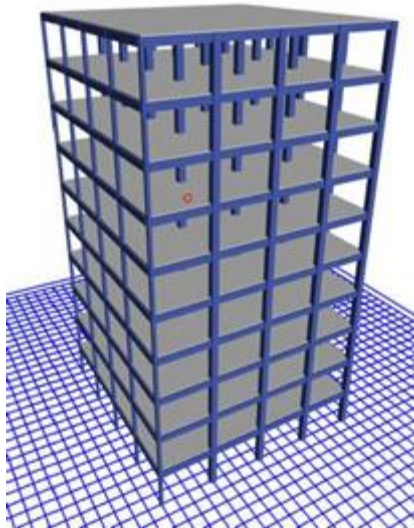
Fig.4.2 Isometric view of the model

Multi storey reinforced concrete building with Presence of structural wall on one side of buildings

The symmetrical plan dimension of the building is 16 m x 16 m the floor plans into four bays in X direction and four bays in Y direction and having different columns sizes along the plan. The height of building is 30 m with 10 storey level
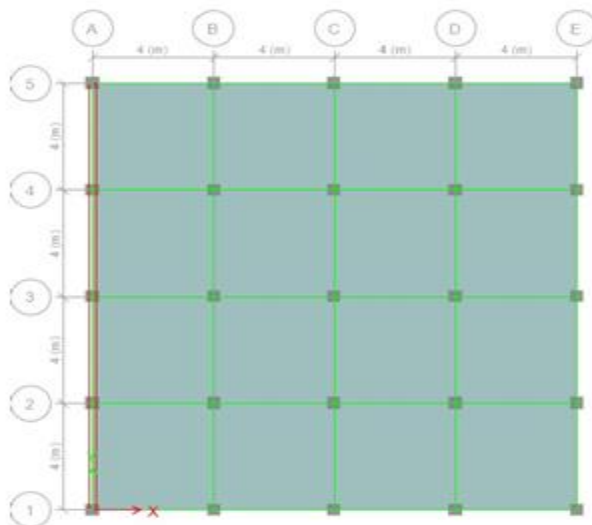
(a).Fig.4.3.Plan view of the model
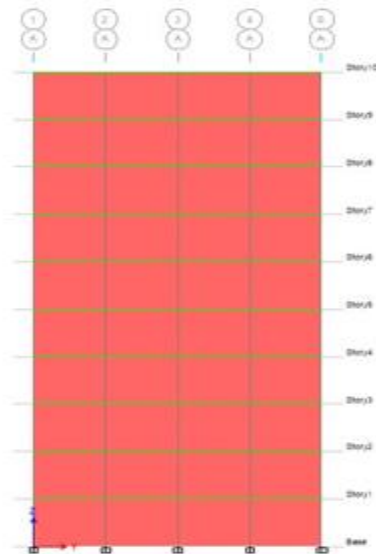
(b).Fig.4.3.Elevation view
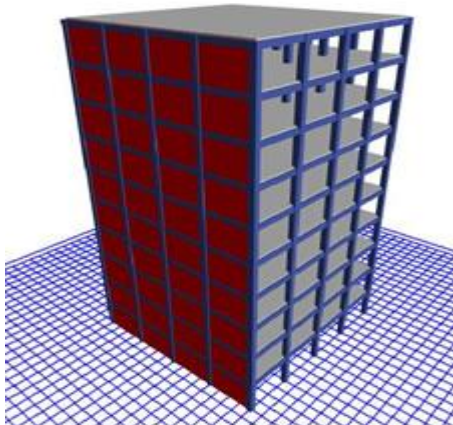
`(c).Fig.4.3 Isometric view of the model**

CONCLUSIONS

In this thesis, study the effect of seismic behaviour of RC building with different irregularities, is presented. Parameters considered are time period (mode shapes), storey displacement, storey shear, storey drift and storey stiffness.

i) Modal analysis is carried out four different structures the maximum time period occur in Model II: (Multi storey building with different sizes of columns along the plan) because of reduction of columns sizes gives lower strength and stiffness to the structure. from the displacement point of view,

ii) It can be said that Model-II building has to undergo large displacement in Response spectrum–Y when compare with Response spectrum–X, because it have high   eccentricity along X-direction.

iii) Model-II building undergoes 96% more displacement in the Y-Direction than X- Direction and it have 36% more displacement in the Y-Direction than base model (model-I) for Response spectrum–Y.

iv) From the story drift point of view, Model-II building gives a large story drift in the Y-direction when compare with other models for Response spectrum–Y, and it have 40% more sway in the Y- Direction than base model (model-I).

v) It can be said that Model-II building has to undergo 95% more story drift in Response spectrum–Y when compare with Response spectrum–X, because it have eccentricity along X-direction.

vi) According to several storey stiffness comparisons shows the plan irregularity decreases 31% of storey stiffness (For model –II) when comparing with basic model, but increase 157% For model –III and 121% For model –IV ,shear wall generates the better storey stiffness to the building.

vii) According to several storey shear comparisons shows the plan irregularity increases 40% of storey shear for model –III, dissimilar structural with plan irregularity decreases 27% of storey shear for model –II compared with other models. The plan asymmetry in this model results in torsion in a building which is due to non- coincidence of centre of mass and centre of rigidity. The eccentricity generated due to other factors like non-uniform distribution of load and difference between the actual and computed stiffness/strength yield of elements which eventually lead to its failure

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ECOPHILIA, ECOPHOBIA, DEATH AND DESTRUCTION IN BHABANI BHATTACHARYA'S SO MANY HUNGERS!

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ABSTRACT

Bhabani Bhattacharya is an adroit Indian English novelist who narrates social realities in his fiction during Partition. Bhattacharya's So Many Hungers! chronicles micro and macro levels of hunger of human beings for food, money, power, status, satisfaction, sex, adventures and patriotism. The novel primarily throws light upon how nature becomes the prime factor of degradation and restoration for the people of Baruni near Calcutta. The author also highlightsdestruction of nature, environment, natural set up and ecology as the narrative is set up in the rural environment.Though the novel does not directly connect with nature, ecology and environment but it explicates human issues related with ecology as the subjects are closely connected with nature, environment and surroundings. The present paper attempts to explore the ecological concord between nature and human beings. It attempts to examine the relationship between the dwellers of Baruni and Calcutta with nature, environment and climate. The paper also attempts to highlight how human hunger exploits ecology, snatching every root and fruit from nature.

Keywords: ecophobia, destruction and ecology.

INTRODUCTION:

Bhabani Bhattacharya's debut novel *So Many Hungers!* was published during the Partition in 1947 which projects multiple manifestations of hunger. The novel showcases the life of Bengali families, agriculture, rural life of Baruni, Civil Disobedience Movement and the dawn of World War II. It narrates famine, scarcity of food, hunger, death and greedy capitalism. It also records vivid tenets of hunger through greed for money, profits through share markets, black marketing, forced prostitution and forced armies to fight wars in foreign lands. The novel also highlights the efforts of characters to return to nature. The affinity towards nature is known as ecophilia which shows the love and closeness towards the ecology. Similarly, the fear and anger expressed through reaction of nature results into ecophobia. The novel opens with the period of the beginning of World War II, wherein human hunger and ambition to destroy civilisations and nations threatening and destroying the environment to a greater extent. The writer touches upon the international issues of ecophobia as the entire world is engaged in war, destroying the peace, nature and lives. The author mentions how Adolf Hitler strikes the world, and, how willingly or unwillingly every nation enters the race of sabotage and destruction of peace and nature. Explosives, bombs and firing by the armed forces destroy nature and natural inhabitation. Gradually, India joins Britain in the War to fight against the Fascist Plague. The Fascists are destroying nature, peace and the best creation of nature-Man. The war against humanity is the war against ecology.

Illustration: Bhattacharya elaborates the character of Devesh Bose, an old man and a staunch follower of Gandhian ideology, as a man of ecology with odd ideas. He has been an active member of Congress Party in the act of Civil Disobedience. He is a retired teacher from a city school who prefers to live in a village away from city life. Ecology of the peasant folks attracts him. His simple way of living projects his Gandhian lifestyle. The author projects Devesh Bose's ecophilic character who embraces the simplicity of peasant life discarding his urban luxuries, "Grandfather, An eccentric. He had odd ideas. Ever since he retired from his work as a teacher at a city school, he had lived by himself in a village, not far from the sea, he had lived like one of the peasant folk…Over seventy, and living a hard life all by himself, remote from his land, with no one to hand him a glass of milk if he ever fell ill!" (SMH 20)

Bhattacharya projects greed and hunger at the stock exchange. The brokers, agents and the clients are busy in buying and selling the shares. It is because of the outbreak of World War II the share market showcases a greater hike. The increase in the prices of shares will ultimately increase demand in the market. The commodities will be produced in bulk by destroying nature. Money becomes the mantra of the greedy generation. Cash and banks play a pivotal role in the share market. The greed for more profits, increased prices of share and the demand for shares indicate destruction of ecology at a higher rate. In other words, the share market accelerates war and also the destruction of peace, harmony and ecology. The writer narrates:

Buy munitions of War. Things that make guns, shells. Buy the materials of a battleship. Buy steels, War eats steel. Buy Tata steels, Bengal Corporation steels. A ton of steel mangles a brigade. A hundred thousand tons

mangle a city. A hundred million tons mangle the earth. Buy coals. Coals to keep the limbs of War warm. Man digging deeper than any animal, tearing the Earth's bowels with iron claws. Buy aluminium --wings of planes need aluminium. Railways, buy Railways. Heavy traffic on wheels, traffic into cash. This is a War on wheels…

Buy at a high premium. See it go higher, higher. Thirty per cent. Fifty per cent. Hundred per cent dividend. Dividend to make Death Machine. Scrap iron hurled from projectiles, a millions tons a month. A million deaths a month. Death into a dividend. Death into a dividend. (SMH 22)

The author amplifies human greed for wealth at the cost of destruction of ecology. *So Many Hungers!* projects the time gap of Rahoul who returns to Baruni, the remote village where Devesh Bose, the grandfather of Rahoul stays in the rural pocket with the pastoral setting. Devesh Bose represents the early generation that worships nature and advocates the preservation of ecology. He has been helping several villagers in their day-to-day life. His being away from the urban life showcases his ecophilia. When Rahoul comes back from the war, he witnesses the natural beauty and the ecological richness. The writer narrates the soothing effect of ecology:

A *madhobi* vine curved arching over the narrow outer portal, great clusters of delicate shell-white flowers blossoming in rich profusion. But the earth was sun-hardened at its roots and the leaves, pale and drooping, seemed to beg for stopped fascinated and pressed, filling his breath with the tender fragrance. That was Bengal—the thought came upon him—so much beauty could grow in such neglect and hardship only in Bengal. (SMH 25)

So Many Hungers! depicts the story of three generations-Devesh Bose, his son Samarendra Bose and his grandson Rahoul Bose. Devesh Bose is reverse Diaspora who prefers to leave Cambridge and join Gandhi in his freedom fighting movement. His act of joining Gandhi in breaking the Salt Laws and imprisonment as a freedom fighter indicates his love for ecology. Salt is a common commodity needed by every citizen as a birth-right. It should be available to every citizen without tax, like the air. The entire village of Baruni worships Devesh Bose for his simplicity of life who becomes one with the lives of peasants in the village. Sacrificing all his mundane pleasures he prefers to stay among the villagers by walking barefoot and eating a very common regular food. This highlights his assimilation with the ecology in Baruni. The entire village, it seems, has been adopted by him. His love and understanding of the village highlights his ecophilia as he loves them in their natural way of living with faith in human values. He explicates to Rahoul, "I have scores of daughters and sons in Baruni. I am proud of my people. They are not bright and knowing and—Civilized!—like you citybreds, but they are good people. Centuries of brute hardship and strain have not destroyed their faith in human values." (SMH 30)The writer narrates the simple and natural lifestyle of Devesh Bose through his food which is an inseparable marker of culture, and, the ecology of the humans who dwell in a specific arena. The writer observes:

We peasants do not have elaborate courses with our rice—fish, meats, curds, sweets—we can't afford them. You'll be given a leaf-plate of steamed rice and lentils, a pinch of salt and a lemon, some baked sweet potatoes and a vegetable curry of sorts, and perhaps some thickened milk in a small brass bowl by way of a luxury. That makes a big festive meal. (SMH 29-30)

Subsequently, the writer introduces Baruni village through Devesh Bose who narrates the ecological set up of the village, especially of the peasants, whose life centres upon rice land and river. They are the children of nature who incline and depend upon ecology completely. They are away from politics, industry, war, share market, money making and destruction of every sort. They represent peace, nature, culture, eco-culture, environment and ecophilia. Devesh Bose explains the types of people staying in Baruni who depend completely on nature and environment who are ecology in itself symbolically:

This is a fair-sized one, our Baruni, not very big, not small. Less than a hundred households. About a quarter of them hold land on lease from the zemindar. Another quarter are landless *kisans,* peasant labourers, who work for their more fortunate brethren, planting the rice and reaping the harvest for a day-wage and meals. A good many are fisher folk. Life centres on riceland and river. (SMH 30)

In both places-the British colonizers and Zemindars exploit the natural right of people and ecology. In addition to this, the war threatens the very existence of human beings on the planet. Kanu, a peasant boy, wants to be a singer like his father. Kanu wants to follow the tradition of his father. This minor instance highlights ecology as the son imitates his father like a sapling develops into a tree. Devesh Bose explains Rahoul the ecoculture of the peasants and their successors, "Kanu has a dream. He would go wandering like his father. He too has the gift of song. But he suffers so from ear-ache, poor boy." (SMH 36) As nature has both the sides-good and bad-Kanu represents the blessing of singing but he suffers from ear-ache as the ecology suffers from something or the

other. Similarly, Kajoli, the sister of Kanu sits upon the ground and unties the shoes of Rahoul. She pours cool water on Rahoul feet to wash off the dust. This indicates Kajoli as a product of nature who soothes Rahoul, a city dweller. Kajoli represents Indian custom and ecology.

The novel, *So Many Hungers!* highlights multiple instances of hunger, greed, destruction and ecophobia. In almost every nation these evils of hunger, greed and destruction are evident working powerfully during the 1940s. The oppressors exploit humans, their houses, their belongings, their freedom and their women. Power or a weapon turns a human being into the destroyer who carelessly destroys everything that belongs to the oppressed. The writer narrates ecophobia through multiple destructions at varied places, "-the oppressed peasants would rise as one man while the Red Army was heard pressed elsewhere, and swiftly bring to an end the system that had confiscated their house and land and liberty, their moral code, their God and their women— the women, it was said, had become communal property like the land itself." (SMH 38)

Further, Bhattacharya presents minutely the parallels of ecophilia and ecophobia through a snippet between Samarendra Bose and an old beggar. Samarendra Bose is taking his car out from the garage and the old beggar is asking for the food grains. Bose offers him a copper coin which he declines and states that the food is important than money. The writer underlines the ecological loss through his ecophobic comment, "A grain of rice, father, only a grain'. Samarendra offered him a Copper, but the white-haired one shook his head with: 'What good is that, father? The goddess is gone from the copper bit, it is an empty shrine. The goddess lives nowhere save in a rice-grain." (SMH 53) Thus, the old beggar triggers the idea of rice mill—a huge public company of Samarendra. Soon, he starts working with his friends and their investments as partners, only to make more profits.

Rahoul while distancing with Kunal states that the alien imperialist admires Indian culture. This shows that the West admires the spiritual heritage and the concord of Indian culture with Indian ecology. The ecophilic approach of the imperialist is evident when Rahoul says, "It's an odd paradox, isn't it, that the alien imperialist is a keen admirer of our culture of the old days. The imperialist applauds our spiritual heritage, our other-worldliness, so that he can quietly rule over us while we have our eyes fixed up on the Beyond." (SMH 56) Rahoul enunciates to Kunal that though the War is threatening human life and science has encroached on every walk of life, the common Indians should learn to rise from the crisis, be resourceful, be fearless and work calmly in the fields. Rahoul's advice assists Kunal to understand how War is bringing a catastrophic effect everywhere. War is ecophobic as it creates sabotages everywhere. The young generation of Kunal is recruited under the guise of freedom, adventure and humanity to exploit and destroy ecology. Kunal thinks, "War was mass murder. You could commit yourself to mass murder with a clear conscience only when you were convinced that you would be ridding the world of some horrid pest. In the name of humanity Kunal and others of his generation were called upon to fight the post in Europe." (SMH 57)

The writer states how the Indian Freedom Fighting Movement supports the colonizers to help in war through Indian army being used in international borders. Indian leaders and also common Indians work against ecology. Bhattacharya brings to light historical events of Indian Freedom Fighting Movement and the World War II with an inherent observation of East-West dichotomies, socio-economic and political problems of the generation that witnesses and takes part in these activities. Environment, climate and nature remain in the background. It is through the scientific advancements, industrialisation, share markets and inventions in science, the writer hints at the ecological concerns like ecophilia and ecophobia. Science and scientific inventions create destructive power. Research in science, no doubt, facilitates human life by making it smooth, easy, luxuries and long, but at the same time, science creates bombs and threatens the ecology. Rahoul states the ecophobic capacity of Science. "The future of mankind was wound up with the harnessing of new sources of energy; and one such source was the cosmic ray proceeding from the stars and continually bombarding the earth." (SMH 69) Bhattacharya also touches upon the contribution of peripheral people in rising against the British rule. But, during the War they make a treaty with the rulers and join them against the aliens, for instance, the author narrates the efforts of peasants in Baruni.

Bhattacharya introduces the efforts of Kanu who attempts to preserve ecology by discarding the government rule. Kanu is a thin peasant teenager who joins many other peasants and fishermen to save their boats. He explains how the businessmen exploit the fishermen to catch fish. Therefore, he tells the fishermen that the river is the highway for them and the boats are the limbs. Boats are, "They are our blood and bone and heart and soul and all." (SMH 75) This indicates the oneness of the fisher folk with ecology. Fish becomes the driving force for life. 'No fish, no clothes for you, you go naked.'(SMH 75) This indicates the need of ecology for the fishermen for survival and development. The agents exploit them, therefore, in the darkness Kanu helps the

fishermen to steal a boat for fishing and sell the fish into the market. Darkness, water, boats and the sailing become an amalgamation of ecophilia and ecophobia:

'Darkness too for the peasant folk. With no boats how shall we move harvests upriver to the market-place? And the islets in the river, *han*? The islets become water-bound prisons…'

They jumped into shallow water. Now was the hardest task of all. They must drag the boat up as far as they could to screen it with the deep over-hanging shadow of bamboo and brushwood. Sun-warm water rose to their waists and pride in their loincloths. (SMH 75)

The author discusses how the boat wrecker reaches in the dark to take away the boat of the fisherman and Kanu. It is the Japanese who have appointed boat wreckers so that no boat will be left in the village. The fishermen are supposed to sell their boats to the government with a bond. The boat is everything to the fisherman. The fishing stops. Modernisation distances fishermen from their traditional tasks. Sadness prevails everywhere and Kanu hums a folk song to himself that highlights ecophilia:

'Make a hymn, make a hymn!

As stars and moon and sun make the hymn of light.

As flowers make the hymn of hue.

As birds make the hymn of melody,

Spirit mine, make a hymn, make a hymn.' (SMH 78)

Further, the author narrates the hunger of intermediaries and rice agents who visit every peasant to buy the rice at a cheaper rate. Even after the government has purchased the rice, these intermediaries tempt the peasant to sell off every grain that the peasant has. This highlights the extreme exploitation of peasants. Similarly, the Japanese soldiers encroach the lands and it is the urban dwellers who oppose the atrocities of the Japanese. The rural folks are unwanted there. In this instance, the Japanese soldiers exploit the ecology by capturing the land and cattle of the peasants. The landless peasants are forced to vacate their ecological set up. Armies destroy the ecoculture and peace. Subsequently, the police also represent ecophobia as the Civil Disobedience Movement in Baruni reaches its peak and the activists are captured, jailed, lathi charged and shot dead. Devesh Bose is captured and put into jail in Dehra Dun. People are moved out from their homes by the military. The entire ecology of the rural arena is destroyed. Bhattacharya narrates the ecophobia:

Villages were going to pieces all around. Many had been taken over by the military as strategic bases to post troops, build airfields. The brick houses of the well-to-do had been acquired on rent, the mudhuts of the poor purchased outright. The people had been cast out of their homes. How would they find new homes even with cash in their waist-cloth, the price of their ancestral roofs? And where find land for the plough, since the land too was gone? Cultivation would fall off with so much land out of use. Parts of the coastal zone were being evacuated lest the Japs should come and make use of the man-power at hand. Groups of the dispossessed were passing through Baruni, wandering about, men, women and children, with their cattle and possessions, homeless, aimless, dazed by the sudden evil turn in their fate. (SMH 88)

The author shows the hunger for power with the British rulers in India. And at the same time, the shopkeepers and businessmen who struggle to get more rice from the peasants. The shopkeepers and businessmen represent the rise of Neo-colonialism, as they follow the footsteps of the colonizers in exploiting the peasants. Peasants, the true children of ecology, are exploited from both sides. Many shopkeepers visit peasants in their fields to get rice during harvest. Thus, business pollutes the ecology and eco-culture. In addition to this, power struggle at international level destroys the ecology of villages. The author minutely satirises the ecophobia, "…villagefuls of folk were on the highroad beyond the railway track-people, cattle, all homeless, landless. For more airfields grew, British fields American fields, More villages were scorched. A wave of wanderers would turn from the highroad once in a while and pass into Baruni." (SMH 111) The store man promises everyone with some or the other temptation so that the peasants should sell the rice. For instance, he promises a blue ribbon for Kajoli's hair and a white rubber ball to Onu, the young child.

Bhattacharya's *So Many Hungers!* vividly explicates the beauty of nature, environment and the paddy fields during the harvesting time. Life in rural areas during harvest is full of happiness and vibrance. Similarly, the peasants become one with the ecology, inseparable from the ecosystem and eco-culture of rural Baruni. During harvesting Kishore with Kajoli observes, "He cast his eyes over the yellow acres, and figures of men reaping. He smelt the rich earth, his lungs filling. His eyes came to rest them on the one who was a daughter of earth,

with the earth, with the earth's mellowness, the earth's exuberance and rich yielding." (SMH 124) The writer showcases how the rural ecology is drained by urban exploitation due to the increasing demand for rice, grains and animals. The markets have no rice, as the rice is either hoarded or supplied to armed forces. The rules in the villages became more stringent. The farmers begin to sell off their animals as they fail to provide fodder. Several peasants are made to leave their homes and land, as the army requires it. Consequently, Kishore leaves Kajoli and begins to go to Calcutta to get some source of earning. As he walks on the railway station, the special and armed guards posted at different places to salute His Excellency shoot Kishore at the railway station. Kajoli, her mother and Onu do not know that Kishore is shot dead. War brings calamities in troops. These calamities are not for the armed forces alone but for the common people also. Starvation becomes a greater threat to human survival. Lack of food kills several people. The scarcity is man-made that destroys the ecology and eco-culture of Baruni. The phobia of death rules the rural sites devouring several lives. Bhattacharya writes:

…a lone straggler on the eastern seaboard stumbled, fell down and never rose again. He had died for lack of food, so it was reported, and the brief news flashed past almost unnoticed. A mere beggar. No one then felt that he was a premonition, a symbolic shape of things to come. Other men sank down and died. Then women. Finally, children. Husbands and sons had tried to shield with their blood and bones the dear ones at home, and failed. All were decaying together. (SMH 145)

The author chronicles minutely how Kajoli's family struggles to survive during such time. Kajoli plants egg-plants and vegetables in her plot. Beans and lady's fingers and the pumpkin vines spread on the roof thatch. The family struggles to get different bits of food from various sources to survive. As there is no rice left in the home, majority of peasants search for various alternative ways of getting food. Nature and the environment through ponds and trees provide sources of food to their starving peasants. The writer narrates ecophilia, "All day she went about with Mother and Onu, collecting odd bits of ford: Shrimps from the ponds and water-weeds, green wild figs from the tall trees; buries and soft edible roots from wasteland. But the whole village, from dawn to dusk, was rapt in the same pursuit, and the stocks of nature's free food fell off every day." (SMH 153) Further, the writer is keen in narrating ecophobia as a colony of ants destroys the crop of egg-plant nourished by Kajoli. Gradually, Mangala, the hungry cow eats the tendrils with green leaves spread on the thatch. Animals thus destroy the ecology created by humans. Even the children search for food throughout the day. For instance, Onu climbs very high on the topmost branches of the fig tree to get more figs. As he gets down, his own friend attacks him to take away the booty. Onu fails, gets hurt but finally helps his own friend by giving him the figs. The children also get the blows of nature. The writer examines ecophilia and ecophobia as ecology feed the children and the same ecology punishes them by breaking their bones and injuring them. In an attempt to climb higher, they fell down and break their legs. Ecology avenges humans. The writer narrates, "Or broke his legs and became a cripple like old Hari, who too had fallen from a tree— doomed to drag himself about on crutches? These days he could not climb to the tree top with his old ease because of his gnawing hunger and weakening—his hands shook, his head dizzled, his eyes dimmed, and he had to grip hard lest he fall." (SMH 162)

Life in Baruni turns into a dystopia, full of despair and death. People live on wild roots and herbs. Everyone is caught into such a situation where there is no escape. On the other hand, Kajoli's mother takes Mangala for grazing. Mangala gets enough green grass to feed her starved stomach. While returning home, Kajoli's mother sells the cowbells and in barter she gets some rice. She is very happy but she has to give away her rice and the cow to a woman who is burying her young baby boy alive as she could not feed him. This pathetic condition expresses both ecophobia and ecophilia about the young mother and her child. The writer reports:

The woman turned aside and picked up the bare-limbed baby boy, rocking him in her arms as he whimpered faintly, and coaxing, warm and tender: 'No more hurt in the belly, my sweet one, my godling. You will sleep.' And she laid the child in the trench, folded his reedlike arms over the bony chest and pushed the eyelids down as though to put the child to sleep, and then with hurried hands she began to pile the earth back into the grave.' (SMH 167)

This account of burying the child alive by its own mother underlines both ecophobia and ecophilia—as the child is starving and cannot get food to survive, the mother therefore, decides to bury the child and close the agonies of starvation in the ecology. Nature, thus, symbolizes a soother to the sufferings of humans. Observing this, the peasant mother offers the fisher's wife rice and the cow so that the baby can survive. Here, the peasant mother rises as a symbol of ecology who offers food and milk and hope for survival for the fisher's wife and the child. She sacrifices her own rice which she has got by selling the cowbells for the survival of Onu and Kajoli. The cow and the rice are the means of her family's survival which she sacrifices without spending a minute. In doing so, the peasant mother magnifies her image as a universal mother and nature who sacrifices her own

comforts and means of survival for others. Further, Bhattacharya chronicles the plight of peasants who migrate to Calcutta in search of food. Peasants in groups leave their villages and walk to reach the city. 'It was the high road which uprooted humanity dragged sore foot toward its destiny.' (SMH 182) Several villages throw away their eco-culture and eco-comfort and rush towards Calcutta. Leaving the villages, their meagre shelters, peasants distance themselves from ecology. Even their tattered houses have a sense of comfort for the peasants. The rags and the poverty of their torn houses remain ecophilic as they provide a comfort zone to the peasants. The peasant mother feels:

It had been agony to leave the house, unutterable agony. Torn from the earth in which lay her roots and the roots of her husband—for though the police had taken him away, his unseen presence filled the house, his singing voice and clear laughter. The house had been their temple, with the sacred tulsi plant in the yard, the image of a god in a niche of the wall, the branch of their ancestors in the air. (SMH 183)

The author narrates how these houses which are temples for the peasants turn into death traps. This also shows their close connectivity with their nature, eco-culture, environment and familial roots. All young men are either in jail or killed. The peasant men left behind are either old or handicapped. They will die in their soil with their wives and children. They cannot escape from their ecology. In starvation it is nature that provides them food. There are hundreds of starving people dying on road due to starvation. The road side becomes the site for corpses being pecked by vultures and crows. It is ecology that absorbs the dead bodies and cleans the dirt in the course of time. The writer narrate ecophilic attitude as the rotting dead bodies wither in nature slowly:

Corpses lay by the road, huddling together. Picked to the bone, with eyeless caverns of sockets bits of skin and flesh rotting on nose and chin and ribs, the skulls pecked open, only the hair uneaten— fluffy babies hair, men's hair, the waist-long hair of women. A family group had sunk into sleep; and beyond the sleep—vultures. (SMH 188-189)

Subsequently, the author observes how ecology does not accept man-made things. No doubt, the dead bodies perish in nature but the man-made things and human possessions remain behind which do not dissolve in the atmosphere. The writer through cynical lens states, "Petty possessions lay all about: earthenware pots, women's combs and tiny wooden vermilion cases and nick-nacks, shabby rag dolls, toys, quilts, pillows. Even in their homeless wandering some people had carried pillows." (SMH 189) The writer narrates his concerns for ecology as the peasant mother does not prefer to travel by train to Calcutta. She prefers to go bare feet, walking for days together. In other words, she remains sticking to the ground and not to machines. Gradually, on their way, they eat roots and reside on the road sticking to one another. They are aware of jackals, vultures, scorpions and snakes. Still, they remain huddled together to comfort each other and remain alive. Ecology, thus keeps them alive though it is threatening like a nightmare. The writer explicates the ecophobic and ecophilic acts of the peasant mother and her children:

When night deepened they ate the left-over roots with some grains of rice they had boiled at daytime and lay down under the outspread of an old tamarind, and they too, like the corpse groups, huddled together for warmth and for comfort in one another, and Onu wrapped an arm round. Mother and Kajoli too. The pitch-black night hung heavy on them, weighing on their spirits. Owls booted and jackals shrilled in unison— scores of them seemed to be about. (SMH 190)

Environment and nature remain the same though they are exploited by the hungry generation to their fullest extent. Nature pleases and threatens. During the night in an unknown place with death around, people are on the threshold of death. In such a threatening situation, nature provides a glimpse of hope and happiness to the peasant mother. The writer narrates ecophilia as a temporal relief to the worried mother in the dark, in the form of fireflies. The author narrates, "Deep in the night a great swarm of fireflies sprang up suddenly, glimmering about, a myriad sparks. The mother gazed and her heart was comforted with the tender beauty and it was as though the tiny points of light were a sigh, a message from the Image of Light." (SMH 190-191)

Starvation becomes the push factor for every peasant migrant to search for food and at the same time it also becomes the pull factor towards death. In both situations it is nature that performs a key role in the survival and death of humans. In the course of time, Kajoli comes across a pathetic condition of a woman who is starving and is being attacked by a jackal. The jackal is eating the meat of her body though she is alive. This instance projects the terrible side of the ecosystem and eco-culture of carnivorous animals. The writer narrates, "A woman lay stretched by the tree trunk groaning, while a jackal crouched and ate her body. The jackal saw Kajoli, grunted and slunk off, unhurried. It paused a moment, turned, then walked off with another grunt." (SMH 192-193)

Bhattacharya shows how starvation pushes sensitivity on the back put as the peasant mother and Kajoli take the jackfruit for eating though the jackfruit is near the corpse of the woman being eaten by the jackal. This instance magnifies the rule of ecology that survival of the fittest wherein these two women prefer to survive than to pay homage to the dead woman. Consequently, the writer, time and again, narrates that ecology is exploited by thousands of hands by turning the soil in search of roots and edible leaves of plants. Famine pushes people to commits suicide as there is not a single food grain left in the home to feed the family. The media reports that a mother tries to drown her three children into the Ganges as she is unable to feed them. Here water becomes both ecophilic and ecophobic—ecophilic because it relieves from the pain of hunger and starvation; and, ecophobic as it kills them. The author reports how ninety thousand villages of Bengal are affected by the famine. The novel is a chronicle of a physically shattered race who struggles to survive. In other words, majority of rural human ecology is dying with devastated rural eco-culture. Further, the author goes to the extreme of narrating how a mother behaves against her nature as she does not care for her dying child while she is eating. Instead of giving food to her baby she devours it. With the dead child in her lap the mother eats the food. The writer attacks the ideal image of mother and her sacrifice. In this instance as survival becomes the necessary motto of life, the writer observes:

She has recognised her dead child, for the image of him ever fills her eyes, and though she cannot see herself in the evil shape in the picture, she knows it is none other. There she is, a mother filing her hunger-swollen belly while her skeleton child looks on beggingly. He died. Maybe, those mouthfuls would have saved him. A monster that ate its birth child. (SMH 251)

CONCLUSION:

Bhabani Bhattacharya's *So Many Hungers*! deals with the nature, environment, ecology, fear, anger, hunger, destruction and death. It explicates how the common people experience hunger at variant levels. The man-made draught pushes the rural lives for a toss. The uncertainties of life, the rule of death due to starvation become the common sites in the narrative. Rural life suffers and so also the ecology as the entire human race ravishes nature and ecology for satisfying the perpetual hunger. The urban, political and ambitious people in the narrative become the driving force behind the ecophobia, destruction of ecology, devastation of nature and decline of rural lives. Still, it is ecology that supports human lives to survive.

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SOLAR ENERGY IN HARD WATER DISTILLATION

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ABSTRACT
The rapid developing countries like India is focusing on entire utilization of solar energy due to availability throughout the year and saving the import expenditure of crude oil. Currently solar energy is harvesting for solar PV lights, solar lamps, solar water heaters, solar lanterns and solar cooker etc., by the people in India at a relatively lower cost. The present study is based on fabricating a simple model of a water purification/distillation system by utilizing solar energy. Apart from this, the study concludes the design part is a combination of solar dish vessel (SDV) and solar water heater (SWH) to produce the purified/distilled water with a high distillate and daily productivity. The experimental study has been conducted in Academy of Maritime Education and Training Deemed to be University, Chennai. The daily productivity of collected distilled/pure water is found around 6.4 litres per day in full sunshine hours for an approximate measured pH of 8.2 and total dissolved solids of 800 ppm. The expected payback period is calculated around 1.5 years in respect of the present system. The design and experimental result of the solar based water distillation system is presented in this study.

Keywords: Distillation, Solar water heater, water purification, solar energy harvesting

INTRODUCTION
Water is a well known commodity in huge amount and imperative ingredient in nature, which has been depleting fast. This has been one of the most important elements for mankind, but it has been a tragedy that there has been depletion of fresh water resources [1]. It is the major constituent of life of all creatures as well as for vegetation and sanitation. The worldwide daily demand of the fresh water is increasing day by day and seems to be increased with time. It is been observed now only one option that purification of water using some sustainable technology. Of course there is many methods are available to purify water, but there is a need of sustainable technology, which may not cause any harm to the environment. Solar based technology is one among the technology since no pollution, available throughout the year with not many worries [2,3,4]. Water purification has become an important issue for the scientists. Many scientists sincerely attempted to develop new technologies in this sector. The researchers have also decided to focus on this issue due to the requirements of the mankind and its importance in the future. In India too is promoting solar energy products by introducing various solar promotion schemes such as Jawaharlal Nehru Solar Mission (JLNSM 2010), under this the Government of India has installed many solar projects at a low cost in solar energy parks, PV rooftop systems, solar lantern, etc., at various locations in the various states of India for a greener environment and to save the import of crude oil [5].

The present paper is focused on a unique combination of a SDV and SWH to produce purified/distilled water with a high rate of distillation and productivity. Solar distillation apparatus/solar stills are is a simple in design and construction used to obtain the distilled water and occupies a large space for higher productivity [6,7]. Based on experimental research, where the research objectives have been well defined and discussed in terms of water purification through solar rays using evaporation and condensation of water to separate it from impurities. The research process has checked the quality of water through the experimental model and the improvement in quality of water is meeting our level of significance for this research.

Experimental Materials and Procedure
Principle of Solar Evaporation
Water evaporates on heating and condenses on cool temperatures. This principle is the base of designing the present apparatus. The following steps are involved such as

1. The water storage part of the distil is made up of kadappa stone (black colored natural stone material)

2. The apparatus collects solar rays in order to increase its temperature, which results in increase in temperature of water, which results in conversion of water into vapor. The water vapor gets collected near

the upper ceiling and walls of the apparatus and gets converted into water and slowly drops down due to gravitational pull.

3. The apparatus has been so designed that the water is collected separately and this water doesn't mix with the water which is subject to heat treatment.

4. The apparatus has been designed keeping the requirements of the solar evaporator. The material used for this distillation is such that the material is helpful in raising temperature and thereby increasing the water evaporation.

Design of Solar still

The solar still is used to obtain the distilled water and occupies a large space for a higher productivity and is a simple design and construction has transparent glass cover (glazing) enclosing an insulated cabinet of saline/brackish/high TDS water; the structure heats up the water for evaporation design should be as such, where the surface area of the water should be as much as possible, so as to supply more volatile vapors [8].

The side of storage of pure water should have lower height than other corners. The design should be so constructed that, the heat gets concentrated on the surface of water. In the system design, an SDV and a SWH is installed properly on the rooftop of Mechanical Engineering Department in the institution. The tank capacity of SWH is 300 litres, while the hot water storage capacity is 100 litres. A 2 m long pipe (head) is installed over the storage tank for overflow of the supply water. The original experimental setup and schematic diagram have been shown in Fig. 1 and 2 respectively.
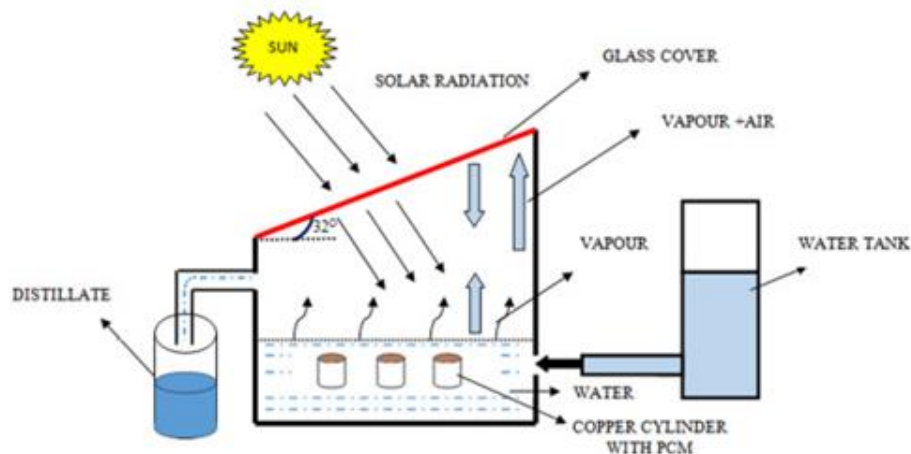
Fig. 1 Solar Distillation

Fabrication of Solar Distil

The principle of the solar distillation may be applied via different structures. Various types of structure cause different efficiencies. Some of the most common structures of solar distillation have been discussed below.

Fig. 2 Solar Distillation Appartus

As shown, these have been the different structures. In all the structures, the system contains absolute plate and has been insulated so as to prefect the leakage of the vapors. In the structure (a), (b), and (d), the condensate channel focus the condensation to flow into the out ward direction, whereas, in the (c) structure the storage of the pure water has been in between the system.

Properties of material used

The common components of the distillation structure is

1. Saline/Hard water storage (Kadappa stone base)

2. Absorber or cover plate (polycarbonate sheet)

3. Carbon block

4. Pure water storage

The insulation in the distillation prevents the leakage of water vapor, as well as the pressure drop so as to increase the evaporation rate. The greater the evaporating rate, the faster will be the process. The insulation maintains the rule of a closed system for the process. The system has been simply insulated by the rubber and glue material. The absorber plate plays the role of storing more heat energy. The energy source for the distillation has been the solar heat via rays. The absorber plate absorbs the heat and keeps it to the system, so as to increase the entropy of the system. The increment in the entropy leads to the formation of more vapors and increases the pressure [9,10].

Materials used in the instruments have been as follow:

1. Base metal – Natural Kadappa black colored stone

2. Glass – polycarbonate

3. Coating – bitumen seal compound

Dimensions

Kadappa black colored stone base: Length-73 cm, Breadth-73cm and Height-24cm

Polycarbonate glass

Triangle: Base-73cm and Isosceles sides-50cm

Pyramid (4 sides): Height-5cm, Base-73cm and Declination of base-8 degree (approx)

Natural Kadappa black colored stone: Natural Kadappa black colored stone is found to be a useful to store raw water for making this type of design. It is of durable material and has the required properties of heat absorption as required in the design.

Polycarbonate: It is identified as polycarbonate material is durable material for the design because the material can be stronger and longer during extreme temperature compared to those of polymethyl methacrylate (pmma, acrylic). Polycarbonate is found to be transparent to visible light, enabling better light transmission in comparison to other available materials.

Bitumen seal compound: During designing the structure, bituminous waterproofing systems is used to protect residential and commercial buildings. Bitumen (asphalt or coal-tar pitch) is a mixed substance made up of organic liquids that have been highly sticky, viscous, and waterproof. The similar material is used to construct roofs, in the form of roofing felt or roll roofing products.

Activated Carbon Filter: It is used in the process of purification by adsorption process and also removing free chlorine from water, in order to make the water suitable for use in various processes in manufacturing or in some other uses. The removal of organic material from potable water, for example, removing humid and folic acid, stops chlorine in having chemical reaction of water with the acids to form trihalomethanes, which is a carcinogenic material [11].

Solar Energy: Solar energy is renewable energy available from solar radiation, which are emitted by the Sun. The photovoltaic is used for the purpose of artificial photosynthesis of extracting this energy from solar rays. At present, there is total photovoltaic capacity of over 300 GW, which is approximately 1.8% of the total world energy requirements. However, the use of solar energy is rising at a very fast rate in countries like India due to its locational advantages [12].

RESULT AND DISCUSSION

The experimental setup of distillation unit has been developed by combining a SDV and a SWH and the present distillation unit is installed on the rooftop. It is notable that η_{therm} of SDV (η_{SDV}) is obtained around 61.2 %, while for SWH (η_{swh}) it has been observed around 73.8%. The SDV is a carrying a pressure cooker type (10 litres capacity) for cooking, which is used here for boiling/pasteurization of water to generate the steam. Copper tubes/pipes is considered as high thermal conductivity and chosen in the material selection.

In the detailed description, the experimentation is carried out on a sunny day on the rooftop and started at 09:30 am and ended at 06:00 pm. The SWH is supplied with 20 litres of hard water and temperature is observed around 45°C in SWH as well as in SDV. The variation of temperature is +/- 5°C, pre hot water is easily available because of "Not-in Use" conditions of the water heater in summers. The water quantity in base container is measured at 12:00 noon and 06:00 pm as 15 litres and 6 litres and the condensate quantity is 4.8 litres and 8.2 litres.

	pH	Electrical Conductivity (microS/cm)	Total Dissolved Solids (mg/L)	Hardness (mg/L)	Yield (litres/day)
Hard water sample	8.7	820	438	71	
Condensate sample	6.8	31	16	9	13.0

FINANCIAL BENEFIT ANALYSIS

The saving through the utilization of a modified high rated condensate unit in terms of money can be estimated directly through the cost of condensate water produced daily and this is around INR 350 per month. However, total setup cost is estimated around a sum of INR 25,000 for making a solar water distillation unit. By eliminating many of the mineral deposits, salts and other impurities, this easy technique provides water a in a pure state. It is also notable that the present system eliminates the use of thermal heat storage medium, which are generally used to enhance the efficiency of solar thermal systems or used for efficiently performing of the said system during the sunshine off hours or in poor ambient conditions.

CONCLUSION

The consumption of fresh water is increasing all over the world, mainly due to the population explosion as well as the rapid industrial growth. In the present study, the efforts has been made to utilize the ideal timing of a SWH and SDV in five different households by combining them into a high rated solar condensation unit. The portable light weight of the equipment has been found to be able to purify water for the domestic applications which meet out daily requirement. The equipment may be easily transported or installed at any place. For working of the equipment it has been observed that the equipment should be properly assembled, the availability of the sunlight has been necessary for the working of equipment.

The design part is black color and is able to maintain a good temperature throughout the day. The equipment has been perfect for additional storage of pure water, but for more quantity and for short duration it has been not suitable. This type of pilot plant has been found to be suitable for the hot desert area where the temperature and sun light have been sufficient. However, it has been not found suitable for low temperature or cloudy places.

It has been observed that the present distillation unit can be used efficiently six hours/day for water distillation for a daily productivity of around 13 litres/day and cost is also moderate and the returnable capital investment is around 3 years. It is also expected to improve the design of solar distil in hospitals/dispensaries, schools, batteries invertors, automobile batteries, factories and especially solar homes.

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SOLID WASTE MANAGEMENT: A CASE STUDY OF KAVALI TOWN

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ABSTARCT:

Solid waste management deals with the control of generation, storage, collection, transfer, processing, and disposal of solid waste. The present paper based on the study carried out on solid waste management practice by kavali town municipality. Improper management of hazardous waste and under the current disposal system. The review of the legal framework indicates that there is a requirement of regulations dealing specifically with solid waste management system in the town. In addition, promotion of public awareness, legislation, financial and economic calculations, strengthen institutional capacity and regulations enforcement and establishment of a proper sanitary landfill are principal remedial measures to ensure proper solid waste management system. The methods of solid waste management identified included open dumping, burning, and burying of solid waste. The study revealed that waste was usually transported to its destination by using closed trucks/vehicles and the frequency of collection was usually done once in a week. The management of solid waste has attained highest importance in this era globally but the practices of basic concepts on waste disposal are often neglected. Awareness on e-waste disposal was lacking and there was an urgent need to rectify this gap in knowledge and practice. The methods of solid waste management identified included open dumping, burning, and burying of solid waste. The study revealed that waste was usually transported to its destination by using closed trucks/vehicles and the frequency of collection was usually done once in a week. Effective solid waste management enhance sustainable development of any city. The present paper encapsulates the demand side interference in the planning process with a critical analysis of the existing solid waste management approach to the urban infrastructure system and finally suggests an alternate planning strategy to the ongoing chaos.

Keywords: Solid Waste Management, e-Waste, sustainable development, waste disposal

INTRODUCTION

Great cities are born of and give rise to great infrastructure. Historically, city planning has been deeply rooted in infrastructure and physical planning. Currently, the links between infrastructure and city planning may be described as numerous but non-strategic and non-comprehensive, even as the bond between infrastructure and cities remains tight. It is the economic and social underpinnings of a society and the life wire of the urban system.

Urbanisation has been a critical phenomenon in the Indian context, especially in the last two decades. With the liberalisation of the economy, urban areas have become the engines of economic growth. It is estimated that urban centres contribute about 60% of India's GDP while accounting for only 30% of the total population. This translates to an urban-rural productivity ratio of 7:2. Over the last fifty years, the urban population in India has grown almost five times while the total population has grown by about two and half times. Such an enormous growth in urban population has put a tremendous strain on Urban Infrastructure (UI) services resulting in a deterioration of the physical environment and the quality of life. It is estimated that over 20% of urban population live in squatter settlements, where access to basic services is extremely poor.

Service	Urban population coverage
Protected water supply	90%
Sanitation	49%
Sewerage system	28%
Low cost Sanitation facility	21%
Solid waste Collection-Metros	90%
Solid waste collection-Smaller towns	Less than 50%

Source: Economic Survey 2017-18.

NEED FOR THE STUDY

An Infrastructure development plan is a guide to orderly city development to promote health, safety, welfare and convenience of the people of a community. The need to focus on the cities of tomorrow is driven by three primary imperatives 1. Migration pattern 2.Regional growth concern and 3.Sustainable expansion of cities. However, the basic infrastructure in the cities has not been able to match with this rapid urban growth and hence

is overstressed. Such development poses serious health as well as economic risks to the entire community. With a restricted resource base, poor institutional capacities, the solid waste management system in India is a big challenge to planning.

The Municipalities and Nagar panchayats that constitute cities in India can be the natural sinks to absorb a substantial quantum of migration thus easing the pressure on larger cities. The need for greater regional equity can only be achieved by planning for the economic development and infrastructure provision in small and medium towns around the country. Therefore, concerted development of cities should be pivot around which the urbanisation of India occurs.

SELECTION OF THE STUDY AREA

Kavali is a town in Sri potti Sriramulu Nellore district in the state of Andhra Pradesh in India. It is one of the municipalities in Nellore district and is the second largest town in the district. Its position exactly between two district headquarters Nellore and Ongole on the **National Highway 45** from Chennai to Kolkata, and on the arterial Chennai-Vijayawada railway line helped its growth, more than the other towns in the district.

The district situated in the Southeastern portion of the state with a costal length of 163 KM bounded by Bay of Bengal on the East. The district was known as Vikrama simhapuri until 13th Century and later it came to be referred to as Nellore. The name of Nellore district has been changed as Sri Potti Sriramulu Nellore District on 4th June 2008.

SPSR Nellore District is one of the nine Coastal districts of Andhra Pradesh, and it is the southernmost one. It lies between 13o 25' and 15o 55' N of the Northern Latitude and 79o 9' and 80o 14' of the Eastern Longitude. It spreads over an area of 13,076 Sq.Kms and these accounts for 4.75% of total area of the State.

BOUNDARIES OF THE DISTRICT:

The district is bounded by the following places and features on all the four sides.

East: Bay of Bengal

West: Veligonda Hills which separate it from Y.S.R. Kadapa district

North: Prakasam District

South: Chittoor District and Tamilnadu

The total area of the district is 13,076 Sq.Kms. The total population of the district as per 2011 population census is 29.64 lakhs. Out of this, the rural and urban populations are 21.06 lakhs and 8.58 lakhs respectively forming 71.06 % and 28.94% of total population. The density of population is 227 per Sq.km. The population of females per 1000 males is 985. The population covered under scheduled Castes and Scheduled Tribe communities is 6.66 Lakhs and 2.86 Lakhs respectively. The decennial growth rate is registered at 11.05% whereas the density of population per Sq.Km has been increased from 204 to 227 in the period 2001-2011.

As regards the working population of the district, there are as many as 10.76 lakhs main workers out of the total population of 29.64 Lakhs. The balance being the non-workers to an extent of 16.49 lakhs. The main workers and marginal workers form 80.2% and 19.8% respectively out of the total work force.

Kavali Municipality was established in the year 1967 as class 3 Municipality. This Municipality is having 40 Election wards with 17 notified and 8 non-notified slums. This Municipality around extent is 22.95 Sq KM the N.H.45 runs through the eastern outer limits of the town. The Railway line which is the longest route in India from Chennai to Howrah also runs through the heart of the town. The town is an educational center and having the Textile Business with familiar to adjacent areas.

CLIMATE AND RAINFALL:

The town is located at 14°55′N 79°59′E/14.92°N 79.98°E. It has an average elevation of 17 meters (56 ft). It is second biggest town in Nellore District of Andhra Pradesh State, India. It is 8 km away from the Bay of Bengal.

The district lies in an area of precarious and uncertain rainfall. As such the climate of the district is generally dry and salubrious. Generally, April, May and June are the hottest months with highest maximum temperature recorded was 41.2 C in May whereas the temperature is low in the months of November, December and January and the minimum temperature recorded was 21.9C in January during 2013- 2014.

The normal rainfall of the district is 1080.5m.m. during the reference year 2013-14, the actual quantum of rainfall received was 758.9m.m. The major portion of the rainfall is received during the Northeast Monsoon period to an extent of 369.6 mm.

DEMOGRAPHIC ASPECTS

As of 2011 India census Kavali Mandal had a population of 1, 40, 453 and the town had a population of 1, 08,768. Males constitute 48% of the population and female's 52%. It has an average literacy rate of 72%, higher than the national average of 59.5%, male literacy is 58%, and female literacy is 65%. 10% of the population is under 6 years of age. The growth of population from 1901 – 2011 is as follows:

TABLE 1.1   GROWTH OF POPULATION 1901 - 2011

Year	Population
1901	8,635
1911	6,380
1921	8,800
1931	10,522
1941	11,969
1951	15,516
1961	20,544
1971	29,616
1981	48,119
1991	65,910
2001	79,682
2011	108,768

Source: Directorate of census operations Andhra pradesh

FIGURE 1.1   GROWTH OF POPULATION OF KAVALI TOWN

Source: Directorate of census operations, Andhra pradesh
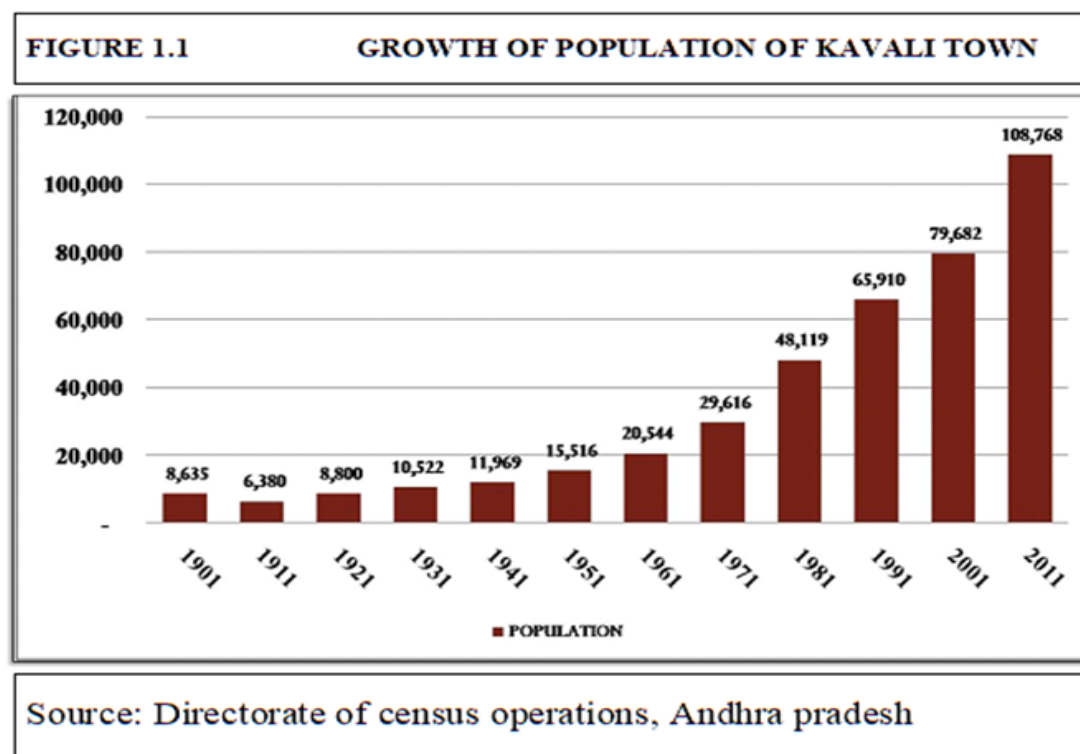
AIM AND OBJECTIVES
AIM
The Aim of the project is to improve the solid waste management system of the town to meet the needs of the future growth and development.

OBJECTIVES:
✓ To study the existing scenario of Physical Infrastructure of the town.

✓ To identify areas of improvement for delivery of urban services.

✓ Enhance public-private-partnership for improving infrastructure and promote planned integrated development of the town.

✓ To propose planning strategies for the effective infrastructure development of the town.

METHODOLOGY

Methodology: 1

In depth analysis for understanding of the existing situation of the town, a study covers the demographic, land use, physical infrastructure aspects like solid waste management

Methodology: 2

Identify the areas for improving infrastructure development of the town. At this stage collection of data related to land use of different periods and analyze the spatial changes, land use pattern, existing physical infrastructure and the same is to understand the services is sufficient or deficient by comparing with URDPFI guidelines and service norms.

Methodology: 3

For understanding of what impedes service delivery and management with the existing setup and what contribute to better service provision for the present and future. Assessing the infrastructure requirement and identify the growth potentials of the town. A study has been carried out for enhancing public private partnership projects through urban local body at this stage.

Methodology: 4

By identifying and evaluate the physical infrastructure and town growth, an attempt of prioritizing the strategies and suggest some recommendations for the existing problems to achieve orderly development in the future.

SOLID WASTE MANAGEMENT

Managing Municipal solid waste: The kavali municipality way:
About 48 million tonne MSW is generated in India. It is expected to reach 300 million tonne by 2047.Percapita waste generation in cities varies from 0.2kg to 0.6kg per kg depending upon the size of population. With growth of urban population varies between 3to 3.5% per anum, the annual increase in overall quantity of solid waste is about 5%.

➤ The new and modern approach to the SWM:

Integration of SWM with other activities viz. sewerage, water supply, health care, engineering departments etc. Emphasis laid on Complaint redressal system, Grievance redressal system, Litter prevention system, Slum up gradation & rehabilitation, Field work, Daily meeting in this regard. Financial Commitment: Equipment, vehicles, communication. Involving citizens: Positive involvement, penalizing truants, creating public awareness. There is a well-placed system for collecting and transportation of solid waste

Primary Collection and transportation

Solid waste generated is collected through the following ways: Sweeping during daytime, Night scrapping and brushing activity, Door to door garbage collection system (fully-privatized), container lifting; littering bins emptied into wheel barrows which are further emptied into containers; mechanical sweeping

2. Secondary transportation

3. Final disposal site: Vertical dumping system, Disposal of E-waste.

It has also set up scientific land fill site through ppp mode is attempting to reduce the inert by treatment of waste.

The activities associated with the management of municipal solid waste from the point of generation to final

disposal can be grouped into the six functional elements.

• Waste generation

• Storage

• Collection

• Transportation

• Segregation & Processing

• Disposal

There are many verities of municipal solid waste such as food waste, rubbish, commercial waste, institutional waste, street sweeping waste, industrial waste, construction waste and sanitation waste. It contains recyclable (paper, plastic, glass and metal etc.), toxic substances (paints, pesticides, used batteries, medicines etc.) Compostable organic matter (fruit and vegetable peels, food waste), soiled waste (sanitary napkins, etc.)

Solid waste management consisting of collection (at primary and secondary sources), transportation and disposal is an obligatory function. To understand solid waste management there are different components viz. generation, composition, storage treatment and disposal.

Quantity of waste generated:

Kavali town generates 55 MT of solid waste per day (considering 250 gms per capita/day) out of which nearly 50 MT of the solid waste is lifted collected, transported and disposed daily. The collection efficiency of the present mechanism is able to collect 91% of the total waste generated in the town. The municipal waste composition constitutes 60 % of the domestic waste, 20 % commercial waste and 20 % of other waste including street sweeping.

Constituents of municipal waste:

Municipal solid waste mainly comprises waste generated from household, markets, commercial establishments, hotels, hospitals, and small scale industries besides mud and sand in the city. It has been assumed that the local residents of towns generate solid waste at the rate of about 250 grams per capita per day on an average. This average generation of solid waste includes local inhabitants (comprising the wastes generated by the resident population, shops and commercial establishments, vegetable and fruit markets, construction and demolition and, hospital wastes – non-infectious and infectious) and the floating population in the city.

Solid waste management in kavali town:

Works as per SWM rules 2000.

Implementation of pin point system

92% door to door collection

Community toilets-2

Total Latrines (Pit system) -20546

Vehicles using for garbage lifting:

Tractors -7

Dumper placer – 1

Autos - 13

Comparative analysis with the UDPFI guidelines:

The insufficient conservancy services in most of the urban centers tend to leave the garbage spread on the roadsides or open spaces leading to unhygienic living conditions. The generation of waste varies from about over a quarter of kilogram in small towns to about half a kilogram per capita in large and metro cities. Some of the problems faced by the municipal council of kavali town in the solid waste management are as follows. Municipal council has not provided dustbins for storage of wet and dry wastes for the clearance through their regular primary collection process. Lack of formal sanitary landfill siteWaste dumping in nallahs and rivers lead to water logging and unsanitary conditions.

PROPOSALS

The vision is to provide adequate, reliable and affordable physical infrastructure facilities in the town by 2031.

➢ 100% solid waste collection efficiency and disposal of waste.

➢ **Solid waste management:**

➢ As per the suggested vision statement for SWM is "Clean and Green city". ULB should make serious attempts to ensure 100% segregation at source through awareness campaigns or the introduction of penalty fees. The current waste dumping practices must be replaced with scientific waste disposal methods.

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CURRENT STATUS OF UNEMPLOYMENT IN NAGALAND

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ABSTRACT

After a year away, Nagaland has recaptured the dubious honour of being India's State or Union Territory (UT) with the highest unemployment rate. Nagaland's unemployment rate (15 years and older) was 24.7 per cent in 2019-20, up from 17.4 per cent in 2018-19, according to the most recent Periodic Labour Force Survey (PLFS). According to PLFS statistics submitted in the Rajya Sabha on August 11 by Union Minister of State for Labour and Employment Rameswar Teli, the overall jobless rate in India declined from 5.8% in 2018-19 to 4.8 per cent in 2020.(Govt. of India, 2019) UT of Lakshadweep was Nagaland's closest 'competitor,' at 13.7 per cent. In fact, during the latest survey (2018-19), Lakshadweep had the highest unemployment rate in India at 31.6 per cent, followed by Nagaland, but it managed to reduce it by more than two-fold to 13.7 per cent. According to the survey, only two other States or UTs, Kerala (10%) and the Andaman and Nicobar Islands (12.6%), have double-digit unemployment rates. All of the states in the North East had low rates, with Sikkim having the lowest at 2.2 per cent, followed by Meghalaya (2.7%) and Tripura (3.2%). Mizoram (5.7%), Arunachal Pradesh (6.7%), Assam (7.9%), and Manipur (7.5%) were the remaining NE states with the highest rates (9.5 per cent). As a result, Nagaland's Worker Population Ratio, or the per centage of people who work, was among the lowest in the country, at 44.8 per cent. It averaged 50.9 per cent in India. According to the ILO database, India's unemployment rate grew from 5.36 per cent in 2008 to 5.65 per cent in 2010, but declined from 5.67 per cent in 2013 to 2019. (5.27 per cent). Following that, it increased to 7.11 per cent in 2020. The global unemployment rate grew to 6.47 per cent in 2020, up from 5.37 per cent the previous year. In 1991, the global unemployment rate was 4.8 per cent on average.

KEYWORDS: Employment, Unemployment, Labour force, Growth, Development, Nagaland

INTRODUCTION

Unemployment is a complicated issue. It describes a scenario in which a person is not gainfully employed as a per centage by dividing the number of unemployed people by the total number of people currently in the labour force1. During a recession, a country's economy normally has an extremely high unemployment rate. Since its discovery in the 1950s, unemployment has been a source of concern in India. Until the first Five Year Plan was drafted in 1950-1951, the Government of India had just a few measures to generate employment during that time. This plan provided the groundwork for overall and sectoral development in the medium term, with the goal of boosting employment and labour force participation. Employment was placed at the centre of the development plan for the first time in the Seventh Five Year Plan (1985-1990). Employment was defined as one of three essential components of state policy in the Ninth Five Year Plan (1997-2002), along with the quality of life and regional balance.

BACKGROUND OF THE STUDY

The Eleventh Five Year Plan (2007-2012) was primarily concerned with "inclusive" growth, with employment as a vital component. As a result, since India's independence, unemployment has occupied a prominent position in the country's development strategy. Despite these efforts, our country's unemployment rate currently stands at 4.9 per cent. The unemployment rate in India is calculated as the number of people actively looking for work as a per centage of the total workforce. For the year 2013-14, rural India's unemployment rate was 4.7 per cent, whereas urban India's share was 5.5 per cent, which is much higher.

In rural India, the male and female workforce proportions are 4.2 per cent and 6.2 per cent, respectively, whereas in urban India, they are 3.9 per cent and 12.4 per cent, respectively. It's worth noting that rural females have a higher employment rate than their urban counterparts, although urban males outnumber rural males. Male unemployment is 4.1 per cent, whereas female unemployment is 7.7 per cent across the country. (Labour and Employment Bureau, Ministry of Labour and Employment, 2013-14). To create jobs, a variety of tactics and plans have been undertaken. Many employment programmes and policies have been implemented to encourage self-employment and assist the unemployed in finding work in the public sector. It is thought that if human resources are allocated strategically and efficiently, India's economic progress can be accelerated.

SIGNIFICANCE OF THE STUDY

In the current market context, this article investigates the causes of unemployment in Nagaland. It also explores the impact of various government policy efforts aimed at reducing unemployment. Because of not only direct economic costs but also social issues such as poverty, acid attacks, violence against women in the workplace, drugs, labour force, inadequate education planning, inappropriate education system, neoliberal economic policy, and various causes of poverty, the government is rightly concerned about creating jobs for youth and rising levels of youth unemployment. This study also proposes some solutions to these pressing unemployment issues. The article also makes some suggestions and recommendations for overcoming Nagaland's current unemployment issue.

REVIEW OF LITERATURE

In the current scenario, India has around 18.3 million unemployed people in 2017 and 18.6 in 2018. It will rem high in 2019 approx 18.9 comparisons than 2017-18 ILO flagship report 2018. In per centage terms, the unemployment rate is 3.5 in 2018. Labour Minister Mr. Santosh Gangawar said in a written in Rajyasabha, on the fears of unemployment in 2018-2019, that no target has been set by the government (ILO Report, 2004; 2005).

Rural areas have a 21.7 % highest unemployment rate comparison to urban areas in India. It is 21.7 centage of 15 to 29 years in rural and in urban areas 18 per cent. Including 6 UT and 29 states, Tripura has the unemployment rate and Gujarat has the least unemployment. Kerala has a high rate of unemployment (about 47.4%) compared to men (around 12%). (ILO Report, 2004; 2005).(Yadav, 2021)

The rates of unemployment in agriculture are falling very rapidly from year to year like 7.5 % in 2004-2005 % in 2014-2015. In a tertiary sector like engineering, medical, laws, the rate of employment is higher than prim secondary sector. Due to the fall of the agriculture sector, most people of rural areas remain unemployed approx 5 Manufacturing sector has20.4 per cent total employment (Chandrasekhar et al., 2006).

Nagaland is one of those states with a tribal population of 89.10 per cent. Nagaland has the highest unemployment rate of any state in the Northeast (Singh, 2018). Nagaland has a high literacy rate of 80.11 per cent (compared to the national average of 74.04 per cent), indicating that the state has considerably more literate men and women than the rest of India (Anon., 2020a)

A person is unemployed if they are (a) not working, (b) currently available for work, and (c) looking for work, according to Bryn and Stroble (2001).

Unemployment, according to Wikibooks (2013), has multiple definitions, one of which being those individuals of the population who are actively looking for job and have not found it within a set period of time. The fundamental flaw with this definition is that persons who grow dissatisfied with their job search and stop actively looking for work are not counted as unemployed, even if they still wish to work.

Unemployment, according to Uzochukwu (2015), happens when people are unemployed and actively looking for job. It is a situation in which qualified persons from numerous countries who are expected to perform one or more functions and be paid by their employers are unable to find work. Unemployment occurs when a person is not employed by any corporation or organisation, despite the fact that they are qualified for the position.

OBJECTIVES OF STUDY

i. To examine the current scenario of unemployment in Nagaland.

ii. To analyze the causes and impact of unemployment in Nagaland.

METHODOLOGY

The study focusing on the recent five years' status of Unemployment in Nagaland and the Secondary data were used. The census report, the reports of Statistical Department Survey Reports and published articles from various Journals and Websites were used in this study. Time Series Analysis has been used to visualize data.

The first Annual Report (July 2017-June 2018) was published in May 2019, and the second Annual Report (July 2018-June 2019) was published in June 2020, both based on the Periodic Labour Force Survey, which covered both rural and urban areas and provided estimates of all important employment and unemployment parameters in both usual and current weekly status (CWS). This is the third Annual Report from the NSO, and it is based on the Periodic Labour Force Survey, which was conducted from July 2019 to June 2020.

PERIODIC LABOUR FORCE SURVEY (PLFS)

Since 2017, the National Statistical Office (NSO) has been conducting the Periodic Labour Force Survey (PLFS) under MOSPI. According to the NSO, the PLFS was created with two key goals in mind: to quantify employment and unemployment. First, in the Current Weekly Status (CWS), it measures labour force participation and employment status over a three-month period for only urban areas; and second, it measures labour force estimates on key parameters in both usual status: principal status+ subsidiary status (ps+ss) and CWS for both rural and urban areas.

The principal status was defined as "activity status in which a person spent a relatively long time (major time criterion) during the 365 days preceding the date of the survey," while the subsidiary status was defined as "activity status in which a person performs some economic activity for 30 days or more for the reference period of 365 days preceding the date of the survey, in addition to his or her usual principal status."(Government of India, 2001)

As a result, while both short- and long-term economic activity are included in the normal status, the PLFS may have overlooked chronic unemployment while including seasonal and disguised unemployment.

UNEMPLOYMENT RATES OF THE YOUTH

As per the PLFS report, persons aged 15-29 years, are considered as a youth. Statement 26 gives the unemployment rates among the youth at the all-India level in 2017-18, 2018-19 and 2019-20.

Statement 26: Unemployment rates (in per cent) according to usual status (ps+ss) for the persons of age 15-29 years during PLFS (2017-18), PLFS (2018-19) and PLFS (2019-20) all-India									
Sector	unemployment rate								
	PLFS (2019-20)			PLFS (2018-19)			PLFS (2017-18)		
	male	female	person	male	female	person	male	female	person
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rural	13.8	10.3	12.9	16.6	13.8	16.0	17.4	13.6	16.6
Urban	18.2	24.9	19.9	18.7	25.7	20.2	18.7	27.2	20.6
rural+urban	15.1	14.6	15.0	17.2	17.7	17.3	17.8	17.9	17.8

UNEMPLOYMENT RATE AND WORKER POPULATION RATIO IN NORTHEAST*

State	Worker Population Ratio			Unemployment Rate		
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
Arunachal Pradesh	42.3	40.9	44.3	5.8	7.7	6.7
Assam	43.7	43.4	43.2	7.9	6.7	7.9
Manipur	42.5	44.3	45.5	11.5	9.4	9.5
Meghalaya	62.3	61.8	58.6	1.6	2.7	2.7
Mizoram	46.4	54.6	50.7	10.1	7.0	5.7
Nagaland	**32.8**	**38.1**	**44.8**	**21.4**	**17.4**	**25.7**
Sikkim	58.7	61.1	68.8	3.5	3.1	2.2
Tripura	42.0	41.9	49.6	6.8	10.0	3.2
ALL INDIA	46.8	47.3	50.9	6.0	5.8	4.8
*15 years and above						

Source: Statistics presented in the Lok Sabha on July 19 by the Union Ministry of Labour and Employment, using the Periodic Labour Force Survey (PLFS) conducted by the Ministry of Statistics and Programme Implementation.

The Union Ministry of Statistics and Programme Implementation (MOSPI) released the PLFS (2019-20) on July 23, which revealed the magnitude of Nagaland's unemployment. According to the report, Nagaland's percentage of unemployment according to typical status (ps+ss) in the age range 15-29 years was a staggering 70.1 percent. During the same time period, the overall rate in India was 28.7%. Meanwhile, in Nagaland, nearly two-thirds of individuals classed as employed, or 66.8%, stated that they were "self-employed," compared to the national average of 53.5 percent.

In Nagaland, 24.4 percent of employed people receive a regular wage or salary, compared to 22.9 percent across India. In Nagaland, 8.8% of workers identified themselves as casual workers, compared to 23.6 percent

nationally. According to the MoSPI, the survey in Nagaland covered 72 villages, 576 homes, and 2425 people in rural regions, and 55 blocks, 440 houses, and 1850 people in urban areas.

THE STATES*

(Unemployment rate in % for persons of all ages according to usual status (ps+ss) approach during 2017-18)

Highest Rate	Nagaland 21.4	Goa 13.9	Manipur 11.6
Lowest Rate	Meghalaya 1.5	Chhattisgarh 3.3	Sikkim 3.5
Female, highest	Nagaland 34.4	Goa 26.0	Kerala 23.3
Female, lowest	Meghalaya 1.9	MP 2.1	Rajasthan 2.3
Male, highest	Nagaland 18.3	Manipur 10.2	Delhi 9.4
Male, lowest	Meghalaya 1.3	Sikkim 2.6	Chhattisgarh 3.3

*Excluding UTs other than Delhi

Source: Periodic Labour Force Survey 2017-18 via Ministry for Labour & Employment (reply tabled in Lok Sabha)

According to numbers presented by the administration in Parliament during the current session, Nagaland has the highest unemployment rate of 21.4 per cent, while Meghalaya has the lowest at 1.5 per cent. The Periodic Labour Force Survey for 2017-18, which has previously been reported on in other ways, reveals significant differences between states. Goa and Manipur, in addition to Nagaland, have significant unemployment rates.

The states of Chhattisgarh and Sikkim have the lowest rates. When Union Territories are factored in, Nagaland still comes out on top, while Dadra and Nagar Haveli replaces Meghalaya at 0.6 per cent.

UNEMPLOYMENT RATE IN USUAL STATUS (PS+SS)
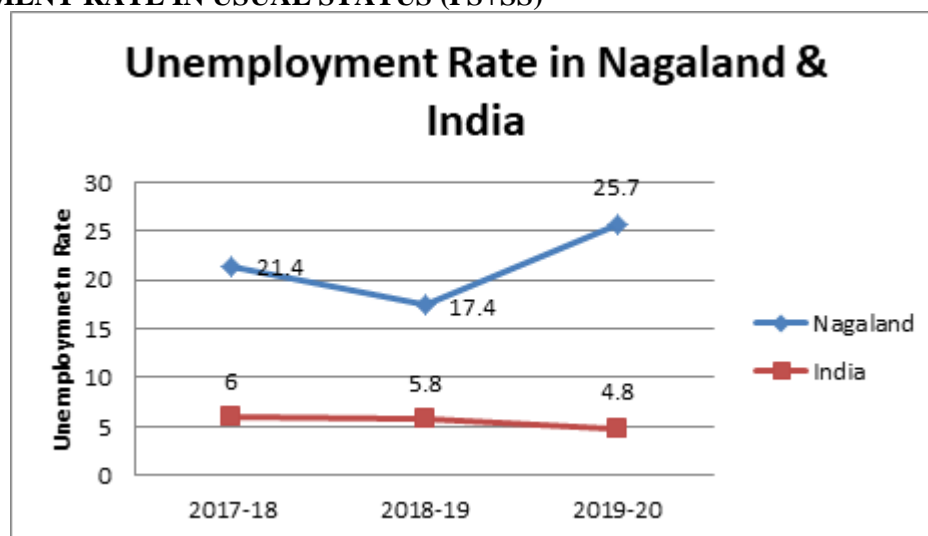
In India, the unemployment rate was 5.8%. In rural areas, it was 5.6 per cent for males and 3.5 per cent for females, whereas, in urban areas, it was 7.1 per cent for males and 9.9 per cent for females. In India, the unemployment rate for educated (highest level of education secondary and above) people aged 15 and up was 11.0 per cent: 11.2 per cent in rural areas and 10.8 per cent in urban areas.

During 2018-19, the unemployment rate for rural male youth (ages 15 to 29) was 16.6%, while the rate for rural female youth was 13.8 per cent. In 2017-18, the unemployment rate for urban male youth was 18.7%, while the rate for urban female youth was 25.7 per cent.

CAUSES OF UNEMPLOYMENT

i.   The working population has low or no educational and vocational capabilities.

ii.   Inadequate state backing, legal difficulties, and a lack of infrastructural, financial, and market linkages to small/ cottage industries or small firms make them unviable due to the cost and compliance overruns.

iii. Due to a lack of requisite education/skills, a large workforce is linked with the informal sector, which is not included in any employment data. Domestic assistants, construction labourers, and so on.

iv.   The material taught in schools and universities is outdated and does not satisfy the industry's current requirements. This is the primary cause of structural unemployment.

v.   Inadequate infrastructure growth and poor manufacturing sector investments have limited the secondary industry's employment potential.

vi.   Low agricultural output, along with a dearth of alternative employment alternatives, makes the transition from basic to secondary and postsecondary education challenging.

IMPACT OF UNEMPLOYMENT

i.   The issue of unemployment leads to the issue of poverty.

ii.   Young people who have been unemployed for a long period engage in unlawful and unethical acts in order to make money. As a result, there is a rise in crime throughout the country.

iii.   Antisocial elements can easily recruit unemployed people. This causes people to lose faith in the country's democratic values.

iv.   Unemployed persons frequently become hooked to drugs and alcohol or attempt suicide, resulting in a loss of human resources for the country.

v.   It also has an impact on the country's economy, as the workforce that could have been productively employed to generate resources instead becomes reliant on the remaining working population, resulting in increased socio-economic costs for the government. For example, a 1% rise in unemployment diminishes the economy by 2%.

CONCLUSION

Since it was first acknowledged as a problem, the unemployment situation has dramatically improved. The government is putting in place various measures to boost employment rates, and it is succeeding to a large extent. The success of policy measures is measured by the participation of women and marginalised groups. Skill development programmes have become increasingly popular across the country. The amount of employment can be greatly enhanced by properly enforcing the techniques stated above. According to a study, India's jobless rate reached its greatest level since 1991 in 2020, when the coronavirus outbreak brought the economy to a standstill. As the pandemic took many lives in March of last year, the country experienced one of the hardest lockdowns in the world, with severe limitations on transportation and economic activities across the board. According to research by the Centre for Economic Data and Analysis (CEDA) based on the International Labour Organization's ILOSTAT database, India's jobless rate climbed substantially from 5.27 per cent in 2019 to 7.11 per cent in 2020.

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STATUS OF WOMEN EMPOWERMENT IN NAGALAND

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ABSTRACT
Women are supposed to be able to accomplish everything they desire in today's world, yet they still confront gender discrimination in the form of inequality, favouritism, and men suppressing their voices. This paperwork summarizes the need for the upliftment and empowerment of women in Indian society, where for a long time women have been considered to be the inferior gender and are not provided equal opportunities and working conditions as compared to that provided to men. To know the status of women, an understanding of empowerment is necessary. Women always have a deliberate role to play in society which leads to the development of the economy. The goal of enlightens the Nagaland state will be achieved only if women are brought up to a level where they can participate in all walks of life. The goal of economic equality can be achieved through women's involvement in the process of empowerment. The objective of the paper is to analyze the status of women's empowerment in the Nagaland state. Further, there has been using of secondary data from reliable and authorized sights in support of this paperwork. It has been revealed from the data that more awareness generation is required towards achieving the desired goal of women's empowerment.

Keywords: Women, Empowerment, Literacy Rate, Workforce Participation Rate, and Decision Making

INTRODUCTION
Nagaland is a North Eastern state with a land size of 16,579 square kilometres, accounting for 0.50 percent of the country's total land area. The states are bordered on the north by Arunachal Pradesh and Assam, and on the south by Manipur. They are located between 25o10' N and 27o4' N longitude and 93o15' E to 95o6' E longitude. In the east, it shares an international boundary with Myanmar. Nagaland is made up of a short strip of mountainous region that runs northeast to southwest, with the Assam plains to the north and northwest. The state is drained by a number of significant rivers, the most notable of which is the Barak River. The yearly rainfall ranges from 1,800 to 2,500 millimetres, while the annual temperature ranges from 21 to 40 degrees Celsius.

The state is divided into 11 districts, all of which are tribal or hill districts. Nagaland has a population of 1.98 million people, accounting for 0.16 percent of India's total population, according to the 2011 census. Rural and urban populations account for 71.14 percent and 28.86 percent of the total population, respectively. The state's tribal population is 86.48 percent (Types & Area, 2012). The State's population density is 119 people per square kilometre, which is significantly lower than the national average. The total livestock population was 0.91 million according to the 19th Livestock Census of 2012.

As a result, at the UN's third international conference on women in Nairobi in 1985, the notion of women empowerment was established. Women's empowerment is a long and winding road from wrong to right. Women's empowerment was defined during the conference as "a redistribution of social and economic power and resource control in favour of women." In simple terms, women empowerment refers to the process of empowering females around the world by giving them the authority to make their own decisions and having those decisions accepted by society, as well as giving them equal rights with no limitations or restrictions on the opportunities that come their way, whether in the form of education, profession, or lifestyle, among other things.

Women's empowerment refers to activities that help raise women's standing in society, such as awareness campaigns in all sections of the country, universal education, self-development training beginning in primary school, and so on. In today's environment, the state's socio-economic setup is not conducive to general progress. Because it is a multi-ethnic state with many cultural roots, it has been plagued by insurgency and ethnic warfare for the past three decades, threatening not just its economy but also its social structure. Women are the ones that suffer the most as a result of this procedure. When it comes to social conventions and cultures, Nagaland is devoid of any.

LITERATURE REVIEW
Women's empowerment is a scenario in which women are given the opportunity to actively engage in all aspects of life, including social, political, and economic (United Nations, 2010). Women's empowerment requires building an

environment that allows them to execute government and organisational policies that affect their lives (Chattopadhyay, 2005; Aspy and Sandhu, 1999; Patricia et al, 2003). Women's empowerment is the process of moving from being oppressed to being equal to both the oppressor and the oppressed in terms of social, political, and economic status (Chattopadhyay 2005). When the concept of empowerment is applied to women's social, educational, economic, political, and psychological empowerment, it becomes clearer. Women's social empowerment addresses gender imbalances that exist in society between men and women (Srivstav, 2001; Mira Shivaa, 2001). Women's empowerment simply refers to expanding women's educational possibilities so that they can make informed decisions about their own lives and those of their families (Pathak 2003). The process of giving women the power to become "breadwinners," to be self-reliant, to produce revenue through initiatives, and to fight poverty is referred to as the economic empowerment of women (Elliot 2008). In order to advance women's political objectives, they must be politically empowered (Pam Rajput, 2001; Tiwari, 2001). Women's psychological empowerment refers to the process of increasing women's motivation, self-interest, and morale to become more active in national initiatives such as education, politics, health, agriculture, and development (Pam Rajput, 2001; Tiwari, 2001).

OBJECTIVES

To examine the level of literacy rate of females in Nagaland

To identify the women workforce participation rate in Nagaland

To know the health conditions of women in Nagaland

To study the level of women participation in decision making in Nagaland

RESEARCH METHODOLOGY

The research paper is based on secondary data. It sheds light on the census report of the government, National Sample Survey Organization (NSSO) to understand the status of women empowerment Nagaland state various indicators have been used such as Female Literacy (FL), Female Workforce Participation Rate (FWPR), Gross Enrolment Ratio (GRE), Health conditions and standard of living of women in Nagaland. All the research has been done from authorized government websites and hence data has been collected from them. Further, the analysis of the data has been done on the basis of individual knowledge.

WOMEN EMPOWERMENT IN NAGALAND

Empowerment of women is being preached and followed in the northeastern states of India and issues and grievances are being raised by women all over the states. There has been the establishment of various NGOs and organizations that are working towards the upliftment and empowerment of women in the northeastern states (Vrinda Agarwal, 2020). Taking the example of a few of these; Naga Mothers Association is one of the renowned organizations, solely run by women that have played a crucial role in bringing about peace between the government of India and the Nationalist Socialist Council of -substance violence, etc. The Ao Nagas organization has given huge support to the females who have filled their names to be nominated for office in the state legislature. With their support, the women of the state have been empowered. It is further observed that the women who are able to support their household economy in any way are supported by the family members so as to earn more and hence improve their standard of living. If not earn from outside, since agriculture is practiced in most of the regions, women help her family in the agriculture work so as to establish that she is also a driving force. They have in the recent time proved to the whole nation that they are capable of any work be it in the field of education, sports, education, science or any other thing.

WOMEN LITERACY RATE IN NAGALAND

The state of Nagaland, which is divided into eleven districts, is split into backward and progressed districts, based on the socioeconomic situation of the districts. The advanced districts include Kohima, Dimapur, Mokokchung, Wokha, and Zunheboto, while the others are classified as backward. While categorising the advance and backward areas, the literacy rate was considered one of the most relevant characteristics. (*Social Assessment and Social Safeguards Management Framework for Nagaland Multisectoral Health Project (NMHP) (P149340) (Includes Tribal Development Plan, Resettlement Policy Framework, and Gender and Social Inclusion Guidelines)*, n.d.).

Table – 1: District –wise Literacy Rate by sex as per 2001 and 2011 Census

SI.No	District	As per 2001 Census		Total	As per 2011 Census		Total
		Female	Male		Female	Male	
1	Mokokchung	81.60	86.00	83.90	91.00	92.20	91.60
2	Wokha	75.30	85.30	80.50	84.50	90.80	87.70

3	Dimapur	71.80	81.10	76.90	81.80	87.50	84.80
4	Kohima	71.80	83.50	78.00	81.50	88.70	85.20
5	Zunheboto	64.50	73.80	69.30	82.60	87.90	85.30
6	Phek	62.30	78.40	70.60	72.20	83.70	78.10
7	Tuensang	49.50	59.70	54.90	69.60	76.30	73.10
8	Mon	36.40	46.60	41.80	52.60	60.90	57.00
9	Peren	59.40	72.10	65.90	72.60	82.80	77.90
10	Kiphire	44.10	55.70	50.20	64.00	74.90	69.50
11	Longlang	41.20	48.10	44.80	69.60	74.50	72.20
12	**Nagaland**	**61.50**	**71.20**	**66.60**	**76.10**	**82.80**	**79.60**

Source: Director Census Operation, Nagaland, Kohima.

Nagaland has a literacy rate of 79.60 percent, with females and men having literacy rates of 76.10 percent and 82.80 percent, respectively, according to Census 2011. The literacy rate was only 66.60 percent in the recent decade, with female literacy at 61.50 percent and male literacy at 71.20 percent. Over the last decade, the female literacy rate has increased by 14.61 percent. Mokochung has the highest literacy rate in the district, at 91.6 percent, with male literacy at 92.20 percent and female literacy at 91 percent.

Chart – 1 District – wise Literacy Rates by Sex as per 2011 Census
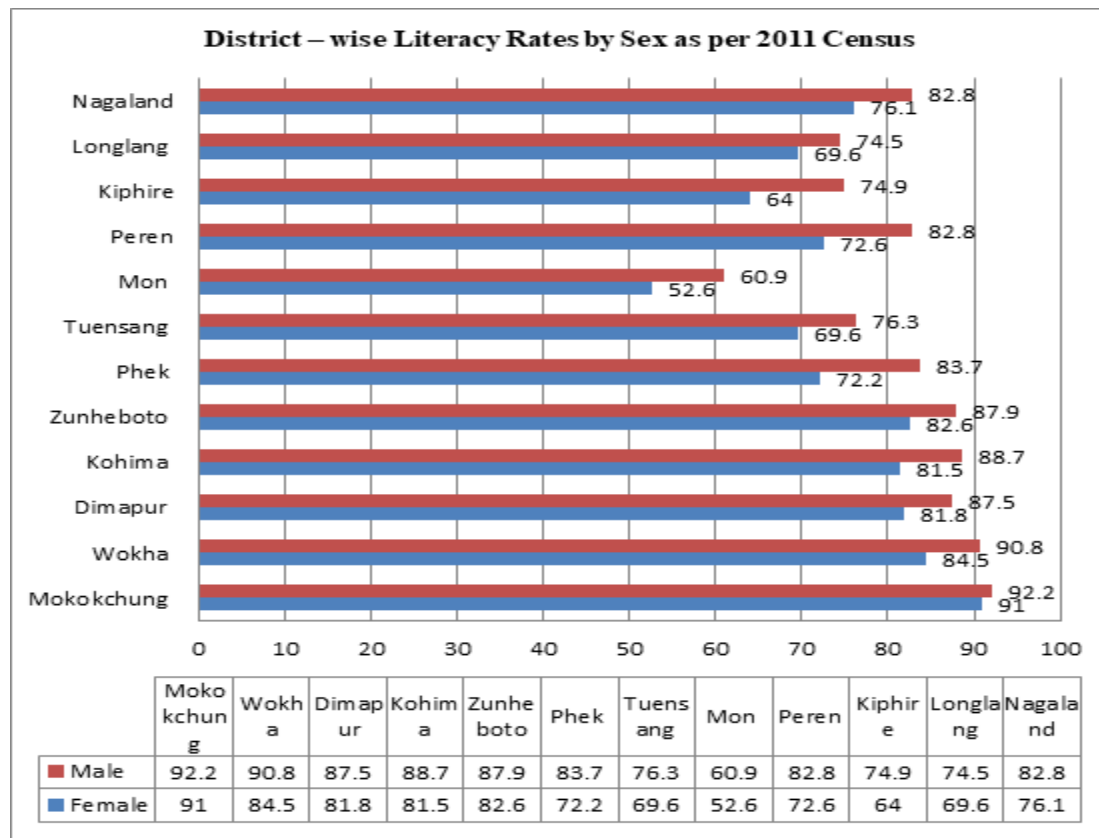
The Mon district has the lowest literacy rate, at 57 percent (male: 60.90 percent, female: 52.60 percent). The literacy difference between men and women is narrowing in the districts of Mokokchung, Zunheboto, and Longleng, while widening in the districts of Phek, Kiphire, and Peren.

WOMEN WORKFORCE PARTICIPATION IN NAGALAND

Female workforce participation is quite low in the state of Nagaland because of the violence and harassment they have been facing from many years. Better work ethics can be generated by women through proper education, awareness and training which will boost the confidence of females and enhance their working skills. For the empowerment of women it is necessary to start working from grass root level so as to bear fruits of improvement. From the below table it can be observed that the district-wise female workforce participation rate. The tribal women are more independent and are equal participant in any social activity and help their family in agriculture practices too.

Table - 2: District-wise Female Work Participation Rates in Nagaland from 1971 to 2011 Census.

SI.No	District	2011	Rank	2001	Rank	1991	Rank	1981	Rank
1	Mon	57.6	3	47.2	3	48.1	1	56.69	1
2	Mokokchung	46.0	7	43.4	5	33.75	6	36.64	6
3	Zunheboto	55.1	4	34.3	9	40.99	4	45.58	4
4	Wokha	44.4	8	31.9	10	37.81	5	42.34	5
5	Dimapur	28.5	11	18.0	11	--	--	--	--
6	Phek	48.6	5	47.9	2	45.2	2	54.51	2
7	Tuensang	47.8	6	38.2	7	43.17	3	48.08	3
8	Longleng	59.6	2	52.0	1	--	--	--	--
9	Kiphire	42.0	9	40.8	6	--	--	--	--
10	Kohima	36.2	10	37.3	8	29.89	7	33.51	7
11	Peren	64.0	1	45.3	4	--	--	--	--
12	Nagaland	44.7	--	38.1	--	--	--	--	--

Source: Directorate of Census Operations, Nagaland, Kohima.

The female workforce participation percentage in Nagaland is 52.3 percent in rural regions and 25.9 percent in urban areas, respectively. The Workforce Participation Rate in Nagaland is 44.7 percent for females and 53.4 percent for males, according to Census 2011. While there isn't much of a difference between males (55%) and females (52%) in rural areas, there is a significant male-female disparity in metropolitan areas (female 25 percent, male 47 percent). Mon, Zunheboto, Longleng, and Peren have the greatest female workforce participation rates in rural areas, whereas Peren has the highest female labour involvement rate in urban areas.(*Social Assessment and Social Safeguards Management Framework for Nagaland Multisectoral Health Project (NMHP) (P149340) (Includes Tribal Development Plan, Resettlement Policy Framework, and Gender and Social Inclusion Guidelines)*, n.d.).

WOMEN HEALTH CONDITIONS IN NAGALAND

As it is said that if you are healthy you have everything, therefore one of the parameters that can bring about the empowerment of women are the health conditions. If the factor of health is fulfilled then the women can be more powerful. The National Family Health Survey – V clearly state that data was collected keeping in mind women empowerment and it was found out that generally in the Nagaland women both pregnant and those involved in household duties have low iron content in their bodies which is a grave issue and it affects the immunity of females.

Chart 3 Nutritional status and anemia among children and women by district in Nagaland
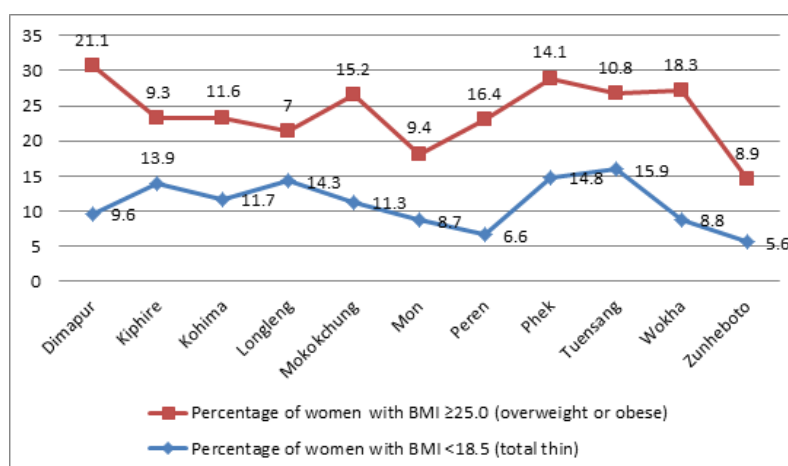
Source: National Family Health Survey – 5 (2019-20)

Further, there have been many initiatives taken up by the government to form schemes that will give a boost to female's health care in the Nagaland state. In the entire country, nearly 50% of women are anaemic. It was even found out that anaemia has been persisting among the women of Nagaland district-wise which is shown in the table below. Anaemia was found highest among the women living in Tuensang district (total thin) i.e. 15.9% and in the district of Dimapur (overweight or obese), there were only 21.1% cases of anaemia reported for women. Anaemia is also said to vary according to the maternity status.

Table 3 Nutritional status and anemia among children and women by district

District	Number of women	Percentage of women with BMI <18.5 (total thin)	Percentage of women with BMI ≥25.0 (overweight or obese)	Number of women
Percentage of children age 6-59 months classified as having anemia and percentage of women age 15-49 years with anemia and specific body mass index (BMI) levels by district, Nagaland, 2019-20				
Dimapur	2,360	9.6	21.1	2,278
Kiphire	313	13.9	9.3	304
Kohima	1,242	11.7	11.6	1,164
Longleng	306	14.3	7	289
Mokokchung	921	11.3	15.2	877
Mon	955	8.7	9.4	909
Peren	407	6.6	16.4	384
Phek	831	14.8	14.1	761
Tuensang	1,117	15.9	10.8	1,084
Wokha	524	8.8	18.3	494
Zunheboto	493	5.6	8.9	473
Nagaland	9,468	11.1	14.4	9,017

Note: Table is based on children who stayed in the household the night before the interview. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude using the CDC formula (Centers for Disease Control (CDC). 1998. Recommendations to prevent and control iron deficiency in the United States. *Morbidity and Mortality Weekly Report* 47 (RR-3): 1-29). Hemoglobin levels shown in grams per deciliter (g/dl). The Body Mass Index (BMI) is expressed as the ratio of weight in kilograms to the square of height in meters (kg/m^2).

[1] For pregnant women, the value is <11.0 g/dl

[2] Excludes pregnant women and women with a birth in the preceding 2 months

Source: National Family Health Survey – 5 (2019-20)

WOMEN PARTICIPATION IN DECISION MAKING IN NAGALAND

An important aspect of women's empowerment is that women are allowed and given the full freedom to make their own decisions related to health, social movement, and participation in decision making. As compared to the rest of the country it is observed that women of Nagaland experience more liberty and their voice has been amplified due to greater support from their families. The below data has been taken from the National Family Health Survey V which clearly states that nearly 90.7% of the women in Nagaland make their own decisions or decisions jointly with her husband which is the highest in the entire country.

Table 4 Participation in decision making

Decision	According to women, person who usually makes the decision				
	Mainly respondent	Respondent and husband jointly	Mainly husband	Someone else	Total
Percent distribution of currently married women and men age 15-49 by who usually make decisions about specific issues, by residence, Nagaland, 2019-20					
URBAN					
Own health care	10.8	85.9	3.3	0	100
Major household purchases	20.2	77.6	2.2	0	100
Visits to her family or relatives	13.6	84.2	2.2	0	100
RURAL					
Own health care	19.2	77.7	3.1	0	100
Major household purchases	22.7	75	1.9	0.4	100

Visits to her family or relatives	18.9	79.7	1.4	0	100
TOTAL					
Own health care	16.3	80.5	3.2	0	100
Major household purchases	21.9	75.9	2	0.3	100
Visits to her family or relatives	17.1	81.3	1.7	0	100

Source: National Family Health Survey – 5 (2019-20)

CONCLUSION

Women's empowerment can only be achieved via education. After reading this topic, it should be clear that empowerment is a development tool. Women have had to fight for equal standing in the home and society throughout history. To sum up, I believe that women in Nagaland must be uplifted and empowered in order to improve not only the country's image but also the women's lifestyles and conditions. Today's women are extremely powerful. She's gone through a lot of changes and is now more self-reliant, driven, and outspoken. It is time for the women of Nagaland to come together and be an inspiration for each and every woman of this country showcasing that determination and dedication are the key to achieving any milestone. The only government will not be able to achieve the target of women's empowerment and development. Further, there are various steps taken up by the government to women empowerment in the country by making education compulsory for all females, providing them with equal job opportunities, assistance in setting up their own enterprises, promoting women in national politics, etc.

Especially in the backward areas like Nagaland Nongovernmental Organization (NGO) and the Self Help Group (SHG) should be strengthening so that majority of women can take the benefits out of it. Various health's related schemes dedicated to women have been introduced by the government for their wellbeing. The government is playing its role and it is also the duty of citizens to acknowledge and encourage the equal participation of women in the development of Nagaland state. Furthermore, Nagaland has seen a number of powerful women's movements that have resulted in greater alignment with mainland India, as well as the promotion of nationalism and democratic principles, as well as dialogue and political negotiation, in order to bring peace and development to the region. In India, women's empowerment has gained a lot of significance in the past few decades. Indian women have excelled not only within the country but have also marked their presence globally and have earned laurels and fame to the country. The collective support will facilitate progress and growth. Hence it is significant to provide women with nurturing support and supervision to become progressive achieve peaceful life and secure future.

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REDUCTION OF CHANGEOVER TIME FOR POWDER COATING USING SMED TECHNIQUE

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ABSTRACT

For a business to succeed, it must be flexible and responsive to customer expectation. In most cases, extra time is required for setup or changeover due to equipment design issues. In order to compete in the marketplace and achieve their goals, organizations have been encouraged to re-energize themselves by adopting numerous pathways such as Agile, Lean, Total Production System, Total Quality Management, and others. To stay ahead of the competition, most organizations have adopted the tried-and-true Lean model. This has improved lean management strategies including expanding the value stream, decreasing change over time, producing manufacturing flow, leveling production based on demand, and cutting capital investment, to name a few. Implementing the lean model can also reduce the lead time, which can increase the production and hence increase the turnover. In this study, a powder coating manufacturing unit was chosen for the project, which required a reduction in changeover time and an increase in efficiency. The main objective is to reduce the change over time required for color change from light to dark color. As a result of the standardized change-over processes, the procedure has become faster and more intuitive for the operators.

Keywords: Single Minute Exchange of Dies, Powder coating, Total Production System, and Total Quality Management

1. INTRODUCTION

I TQM
TQM is a system for continuously improving the services and the products provided to the customers. TQM aims to harness the resources of an organization in an effective way to achieve the best quality of the products. This term originated in the 1950s by William Deming, a management consultant whose work had a great impression on the Japanese manufacturing system. TQM ensures to hold all parties involved in the entire production process liable for the overall quality of the final product.

II TPS
Toyota Production System is an original manufacturing philosophy that targets to eradicate waste and achieve the best possible efficiency. TPS was developed during the second half of the 20th century and has benefited from many years of continuous improvement to increase the production speed and efficiency. TPS design is specifically customized to compete in this modern highly competitive manufacturing field. It is considered "lean" because the manufacturing system uses less of everything compared to the traditional functional production system—the job shop. It uses less human effort, less manufacturing space, less tooling, and with less engineering time required to develop a new product in half the traditional time. The two main elements of TPS include Just in Time (JIT) and Automation. Any activity that does not add value to the product, in the eyes of the customer is a waste. JIT means on time production and hence there should not be any delay in the setup time (Arkar et.al, 2018).

III SMED
SMED was developed in Japan in the 1950s and 1960s by industrial engineer Shigeo Shingo to assist Toyota and other manufacturing companies in reducing inventory costs and increasing efficiency. Shigeo Shingo distinguished between internal setup, which takes place while a machine is shut down, and external setup, which takes place while the machine is functioning. SMED is a manufacturing excellence approach and one of the lean production methods for reducing waste in a manufacturing process and also to reduce the setup time.

Over the last ten years, the demand for faster across all industries, setup times have increased. Changing market demands place a high value on flexibility and cost containment. Set up time is a key strategy for achieving JIT production and resolving quality, cost, and time constraints, responsiveness and adaptability. The SMED system is a theory and set of practices that allow equipment setup and switch activities to be completed in less than 10 minutes. With SMED, the setup process is improved and setup time is reduced by up to 90%. Investments should be moderate. SMED can help reduce costs and increase flexibility within a process.

1.1 Objectives
- To apply SMED technique for the changeover time of powder coating.

- To reduce the changeover time of powder coating.

- To minimize the production time of powder coating.

2. LITERATURE REVIEW

With the use of the SMED technique, change over time can be considerably controlled and managed with minimal financial impact. SMED and Value Stream Mapping can help enhance Set up Time productivity and make Run down Time more productive (Bajpai, 2014). Set-up time is one of the most important parameters in any manufacturing industry, and it is a type of input that any machine or workstation need. Because set-ups are a collection of sequence-dependent changeover tasks performed prior to the commencement of any product's production, a machine's productive time can be increased by reducing its set-up time (Singh and Khanduja, 2009).

The process capability index was utilized to provide a quantitative measurement of the equipment design. SMED, or rapid changeover, is still a viable alternative for not only improving manufacturing but also building new equipment and dies (Cakmakci, 2009). The SMED system is a philosophy and set of methods for completing equipment setup and switch chores in less than 10 minutes. With SMED, the setup process is optimized, and setup time can be reduced by up to 90%. Investments should be reasonable (Cakmakci and Karasu, 2007).

The majority of the changeover or setup time reduction is governed or tied to Shingo's Single Minute Exchange of Die (SMED) strategy, which promotes reducing changeover or setup time (Palanisamy and Siddiqui 2013). The use of SMED and 5S approaches reduced external setup time by 11%. This resulted in an Overall Equipment Effectiveness (OEE) of 90.22 percent, which had never been estimated previously (Pinto et.al, 2019).

When SMED was used on vertical milling machine, setup time was reduced by 40%, while on horizontal milling machine; it was reduced by 57% which improved the production of the firm (Monteiro et.al. 2019). The lean tool 5S and standardization have helped to achieve an ergonomic state, while SMED has helped to cut setup time from 105 minutes to 57 minutes, a 46 percent reduction (Brito et.al., 2017). The delivery performance was enhanced by 4.4 percent, resulting in a 20 percent reduction in standby time. Setup time was decreased by 404 minutes, while delivery performance was improved by 14.60 percent (Kumar et.al. 2014).

The benefits of reducing setup time in a simple, capacity-constrained supply chain using reorder point replenishment are investigated in this study. It was discovered that simply decreasing setup time reduces the total system inventory required to meet a specific client fill rate (Grewal, 2009). In many studies to achieve lean manufacturing, the SMED technique is employed as part of Total Productivity Maintenance (TPM) and the "continuous improvement process." By using precise time records, the setup tasks will no longer have unpredictable time delays. As a result, better activity planning will result in higher customer satisfaction (Ulutas, 2011).

The company used the SMED tool to target the main waste in its main production line and considerably minimize its main production line changeover time. The study's main contribution is the identification of the mechanisms by which the usage of VSM and SMED has successfully helped to enhance firm production efficiency (Zaduminska, 2019).

It is critical to produce high-quality products utilizing cost-effective procedures and technologies in the shortest amount of time and with the lowest possible operational costs. Using SMED concepts, the total time required to complete cast on strap setup tasks at the assembly line was reduced by 54%, or from 52 minutes to 24 minutes (Deros et.al. 2011).

It is possible to minimize process time by improving the way processes are carried out, the setup stage, transferring internal activities to external tasks, and eliminating any extraneous steps. As a result, the machine's manufacturing capacity increases. If similar outcomes are obtained throughout all of the machinery on all shifts, the plant's output capacity will increase without incurring any further costs or hiring additional people (Keyser, 2021).

3. METHODOLOGY
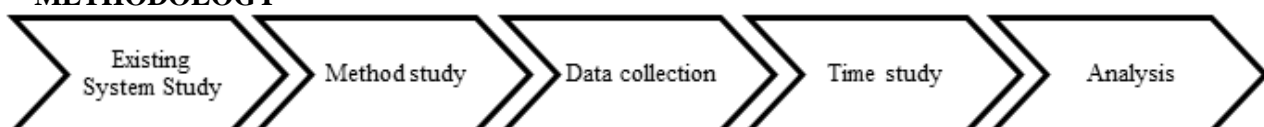
The company has two powder coating machines. One is completely automated and the other one is semi automated where certain activities have to be done manually. Therefore the semi automated powder coating machine was considered for the study and the existing system of powder coating was studied and it was noted that the process is taking a long time. Hence, method study of the powder coating process was carried out to critically examine the issue and the data was collected. The root cause of increased time of production was identified from the method study that the changeover of color from light to dark and booth wiping, both consumed time. Hence, time study was conducted for the changeover process from light to dark and the same has been tabulated (Table 2). From the literature review it was understood that SMED was one of the best tool to reduce the setup time or changeover time hence, using the data collected, it was analyzed using SMED technique to reduce the changeover time.

Existing Process

Table 1 Method Study of Existing Process

Process Number	Process Description
P1	Light color powder put into the hopper
P2	The component enters the booth
P3	The powder is released from the nozzle
P4	The released powder is sprayed and gets coated on the component
P5	The final coated component exits the booth
P6	After coating of light color, dark color coating is carried out
P7	Hopper with light color is removed, cleaned and wiped.
P8	Dark color powder is put into the cleaned hopper
P9	Booth is cleaned.
P10	Dark color powder coating is carried out.

Proposed Method

P7 and P9 are the major problems. That is, the changeover time from light color to dark color and cleaning the booth consumes a greater time. Also it was observed that the idle time is more and wiping of booth is repeated a number of times.

The changeover time was observed and noted for a period of six months- January, February, March, April, May, June (Graph 1). By thorough literature review, it was observed that SMED is one of the best techniques to apply to reduce the color changeover time from light to dark. To further analyze and reduce the time, time study of the color changeover is carried out and the data is tabulated (Table 2).

5. RESULTS AND DISCUSSIONS

Time study data is obtained (table 2) and the operations are explained in this section. The gun nozzles are cleaned. There are four guns and all of them are cleaned. The booth is cleaned using the wiper and next with air hose and wet cloth. The suction unit is cleaned with air hose and wet cloth. Again the booth cleaning is done using air hose and wet cloth and dry cloth. The nozzle cleaning is carried out next with air hose. Again the booth cleaning is done using air hose. The cleaned nozzle is fixed back. The next color powder box is unpacked and the hopper is cleaned with air hose. The hopper lid is cleaned with air hose. Vibrating mesh is cleaned with dry cloth and the hopper also is cleaned with dry cloth. The hopper lid and the cyclone is cleaned with a wet cloth and finally with a dry cloth.

The idle time and repeated work like wiping are eliminated. Extra internal elements were converted to external like Mop, Waste , Bucket and PPE and Powder remove stick were already kept in one place as 'kit' instead of the worker searching and bringing it. Next powder color which had to be put into the hopper was kept nearby on the stand. Also an additional Hopper is introduced wherein the next changeover color is put inside the hopper and kept ready. These ideas were successfully implemented and SMED was successfully applied to reduce the changeover time. The changeover time before SMED was noted to be 135 minutes whereas after the application it was found to be 100 minutes.

In the paper by (Sabale and Nagare, 2021), a changeover time reduction of 38% is achieved, on implementing SMED on the Kneader changeover. In our study, the time taken for changeover before SMED was 135 minutes whereas after the implementation, it was found to be 100 minutes. Hence there is a total reduction of 26% of time. Further research can involve 5S and Kaizen studies. Alternatives to shortening internal setups can be thoroughly investigated. Trial and mistakes should be reduced in order to eliminate adjustment processes.

Instead of adjustments, settings must be employed for changeover operations. As a result, a design of experiments study can be carried out to identify the machine's parameters.

5.1 Numerical Results

Table 2 Changeover time before SMED

Sl No	Activity	Time taken for the process(Sec)
1	Clean Auto Gun in booth 4 nos - remove nozzle	106
2	Clean Booth with wiper	132
3	Clean Booth with air hose	255
4	Booth cleaning with air hose	146
5	Booth cleaning with air hose	16
6	Booth cleaning with wiper	79
7	Booth cleaning with air hose	94
8	Booth cleaning with air hose	262
9	Suction unit cleaning with air hose	266
10	Suction unit cleaning with air hose and wet cloth	18
11	Booth cleaning with air hose	27
12	Booth cleaning with wet cloth	216
13	Booth cleaning with air hose	127
14	Booth cleaning with wet cloth	49
15	Nozzle and suction unit cleaning with air hose	125
16	Suction unit cleaning with air hose	97
17	Booth cleaning with air hose	188
18	Booth cleaning with dry cloth	440
19	Nozzle fitting	145
20	Packing of powder box	43
21	Hopper cleaning with air hose	310
22	Cleaning of hopper lid with air hose	95
23	Vibrating mesh cleaning with dry cloth	69
24	Hopper cleaning with dry cloth	147
25	Wet wipe of hopper lid	188
26	Wet wipe of Cyclone	202
27	Total idle time of the workers	20

5.2 Graphical Results
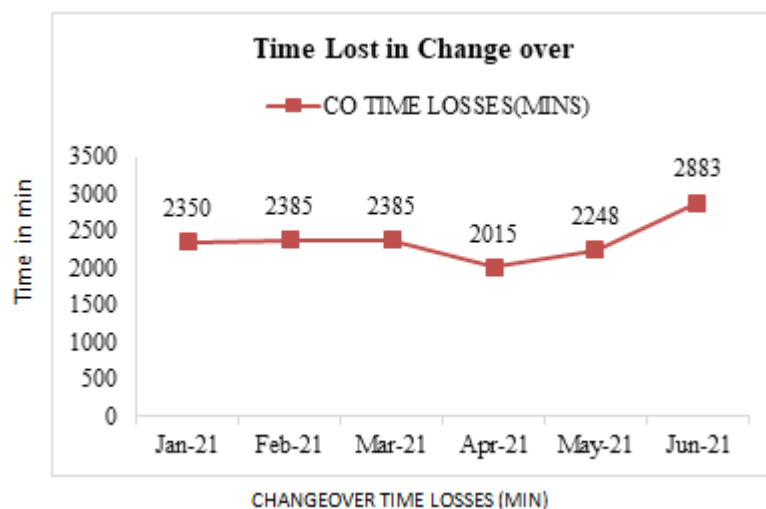
Figure 1 Time lost in changeover over a span of six months

Figure 1 depicts the time required for powder coating during a six-month period, from January to June 2021. For the first three months, there was little change in time, but in April, it was discovered to be falling, followed by a modest increase in the following two months.
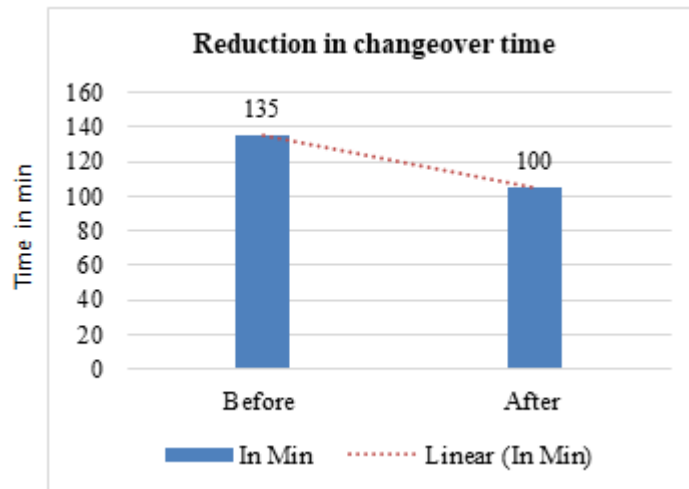
Figure 2 Reduction in changeover time after SMED application

Figure 2 illustrates the changeover time at the final stage, where the initial changeover time for cleaning the booth was 135 minutes, but the changeover time was decreased to 100 minutes after the adoption of SMED that is 26%

5.3 Proposed Improvements
Time involved in booth cleaning was reduced by using additional air hoses. Idle time and booth wiping with wiper were eliminated, which sums up to 26 activities. To reduce the time involved in color changing from light to dark, an additional hopper was used which made the changeover much easy.

Following the reduction of the changeover time, it was discovered that the changeover time could be furthermore reduced. Hence the following were proposed as suggestions: Additional air hose lines can be added, a vacuum cleaner can be used instead of air hose for cleaning, the cleaning kit is kept ready before the switch procedure begins, cleaning of the nozzles in the gun and the booth is done at the same time, cable identification is done by pasting numbered stickers, pipes attached to the nozzle is color coded and metal side walls can be replaced with plastic.

6. CONCLUSION
Using Lean concepts in any process will yield significant results for businesses. This study shows that removing non-value-adding operations from any process can yield significant results. Carrying out some processes simultaneously can also save a lot of time but for that case there might be a requirement of increased labor. There may be obstacles, but we cannot eliminate them entirely; instead, we can prepare alternate activities to address these roadblocks ahead of time, reducing the amount of time it takes to overcome them. The importance of reducing changeover time was shown utilizing SMED approach in this study. It is possible to reduce changeover time after using the SMED technique, and hence boost productivity as a result of the time saved.

In order to increase productivity, it is necessary to have a short changeover time, which aids in the delivery of high- quality components at a low cost, which also contributes to customer satisfaction. However, industries are moving towards industry 4.0, in which profits are no longer tied to large investments, but rather to slight improvements that result in large gains.

When a company recognizes that a longer setup time can lead to higher manufacturing costs and decreased productivity, it examines its current changeover procedure to see how it can be shortened. Furthermore, outsourcing internal procedures to outside operations allows assembly line workers to concentrate and focus more on tasks in less time. The firm was able to reduce the lengthy setup time by implementing Single Minute Exchange of Dies.

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HIGH SPEED RECONFIGURABLE IO ARCHITECTURES FOR 3D NOC-A SURVEY

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ABSTRACT
With the development of on-chip manufacturing technologies and the requirements of high-Speed communication and the core count is growing quickly in Chip Multi/Many-core Processors (CMPs) and Multiprocessor System-on-Chip (MPSoC) to support larger scale parallel execution. Network-on-Chip (NoC) has become necessary to meet the high-speed requirement for CMPs and MPSoCs in addressing the communication challenge. In this paper an attempt is made to make a survey on problems facing high-performance NoC designs for IOs

INTRODUCTION
As we scale down the technology line the architecture of any electronic system as is more integrated with all parts which in turn leads to NOC for communication between Multi and many-core embedded SoCs (System-on-Chip) which provide key solutions to meet the extraordinary demands of current and future applications. Network on Chip (NoC) is a scalable interconnection structure, which can provide efficient solutions for on-chip interconnection problems of SoCs such as re-configurability required for multiple high-performance of and also to match the speed of all devices

LITERATURE REVIEW
In this section, we have reviewed few recent and relevant research works and publications that carried out their efforts on the research subject and made the survey below,

[1] This paper demonstrates the importance of cache access fairness for system performance and makes a case for the design of a non-uniform 3D architecture that combines the designs of memory mapping and NoC. In the anticipated future, we will study how the cache protocol and operation (e.g., update, invalidate, etc.) have an impact on the cache access fairness.

[2] In this study, a fuzzy-based thermal management scheme (FBTM) is proposed that simultaneously considers cores and stacked caches. The proposed method combines a dynamic cache reconfiguration scheme with a fuzzy-based control policy in a temperature-aware manner. The dynamic cache reconfiguration scheme determines the size of the cache for the processor core according to the application that reaches a substantial amount of power consumption savings. The fuzzy-based control policy is used to change the frequency level of the processor core based on dynamic cache reconfiguration, a process which can further improve the system performance.

[3] In this study, we present a Q-function-based traffic- and thermal-aware adaptive routing algorithm, utilizing a reinforcement machine learning technique that gradually incorporates updated information into an RTM-based 3D NoC routing path. The proposed algorithm initially collects deadlock-free directions, based on the RTM and topology information. Subsequently, Q-learning-based decision making (through the learning of regional traffic information) is deployed for performance improvement with more balanced inter-layer traffic.

[4] In this paper, we present the architecture and design of a comprehensive soft error and hard fault-tolerant 3D-NoC system, named 3D-Hard-Fault-Soft-Error-Tolerant-OASIS-NoC (3D-FETO).With the aid of efficient mechanisms and algorithms, 3D-FETO is capable of detecting and recovering from soft errors which occur in the routing pipeline stages and leverages reconfigurable components to handle permanent faults in links, input buffers, and crossbars. In-depth evaluation results show that the 3D-FETO system is able to work around different kinds of hard faults and soft errors, ensuring graceful performance degradation, while minimizing additional hardware complexity and remaining power efficient.

[5] This paper proposes Lottery arbitral mechanism for 3D NoC router architecture. Depending upon the application, different communication has different priorities, we use the projected algorithm to constitute the priority of dissimilar ports. We propose micro architecture for the asynchronous 3D Lottery router and its function are introduced. We estimate the output port exploitation pace of dissimilar input port in the proposed asynchronous 3D Lottery and Round Robin algorithms. The results are compared and the Lottery router can be able to distinguish the different communication priority and promise to achieve supplementary network resources for the packet which are having highest priority.

[6] A new architecture is proposed in this paper to decrease network diameter. A new particular topological structure is also presented based on node-layer clustering algorithm (NLCA) together with several rules for the main node as cluster-head (CH). A deadlock free routing is subsequently suggested using this topology. To examine the effect of the given architecture on algorithm speed, the Scalable Universal Matrix Multiplication Algorithm (SUMMA) is further implemented and evaluated. Upon a decrease in the network diameter, the simulation results indicate a 10% improvement in energy consumption, 5.3% growth in network latency, and 20% enhancement in throughput as the given architecture is utilized.

[7] In this paper, we use one of the embedded commercial off-the-shelf (COTS) multi/many-core components, the Massively Parallel Processor Arrays (MPPA) 256 developed by Kalray, and conduct evaluations of data transfer and parallelization of a practical application. We investigate currently achievable data transfer latencies between distributed memories on network-on-chip (NoC), memory access characteristics, and parallelization potential with many cores. Subsequently, we run a practical application, the core of the autonomous driving system, on many-core processors and acceleration by parallelization indicates practicality of many cores. By highlighting many-core computing capabilities, we explore the scalable data allocation and parallel computing on NoC-based embedded many cores.

[8] We introduce a Hardware Abstraction Layer (HAL) for lightweight many cores that cope with key issues that are often encountered when designing an OS for these processors. We present the interface exposed by our HAL, as well as a discussion about its implementation for the Kalray MPPA-256 manycore.

[9] In this paper, we propose a novel on-chip structure with dynamic reconfiguration capability for I/O supported parallel application. Our motivation is to reduce the cost of chip areas greatly by dynamic reconfiguration of the network in NoC architecture under the conditions that I/O parallel applications can be supported, and the performance can be optimized. In our design, I/O node will be obtained firstly and then the information of the spare processing elements (PE) near it. Finally, combined with the communication pattern of applications, wires will be reallocated and reconfigured to create a virtual regionalized area. The experimental results show that we can get a certain level of optimization among chip area, communication efficiency and the performance of I/O supported parallel applications.

[10] In this work, we explore the performance bottlenecks in 3D NoC, and then leverage redundant TSVs, which are conventionally used for fault tolerance only, as vertical links to provide additional channel bandwidth for instant throughput improvement. Moreover, these shared redundant links can be dynamically allocated to the stressed routers for congestion alleviation. Experimental results show that our proposed NoC design can provide up to 40% performance improvement, with less than 1.5% area overhead.

[11] In this paper, we explore the design of 3D stacked non-uniform cache architecture (NUCA) with on chip network. In addition, this paper investigates the problem of partitioning shared L2 cache for concurrently executing multiple applications in order to improve the system performance in terms of instructions per cycle. The proposed design is evaluated in an integrated power, performance, and temperature simulator.

Various implementations such as TSV placement [17] [20], Routing [15] [16] [18], Thermal-aware Design Strategies [19] [22], Reliability threats [21] based architectures for 3D NoC have been introduced in the recent years. From the review of literature conducted, we can observe that the available 3D NoC based implementations suffer from long latency and poor performance due to the cores cache memory latency and NoC's network latency. We have also noticed that there is not any optimal solution available using IO based solutions that solve both the challenges (routing & cache) from a single architecture/approach.

BASELINE ARCHITECTURE OF THE PROPOSED RESEARCH:
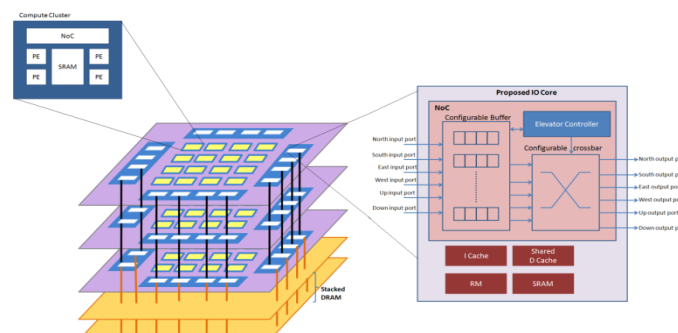
Figure: The Baseline System Architecture of the proposed IO core for 3D NoC

The proposed IO core has an Interconnect unit (NoC), Resource Management Unit (RM), I cache and Shared D cache memories, and SRAM. The IO core works with compute clusters in the same chip as well as help compute clusters to communicate with other clusters in other chips in 3D NoC. The proposed IO interconnects algorithm works on optimal path selection and ensures high speed communication on chip. At same time, it provides efficient IO management by avoiding memory conflicts in parallel communication.

In the architecture proposed we can

- Build an IO core to offer On chip Communication strategies for 3D NoC

- Develop an IO interconnect algorithm called "Priority Based Elevator Arbitration algorithm" that achieves higher throughput and good average latency.

- Adopt XY or Round-Robin Arbitration algorithm Intra Layer Communication

- Adopt Priority Based Elevator Arbitration algorithm for Inter Layer Communication. For the dynamic allocation of time slots and to provide rapid communication between layers of the chip.

- Apply cache coherent methodology inside the Resource management (RM) unit in the IO core to optimize cache access.

- Test and verify the functionality of the architecture on the top of stacked mesh three-dimensional NoCs

- Test and verify the functionality of the architecture on the top of stacked mesh three-dimensional NoCs in the Homogeneous and heterogeneous integration scenarios.

- Evaluate the system performance of the proposed architecture for Speed, Area, Delay, and Power finally compare it with existing 3D NoC designs.

CONCLUSION:

In this paper an attempt is made to study different architectures with NOC IO based reconfigurable multi core architectures.

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AN OVERVIEW OF STRUCTURALISM IN ENGLISH LITERATURE

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ABSTRACT
The twentieth century is characterized through the proliferation of ideas.

The thoughts so evolved and harnessed permeated all fields of human undertaking from epistemology, metaphysics and good judgment.

Every subject has registered one form of breakthrough or another.

In literature, many literary theories are evolved and come to be the gateway to textual interpretation and evaluation.

One of such is the Theory of Structuralism. It is a plethora of theories with exceptional analytical tools.

Most of those enroll in binary competition as the suitable become of textual interpretation. Structuralism tries a scientific way of arriving on the textual content unmindful of info.

The principle announces the 'death of the writer' while similarly brushing off the reader as unimportant.

This paper deals into the principle of structuralism with the intention of discussing it in simple phrases.

Structuralism' is a time period embracing a own family of theories that between them deal with all phenomena of the human world – substantially language, literature, cookery, kinship family members, get dressed, human self-notion.

In these kinds of domains, structuralists declare, the observable, reputedly separate elements are rightly understood handiest when seen as positions in a shape or device of relations.

The linguist Ferdinand de Saussure is usually recognized because the founder of the structuralist motion. For him semiology – the technology of the which means of herbal languages – consists in determining the formal location of any sign within the inclusive machine of symptoms this is language (langue), this is, to peer it as a 'distinction' some of the machine of inseparably linked 'variations'.

Literary importance is dealt with in a similar manner. But both in linguistic and literary studies the life of a entire and closed system has been largely expected, presupposed rather than confirmed, wherein no more than fragments of the supposed gadget may want to ever certainly be accumulated.

Key words: Literary Theory, Structuralism, Text, Reader, Meaning

INTRODUCTION:

Modern literary theories flourished within the 1960"s. The 1960"s witnessed the entry of structuralism, as a literary concept, into the literary-vital institution and the emergence of powerful reviews of structuralism (Bello-Kano 2002). Structuralism reviews include Pierre Macherey (1966; English translation, 1978) and Jacques Derrida"s celebrated essay, "Structure, Sign and Play in the Discourse of the Human Sciences" (1966). Other substantial opinions of structuralism encompass Michel Foucault (1970) and his essay, "The Order of Discourse" (1970), reprinted in R. Young (ed.) Untying the Text: a Post-Structuralist Reader (1981; See also Harari 1979).

However, many pupils, in line with Bello-Kano (2002), which include "Barthes (1967); Jameson (1972); Culler (1975); Hawkes (1977)"; and Eagleton (1999); have all argued that the rules of modern-day structuralism lay in linguistics, "to be precise inside the structuralism method of the Swiss linguist, Ferdinand de Saussure (1857-1913)" (Bello-Kano 2002). Although, Saussure in no way consciously formulated a idea, it become his lecture notes which his college students re-accrued and published posthumously. Structuralism became born and bred in France and inaugurated with the aid of the cultural anthropologist, Claude Levi Strauss, who in turn owed debt to the real founding father of the movement, Ferdinand de Saussure.

Structuralism, as a literary theory, emerged at a time whilst complaint changed into in a sorry unscientific mess and needed to be neatly tidied up. It turned into a matter of subjective fee judgment and idle gossip, and badly required the discipline of an goal system, not a random series of writings strewn together during records: if examined closely it will likely be observed to have worked by way of certain objective laws and complaint may

want to itself emerge as systematic by way of formulating them. These laws had been the diverse modes, archetypes, myths and genres via which all literary works had been based (Eagleton 1999:ninety one-ninety two).

Much structuralism comes from the truth that its founding fathers have evolved a passion for inventing their very own language and terms or definitions (Stephen 2000:359). Its language of debate and writing is frequently very hard and tangled the troubles complex and every so often confused. Internal squabbling on the University of Cambridge over structuralism did little to enhance the general public picture of grievance in particular at some stage in the short length the media involved itself on this hitherto unknown phenomenon. It didn't find a unmarried academic who ought to explain the principle satisfactorily to the everyday reader (Stephen 2000:352).

THEORETICAL POSITIONS:

Structuralism represents an try and reconsider the entirety in phrases of linguistics (Eagleton 1999:97). Ferdinand de Saussure in his Course in General Linguistics (1974) argues that the underlying machine of conventions must be the object of observe for linguistics. Saussure in addition sees language as a machine of signs; that the signal is the basic unit of which means; and the sign comprises signifier and signified (the intellectual idea"). For Saussure, in keeping with Bello-Kano (2002), the sign is unfair. Therefore, the relation between the signifier and the signified is only remember of convention. This distinction, for Saussure, does not seek advice from a call or a aspect but to that between word picture and the idea, which could only be separable on the analytical level. To buttress his argument further, Saussure (1974:116) remarked, "if words stood for pre-current entities they would all have actual equivalents in that means from one language to the next, but all this isn't always actual".

It is obvious now that Saussure has succeeded in „bracketing the query of reference, the relation between word and concept" (Bello-Kano 2002). Claude Levi Strauss (1958) and Greimas (1966) took up Saussure"s structural thought of language in addition and extended it to the observe of social world. Levi Strauss sees meaning as handiest a question of the interrelations of words- as a device of symptoms. Furthermore, Eagleton (1999:97) posits that "the underlying set of laws via which these signs are blended into meanings, [involved] largely ignoring what the signs and symptoms simply „say" and listen instead on their inner relations to each other".

Claude Levi Strauss ushered in modern structural evaluation of narrative with his pioneering work on delusion. Myths were a form of language: they might be broken down into individual units mythemes" which is the equal of phonemes. In language, they collect which means simplest whilst blended together specifically methods. The guidelines governing mixtures constitute grammar, a hard and fast of members of the family under the floor of the narrative which constitutes the myths actual meaning. These members of the family are inherent inside the human thoughts itself. These mental operations making of binary competition are what myths are approximately- devices to assume with, ways of classifying, and organizing fact (Eagleton 1999:104).

Therefore, Levi Strauss"s impulse of setting apart all widespread systems in cultural phenomena, the production of a rigorous, clinical, and goal approach inside the take a look at of sign-gadget, is consequently the „fundamental trade" of structuralism (Balamires 1991:360-362). Literature, here, need to be dealt with as technological know-how of symptoms, as a machine of codes and the viable situations of the functions of that system (Bello-Kano 2002). This has the same opinion with Barthes (1972:209) where he sees the intention of all structuralists as nothing however "reconstructing „an object" in the sort of way as to appear thereby the policies of its functioning ("the functions") of this item".

Structuralism aims to show the frequent shape of language as a constructed machine of policies. Saussure was not interested by what humans certainly say however inside the structure which allowed them to say it. In the linguistic machine there are differences: which means is not mysteriously immanent in a sign however is practical, the end result of its distinction from other symptoms (Eagleton 1999:97). Structuralism because the term indicates, is involved with structures more specially with analyzing the general laws by way of which they paintings. Each gadget is broken into its numerous factors the usage of the principle of an endless set. Each machine together with its factors may be shown now not as whole in itself however as an inclusive part of a larger and still incomplete gadget. In different words, one set is taken into consideration as part of any other set, and the second one set taken into consideration as a part of a 3rd set etc, in order that any structural changes within one of the minor units unavoidably will affect the nature of the entire. A poem, as an instance, may be examined as a shape at the same time as nonetheless treating each of its gadgets as extra or much less meaningful in itself.

According to Barthes (1972:201) "that means provided by way of use of language now not simplest structurally shifts however can (and be) shifted". Meaning then, isn't solid, predetermined entity which passes, untrammeled, from reader to receiver. To him, structuralism, itself developed from a linguistic model, unearths in literature, that's the paintings of language and, an item that has extra than an affinity with it. The method which combines close subject for the character work with a larger cognizance of equipment of its poetics is what's termed as analyzing. It sees the individual work as an self sufficient machine, however "eschews the sticking to the text aspects which limits more explication due to the fact it is permanently aware of the textual contents status as a device and its relation to a larger system" (David 1993:104-105).

The reader will no longer look for hidden meanings and give them preference as in activity of interpretation; such a reader can be concerned with the various tiers of meaning, and the multiplicity which the textual content as a gadget enjoys. The reader, in keeping with those theorists, performs ,operations –superb function and figuration which translates the textual content or a collection of texts as obedient to the nature of a certain discern or shape which may be discerned in various modes and at various levels, in order that a unique might also in its plot and characterization enact the dominant form of a specific parent of speech, or a pattern of syntax. According to Eagleton (1999:119) this technique may be implemented to studying of brief memories.

Barthes stocks Russian concern with literariness such as the self- recognition use of literary gadgets that signal that we are in the presence of literariness rather than different styles of discourse" (Appignanesi 2001:54). Formalist ideas resurfaced within the west to encourage new technology of theorists in the structuralistic movement with hobby focused on literary shape and language. This is likewise the argument advanced by Lee (1998:189) that "structuralism which changed into dormant for half a century, bloomed in European intellectual circles within the 1960"s". Barthes changed into of the opinion that structuralism helped to sell the notion of the loss of life of the man (or the item), that means that our conventional enlightenment of man" because the center of cultural process- a creature capable of exert domination over its environment via the exercising of purpose is a delusion; in real phrases we are controlled via structures (Appignanesi 2001:75).

Therefore, each literary textual content contains a potentiality for remodeling the whole gadget that it embodies and that has produced it: the literary text is capable of subvert the linguistic gadget it inherits; it does not simply show off the characteristics form of the language which incorporates it, it additionally extends and modifies that language. Literature is interior language; what destroys the metaphysics inherent in every language. The essence of literary discourse is to go past language: literature is sort of a deadly weapon with which language commits suicide. Accordingly, literary concept is totally great and signifying and cannot be reduced" to our articulation of its content material. Writing communicates in ways which language does not in its ordering of events via linear development and this need to be taken under consideration. This function is fully taken up by way of Barthes, whose analysis of the unique nature of writing and analyzing has proved significant to the improvement of structuralist literary complaint (David 1993: 106).

The concept of polarities in language derived from Saussures insights concerning the syntagmatic and associative planes of linguistic performance, and it confirms the belief of the glowing" pressure of binary competition (David1993:106). In his writing on aphasia David (1993) located that the 2 primary problems recognized- similarity disease and contiguity disorder are binarily antagonistic. Related to the two are strikingly the two basic rhetorical figures of metaphor and metonymy. Metaphor, to apply Saussures idea, is normally „associative" in individual and exploits language horizontal members of the family. For instance, inside the sentence, the Aso Rock considers a policy, " a selected extremely good structural enclave is proposed as equal to the president of Federal Republic of Nigeria. Metaphor and metonymy are consequently characteristic modes of binarily antagonistic polarities which among them underpin the two fold technique of selection and aggregate through which linguistic symptoms are formed: the given utterance (message) is a aggregate of constituent elements (sentences, phrases, phonemes, etc) decided on from the repository of all constituent elements (the code). Messages are constructed through a combination of horizontal movement, which combines phrases collectively, and a vertical movement; which selects the particular words from the to be had inventory or internal storehouse of the language (Hawkes 1977:77).

At its heart, structuralism proposes that there may be no such factor as objective truth in literature. Its primary factors, phonemes or primary speech sounds of a language do not have a everlasting or apparent which means. Meaning is created by inner relationships, stresses and patterns which they set among themselves. Key definitions in the theory are the signifiers of meaning created by using the signifier. Structuralism therefore, „perceives some of differing tiers of which means and interpretation: every level up organizes the decrease degree into complex mixtures and capabilities" (Stephen 2000:360). Language is a signifying system, signals of meaning which reach their capability thru bouncing off every other, and no longer from any courting to the

author or sociological background elements. Structuralists gift the view from one in every of its founders, Roland Bathes, that „the writer is lifeless". The reader is similarly disregarded due to the fact hobby shifts on the text (Stephen 2000:360). In Structuralism, Stephen argued look at a number of the principles and phrases generated via grievance, through the years and see those as simply conventions acquired from earlier analyzing or the triumphing subculture. It beats an vintage drum whilst it states that through irritating or altering frequent general of language it famous the tacit conventions and codes that govern language and our integration of it, accordingly shocking, stirring and stimulating us into a brand new recognition of those codes.

Structuralism is a way of thinking about the arena that is predominantly involved with the perceptions and description of systems. At its most effective, structuralism claims that the character of each element in any given state of affairs has no significance by itself, and actually is decided by means of all the other factors concerned in that situation. The full importance of any entity cannot be perceived unless and until it paperwork a component. Structuralists believe that every one human interest is constructed, not herbal or important".Consequently, it's far the structures of organization which are crucial (what we do is always remember of choice inside a given construct). Therefore, any pastime takes vicinity inside a system of variations and has meaning simplest in its relation to different viable activities inside that system, not to a few meaning that emanates from nature or the divine.

CONCLUSION:

The structuralists" simple approaches to the interpretation of texts vary. Most structuralists bear in mind the binary opposition as the proper way of interpretation and textual evaluation. Others just like the genetic structuralists increase the argument that the text be patterned in keeping with its personal internal laws of natural boom. Claude Levi Strauss has truly applied the binary" or useful competition" in his seminal analysis of myths. Eagleton has also used it in analyzing memories, meaning that structuralism can be carried out to the interpretation of all varieties of cultural manufacturing. DiYanni (2000) even went in addition to offer checklist for the structuralist interpretation of texts. He has also implemented binary competition in his interpretation of a quick tale.

It may be very clean from the numerous reviews, views and positions of its leading theorists and the vital views that there may be surely no unmarried structuralism as a principle of literature. What obtains is a number theoretical positions and arguments, all in support of the idea that the literary textual content that's a made of language stays the very last arbiter in place of the author or the social occasions surrounding the production of the cultural product. The positions are as many because the analysis and interpretation of the textual content. Some even cross opposite to one another. Some placed that the author is lifeless and the reader have to be brushed off. Saussure and his closest disciples are of the view that the textual content will be analyzed and interpreted as a part of a larger structure and which determines its worth as literary paintings. There are others who slightly fluctuate because they may be of the view that the literary text may be analyzed and interpreted in itself as an self sustaining shape- extraordinary gadgets of a given textual content, poetry, short tale may be considered as systems.

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SURYA NAMASKAR ON BODY WEIGHT

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ABSTRACT

The purpose of the present study was to investigate the effect of Surya Namaskar on body weight among college girls. To achieve the purpose of the study thirty college girls of overweight category were selected from Karaikudi, Tamilnadu, India during the year 2021. The subject's age ranged from 17 to 21 years there BMI falling in the 25 to 29.9 category. The selected students were divided into two equal groups of 15 students each namely experimental group and control group. The experimental group underwent a Surya Namaskar programme for six weeks. The control group was not taking part in any training during the course of the study. Body Weight was taken as a criterion variable in this study. The selected subjects were tested on BMI calculator method scale. Pre-test was taken before the training period and post- test was measured immediately after the six week training period. Statistical technique 't' ratio was used to analyse the means of the pre-test and post test data of experimental group and control group. The results revealed that there was a significant difference found on the criterion variable. The difference was found due to Surya Namaskar given to the experimental group on Body Weight when compared to control group.

Keywords: Surya Namaskar, College girls, Body weight, BMI and 't' ratio

INTRODUCTION

Surya Namaskar or the Sun Salutation is the 12 step process which targets various muscle groups of our body making it a complete body exercise. It consist a total of 7 asana namely pranamasana, hastauttanasana, padahastasana, ashwasanchalasana, parvatasana, ashtanganamaskarasana, bhujangasana and these are repeated in reverse order to complete the 12 steps consisting of parvatasana, ashwasanchalasana, padahastasana, hastauttanasana, pranamasana.

The various asanas acts upon various muscle groups, by strengthening and toning them and that is why suryanamaskar is a one-step solution for working your body in your limited time schedule of busy life. The practice of Surya Namaskar helps us in creating balance between the three constituents of our body- Kapha, Pitta, Vata

BENEFITS OF SURYA NAMASKAR

The unified benefits of Surya Namaskar are:-

- Tones muscles leading to weight loss
- Improve blood circulation making your skin glow
- Improves hair and skin quality
- For women Surya Namaskar ensures regular menstrual cycle
- Better metabolism
- Regulates blood sugar level
- Detox your body.

When we take into account the benefits provided by each of the asana they are as the following-

- Pranamasana relaxes the nervous system and helps you to maintain the body balance.
- Hasta uttanasana stretches the muscle of chest and abdomen increasing the oxygen intake by maximizing lung expansion and capacity.
- Padahastasana improves spine flexibility and strengthens the hamstring along with opening of hips, shoulder and arms.
- Ashwasanchalasana improves the flexibility of spine and neck and the leg muscle is strengthened. It also helps in curing indigestion and constipation.

- Performing parvatasana increases blood flow to the spinal region and the muscles of legs and arms are also strengthened. It is also said that parvatasana even helps in growth.

- Ashtanga Namaskarasana is the term for saluting with eight parts of your body. Increasing the back and spine flexibility it strengthens the muscles of the back as well. It is also said to reduce the stress and anxiety.

- In Bhujangasana you stretch your shoulders, chest and back which in turn increases the flexibility of the spine and it also helps in lifting the mood.

RESEARCH METHODOLOGY
SELECTION OF SUBJECTS

To achieve the purpose of the study, thirty college girls were selected at random as subjects. The age of the subjects ranged from 17 to 21 years.

SELECTION OF VARIABLE

| INDEPENDENT VARIABLE | DEPENDENT VARIABLE |

❖ Surya Namaskar   ❖ Body Mass Index

EXPERIMENTAL DESIGN AND IMPLEMENTATION

The selected subjects were divided into two equal groups of fifteen subjects each, of which the Surya Namaskar practice group was named as Experimental Group and another one without any training schedule was named control group. The experimental group underwent Surya Namaskar training for six days per week for six weeks. Control group, did not undergo any sort of training programme except their regular physical activities as per their curriculum. The physical variable BMI was selected as the criterion variable. All the subjects of both the groups were tested on selected criterion variable BMI calculator method scale prior to and immediately after the training programme.

STATISTICAL TECHNIQUE

The 't' test was used to analyse the significant differences, if any, between the groups. Level of significance was fixed to 0.05 level of confidence

ANALYSIS OF THE DATA

The significant difference among the means was found out by pre-test and post-test. The data were analysed and dependent 't' test was used with 0.05 levels as confidence.

TABLE I Analysis of t-ratio for the pre and post tests of experimental and control group on BMI (Scores in points)

Variables	Group	Mean		SD		Degree of freedom	't' ratio
		Pre	Post	Pre	Post		
Body mass Index	Control Group	27.66	27.73	0.81	0.81	14	1.32
	Experimental Group	27.43	27.06	0.74	0.70		**5.00***

*Significance at .05 level of confidence.

The Table-I shows that the mean values of pre-test and post-test of the control group on Body Mass Index were 27.66 and 27.73 respectively. The obtained 't' ratio was 1.32, since the obtained 't' ratio was less than the required table value of 2.14 for the significance at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of the experimental group on Body Mass Index were 27.43 and 27.06 respectively. The obtained 't' ratio was 5.00* since the obtained 't' ratio was greater than the required table value of 2.14 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in Body mass Index. It may be concluded from the result of the study that experimental group improved in Body mass Index due to six weeks of Surya Namaskar training.

Figure-1 Bar Diagram Showing the Pre and Post Mean Values of Experimental and Control Group on body mass index

Body Mass Index

	Control group	Experimental group
Pre test	27.66	27.43
Post test	27.73	27.06
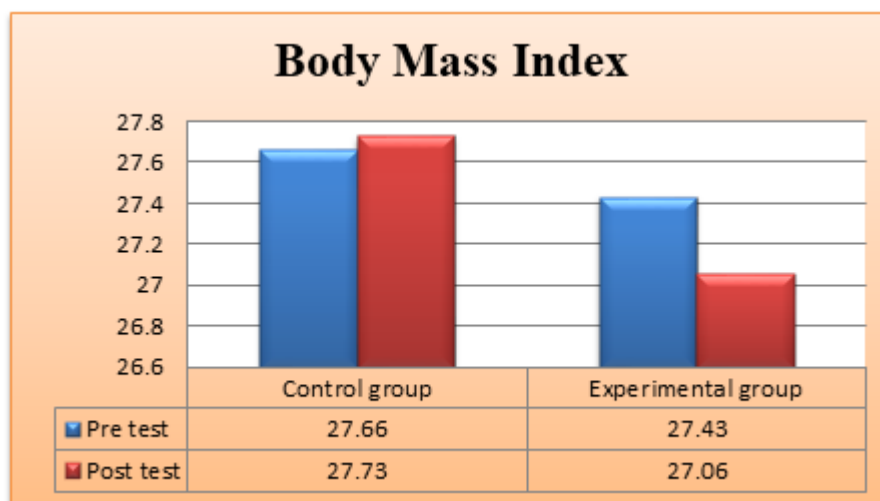
DISCUSSIONS ON FINDINGS

The result of the study indicates that the experimental group, namely Surya Namaskar training group have significantly improved the selected dependent variable, namely Body Composition, when compared to the control group.

CONCLUSION

On the basis of the results obtained the following conclusions are drawn:

1. There was a significant difference between experimental and control group on Body Weight after the training period.

2. There was a significant improvement in Body Weight. However the improvement was in favour of experimental group due to six weeks of Surya Namaskar training.

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A STUDY ON IMPLEMENTATION OF CRM FOR CUSTOMER RETENTION IN INSURANCE SECTOR

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ABSTRACT

With digital revolution, customer relationship management is progressively being used in the diverse selection of industries, one of which being insurance industry.

Customer Relationship Management (CRM) started to flourish in the 1990s, to fundamentally change the business and customer dynamic.

Currently CRM is aiming to deliver on its promise of highly personalizing customer relationships with prospective consumers.

Customer Relationship Management is a company-wide business strategy which would result in creating client loyalty.

CRM constantly involves the use of technology to categorize, automate, and synchronize sales, marketing and customer service all the while providing technical support.

Insurance companies find it easier to collect information from customers because Customer Relationship Management deals with technology to manage people and use the process efficiently.

With fierce competition existing among insurance companies, the purpose of this study was to evaluate Customer Relationship Management practices and Customer Retention in the sector.

To survive the competition, insurance companies must improve their quality, transparency, and integrity in order to acquire and retain customers in the long term.

The study was carried out to identify crucial elements required for customer retention while undertaking various customer relationship management practices in insurance companies, as well as to develop effective customer relationship management practices to support customer retention by bringing out sustainability in the sector.

The purpose of this article is to look at the different ways customer retention can be done by insurance companies in Chennai.

The main objective of this paper is to investigate the various customer retention techniques and the impact of CRM on customer retention in the insurance industry, as well as the insurance company's CRM practises.

Questionnaire method is adopted for collection of data and the same is used for analysing the objectives of the paper.

INTRODUCTION

Over the last few decades, most of the insurance companies have depleted significantly a very large amount of resources in their pursuit of new business. As important as it is to exploit new businesses that enters emerging markets, it is also critical to retain existing customers and improve customer relationships. Several organisations around the world devote a significant portion of their time, energy, and resources to acquiring new customers. While it is critical to replace lost business, grow the business, and expand into new markets, one of the primary goals is to retain existing customers and strengthen customer relationships. But in reality, the cost of acquiring new customers is exorbitantly higher compared to the cost of retaining existing customers. This means that even a minuscule increase in retention will substantially increase premium revenue by several thousands. Although finding new customers is absolutely essential, the emphasis is on shifting to retaining profitable customers and developing long-term successful relationships with them.

Organizations now heavily rely on big data on their customers, which they process and extract necessary information from. Customer Relationship Management refers to the effective ways of processing information, converting it into valuable information, and leveraging that information to gain competitive advantage over other insurance companies in the market. Information has become a very valuable asset to many organisations in the modern era, and their very existence is dependent on its use.

CUSTOMER RELATIONSHIP MANAGEMENT:

CRM is the infrastructure that enables the identification and enhancement of customer value, as well as the appropriate means to motivate valuable customers to remain loyal. It is about more than just customer management and behaviour monitoring. CRM has the potential to change a customer's relationship with a company while also increasing revenue. Most industries have recognised that high-profile issues such as new customer acquisition and web-based marketing cannot be addressed solely through technology. Customer relationship management is much more to these companies than just a stand-alone venture accounted for by a single organisation, its business philosophy affecting the company as a whole.

There is no such thing as a universal definition of customer relationship management. However, some of the definitions provided by renowned authors are as follows:

"Selling by using psychological rather than economic inducements to attract and retain customers. It seeks to personalize and appeals to the hearts, minds and purses of the mass consumers"

- **James J Lynch**

"CRM is on-going process of identifying and creating new values with individual customers and then sharing the benefits from this, over a lifetime of association. It involves the understanding. Focusing and managing of on-going collaborations between suppliers and selected customers for mutual glue creation and sharing through inter-dependence and organizational alignment"

- **Ian H Gordon**

CUSTOMER RETENTION:

A customer life-cycle consists of three components: customer acquisition, customer retention, and customer development. A customer is brought into the company as part of the organization's goal of expanding. Acquired customers are the foundation of customer retention; without them, there is no churn to prevent or value to increase. Customer retention refers to the efforts taken to keep the customer relationship alive and the customer's profitability intact. It describes customer retention as the long-term maintenance of continued to escalate trading connections with clients.

Customer retention falls somewhere between customer satisfaction and customer value. In comparison to other customers, retained clients continue to repurchase, acquire additional services, and refer services to their inner circle. Once retained consumers, on the other hand, likely to exhibit churning symptoms at some point. The activity of retained customers is tracked and nurtured in order to enhance the customer relationship. At-risk clients are recognized as a separate category, and re-activation measures are implemented to stabilize the threatened connection. The lost client has either drifted silently without informing the company or has discontinued their customer relationship with the company. These lost consumers are valued based on their potential future value to the organisation. The unprofitable ones are allowed to drift, while the potential ones are sent to the win-back program.

CUSTOMER RELATIONSHIP MANAGEMENT IN INSURANCE:

Businesses that use CRM strategically see a significant increase in sales closures. Customer acquisition and retention are also improving. As a result, CRM is critical in all industries. This is especially true in a highly competitive industry such as insurance. CRM plays a variety of roles in the insurance industry. CRM is used by insurance companies to engage with customers in a more personalised manner. This has a positive impact on both sales closures and repeat sales.

In the Indian business landscape, the insurance sector is the most dynamic. Any regulations imposed by the government or changes to existing rules have a direct impact on the margins. Despite being one of the most volatile sectors, it has attracted investments from major international players. Furthermore, due to constant developments and changes, insurance companies must keep themselves up to date.

And, in order to stay ahead of the competition, they must streamline their business operations, manage customer data, and constantly innovate. Though customer data is not the only factor in a company's success, keeping it can be a win-win situation for insurance companies. This is where the significance of CRM in the insurance industry comes into play.

CUSTOMER RENTENTION IN INSURANCE SECTOR:

Customers have a lot of power in today's marketplace for most lines of business in insurance, and they can acquire a new insurance policy with the click of a button. The necessity to visit the agent's office with various documents in hand might be easily avoided with the development of newer technology. In today's world, insurers use a variety of marketing strategies to secure new consumers by expanding their internet and physical

presence. Insurers are attempting to attract clients in a variety of ways, from developing systems that can provide a quote with minimal information to opening direct agent offices in small strip malls near a customer's home.

However, after an insurer has secured clients, tactics for keeping them for a reasonable period of time are required. With competitors constantly attempting to sway newly acquired customers away from insurers, it is important for insurers to place a larger emphasis on their retention strategy. Some of the methods and procedures insurers can take to retain customers are listed below. Retaining a policyholder for a longer period of time allows the insurer to capture more value and again a greater insight.

In a market where the buyer's (i.e., policyholder's) power is high for most kinds of Property and casualty insurance due to the availability of multiple insurers with similar offerings, insurers must focus on their differentiation strategy to maintain a solid ongoing book of business. An insurance firm must concentrate its efforts by developing novel tactics in order to continue serving its present customer base for a longer period of time.

OBJECTIVES FOR THE PAPER

- To study the impact of CRM implementation in Insurance sector

- To study the various strategies used for customer retention strategies in insurance sector of Chennai City

- To examine the CRM practices adopted by insurance companies

METHODOLOGY

The study is carried out by gathering both primary and secondary data. Primary data was gathered by distributing a structured questionnaire to 100 respondents. The respondents are consumers of several insurance companies in Chennai. Secondary data has been used to support the study's conceptual framework. The percentage method is a statistical tool used for analysis and interpretation.

DATA ANALYSIS AND INTERPRETATION:

- 38% of the respondents belonged to the age group of 46 – 55 years, 30% of the respondents belonged to 36 – 45 years, while 23% of the respondents belonged to 25 – 35 years and the rest 9% belonged to age group of 56 and above years.

- 67% of the respondents considered for the study belonged to the female category, while 25% of the respondents belonged to the male category and the rest 8% preferred not to say.

- 47% of the respondents have an educational qualification of post – graduation, 27% of the respondents have an educational qualification of under graduation, 20% of the respondents have an educational qualification of professional degree, while 5% of the respondents with diploma as educational qualification and the rest 1% were a doctor.

- 52% of the respondents are full-time employees, 17% of the respondents are dependent, 16% of the respondents are part-time employees and the rest 15% have various sources of income.

- 51% of the respondents earn a monthly income of above Rs. 30,000, 20% of the respondents earn a monthly income of up to Rs.10, 000, 18% of the respondents earn a monthly income of Rs.10,001 - Rs.20,001 and the rest 11% earn a monthly income of Rs.20,001 - Rs.30,000.

ANALYSIS OF PERIOD OF CUSTOMERS FREQUENTING THE SERVICES OF INSURANCE SECTOR IN CHENNAI CITY:

No. of years	Frequency	Percentage
Less than 5 years	40	40
6 years to 10 years	15	15
11 years to 15 years	12	12
More than15 years	33	33
Total	**100**	**100**

TABLE 1.1
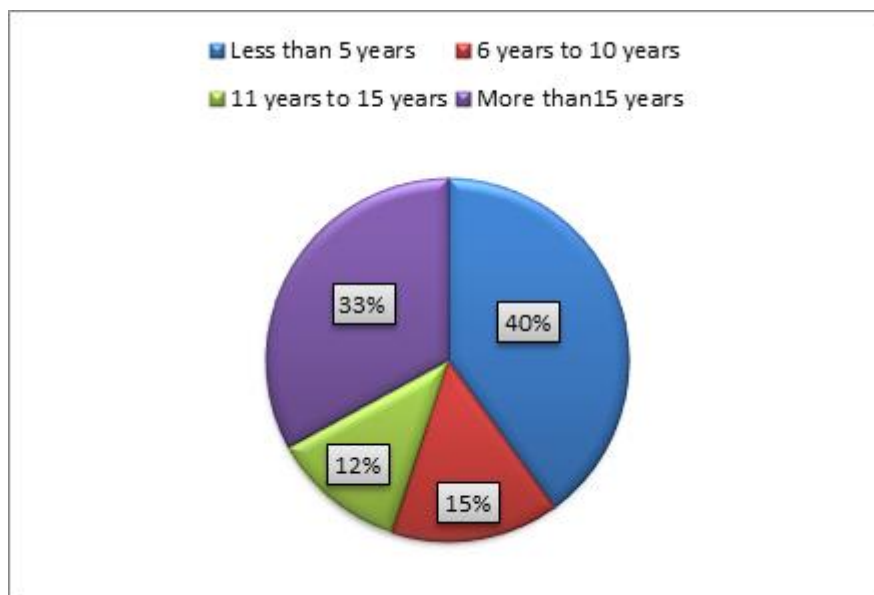
CHART 1.1

Table 1.1 and Chart 1.1 show the period customers frequenting the services of insurance sector in Chennai city. From Chart 1.1 we can infer that 40% of the respondents are using the services for less than 5 years, whereas 33% of the respondents are using it for more than 15 years, 15% of the respondents are using it for 6 - 10 years, whereas 12% of the respondents are using the services for 11 - 15 years

ANALYSIS OF PREFERENCE FOR INSURANCE PRODUCTS (POLICIES)

Product	Frequency	Percentage
Life Insurance	77	77
Health Insurance	63	63
Motor Insurance	58	58
Fire Insurance	9	9
Travel Insurance	17	17
Total	**100**	**100**

TABLE 1.2
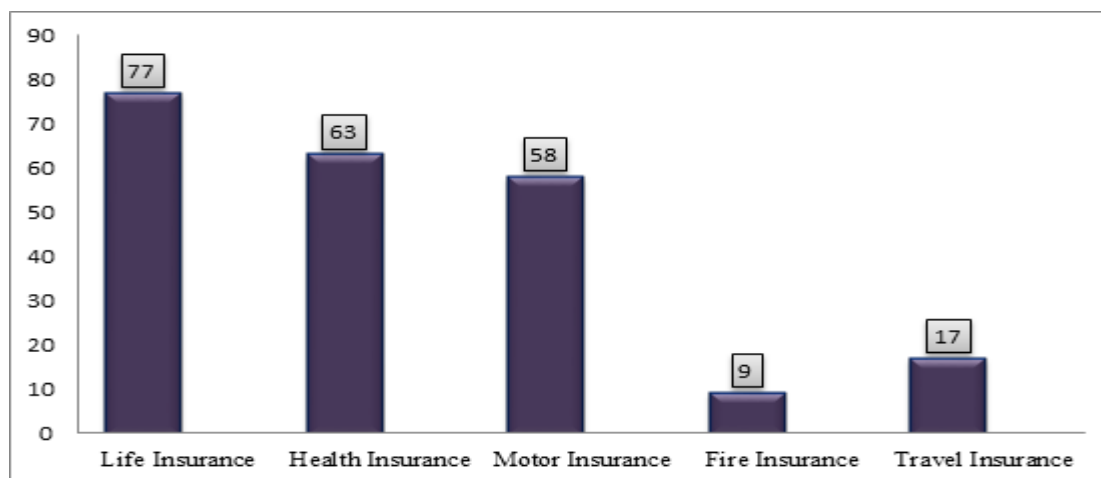
CHART 1.2

Table 1.2 and Chart 1.2 show preferred insurance products by consumers in Chennai city. From Chart 1.2 we can infer that 77% of the respondents prefer life insurance, 63% of the respondents prefer health insurance, 58% of respondents consume motor insurance, while 9% consume fire insurance and 17% are consumers of travel insurance. It was also found that the consumers take up multiple policies at the same time.

ANALYSIS ON VARIOUS FORMS OF INFLUENCES THAT RESULTED IN PURCHASE OF AN INSURANCE POLICY

Particulars	Frequency	Percentage
Advertisements	18	18
Online Search (Google, Yahoo)	12	12
Through a vendor (Insurance agent)	38	38
Friends and Family Recommendation	55	55
Workplace policy		
	43	43

TABLE 1.3
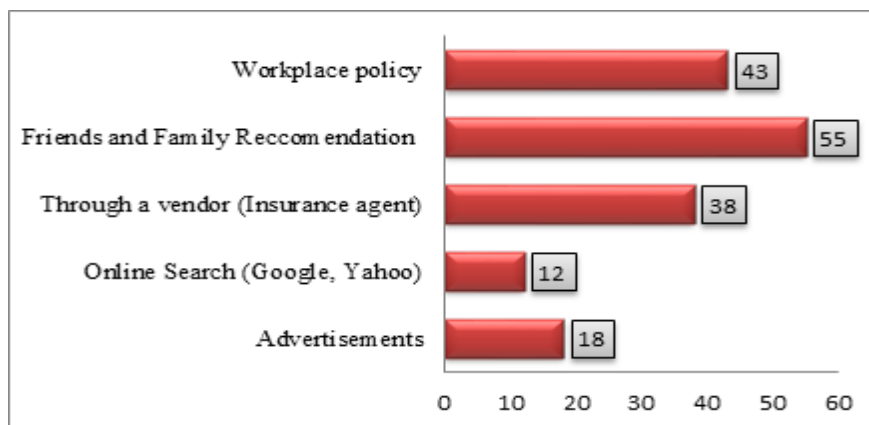
CHART 1.3

Table 1.3 and Chart 1.3 show the various ways that influenced consumers to buy an insurance policy. From Chart 1.3 we can infer that friends and family recommendation (55%) play the biggest role in decision to buy an insurance policy followed by workplace policy with 43% and through an insurance agent with 38%. The least influential factors are Advertisements with 18% and Online search with only 12%

ANALYSIS ON LEVEL OF TRUST AND CUSTOMER SATISFACTION IN THE INSURANCE SECTOR:

Particulars	1	2	3	4	5	Weighted Average	Rank
Level of Trust	85	116	96	32	6	*335*	*2*
Product Satisfaction	85	112	99	34	5	*335*	*2*
Overall Satisfaction	70	160	75	28	7	*530*	*1*

TABLE 1.4
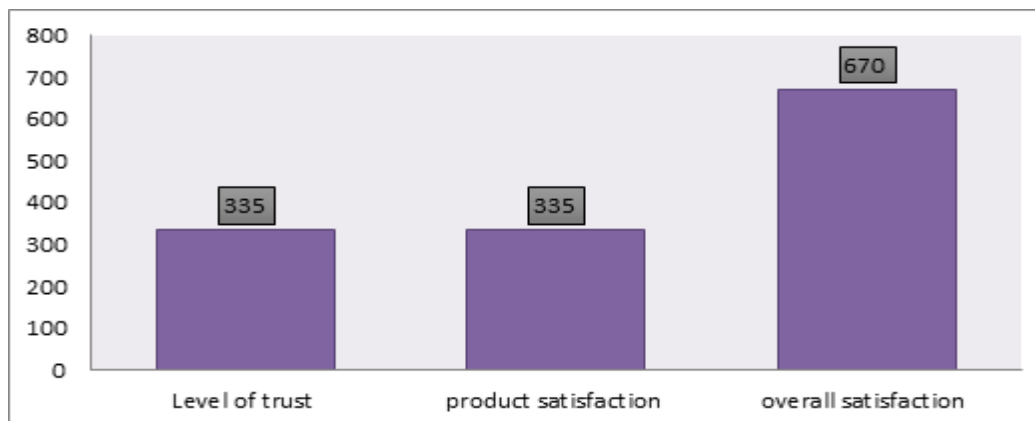
CHART 1.4

Table 1.3 and Chart 1.3 shows through ranking method the respondents give Rank 1 for Overall Satisfaction; Rank 2 Level of trust and Product satisfaction.

ANALYSIS ON DETERMINANTS OF VARIOUS DETERMINANTS OF CUSTOMER RETENTION IN INSURANCE SECTOR

DETERMINANTS	PARAMETERS	FREQUENCY	PERCENTAGE
PRODUCT	Availability of the policy	10	10
	Exclusive features	26	26
	Innovation & customization of products	46	46
	Comprehensive coverage of critical factor	9	9
	Effective waiting period	9	9
PRICING	Transparency	45	45
	Competitive Premium	43	43
	Other Charges	12	12
SERVICES PROVIDED	Cashless facilities	37	37
	24/7 toll free service	23	23
	Regular policy statements	24	24
	Willingness to renew the policy	16	16
RESPONSIVENESS	Addressing the customer	49	49
	Feedback form	18	18
	Expert advisory	33	33
RELIABILITY	Reliability of brand name	40	40
	Confidentiality of personal information	20	20
	Easy and secure premium payment	40	40

TABLE 1.5

Table 1.5 shows the various determinants for customer retention factors used in insurance sector. From this we can infer that while choosing a policy respondents look for innovation and customization of the policy, in pricing customers look from transparency along with competitive premium, while seeking the services provided by the insurance company respondents look for cashless facilitates, when looking for responsiveness respondents look for the way customers are addressed and lastly in reliability respondents look for secure premium payment and brand name.

FINDINGS:

- Majority of the respondents considered for the present study belonged to the female category, of the age group of 36 – 45 years, with an educational qualification of post- graduation.

- Majority of the respondents considered for the present study are choosing their insurance policy based on recommendations from friends and family and it was also noted that insurance consumers take up multiple policy at the same time especially life and health insurance are taken up together .

- Majority of the respondents considered for the present study are on the overall satisfied with the current insurance policies and insurance companies in Chennai city.

- The respondents while looking for insurance policies look for five factors – innovation and customization of product, transparency in pricing, cashless facilities, along with easy and secure premium payment options.

LIMITATIONS OF THE PAPER:

- Due to time constraints, the study was conducted by taking a small sample of 100 respondents.

- Due to time constraints, the study was confined to Chennai city.

- The current study covers only a limited number of insurance companies located in Chennai city.

CONCLUSION:

According to the findings of the study, the majority of respondents are satisfied with the current state of the insurance industry in Chennai. Among the numerous types of insurance policies, respondents prefer to purchase life insurance in addition to health insurance. It was discovered that respondents purchase insurance policies based on the recommendations of friends and relatives. This study aided in identifying the numerous parameters that consumers consider when selecting an insurance provider and its plans. Because the use of customer relationship management is still in its early stages in India, insurance companies and consumers are still learning how to use the data created correctly, and they continue to face several challenges. As a result, insurance businesses must always make attempts to retain existing customers using the data offered, as well as take steps to employ CRM technology effectively.

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THE MONSTERIAL GROWTH OF DIGITAL MARKETING AGIES OF KNOWLEDGE VIEW

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ABSTRACT
Digital marketing is the avenue of electronic communication which is used by the marketers to endorse the goods and the services towards the market place and this paper will give a great insights on the types of digital marketing and government supported digital india scheme

INTRODUCTION
Digital marketing , also called online marketing , is the promotion of brands to connect with potentials customers using the internet and other forms of digital communication .this include not only email.,social media , and web based advertising . e-business technologies are opening up an extradinary new range of possibilities for firms in terms of marketing products and services to consumer and business customers , and in creating and managing relationships with those customers. This may no longer therefore be a process of which firms are necessarily fully in control.

OPPORTUNITY THE DIGITAL MARKETERS
In developing a marketing strategy , organizations focus on the ways in which they can create and capture value for their customers. This requirs them to :

- Undertake some form of market analysis , better to understand the situation within which customers needs can be met and what customer value can be understood

- Identify a specific target market based on some kinds of segmentaion process leading to the identification of groups of consumer in relation to whom the product or services value proposition can be developed and positioned

- Carry out a programme of actions in the market to ensure the sale of the product or service which might include the way in which it is designed , promoted , and distributed , with a price designed to signel value – action often collectively referred to as the marketing mix .

THE EFFECTS OF E-BUSINESS TECHNOLOGIES ON MARKETING STRATEGY
It is clear from this that while the fundamental objectives of marketing have not changed with the advent of e-business technologies , such technologies, such technologies have the potential to change the ways in which many kinds of products may be marketed. This is of course most obvious for products which have themselves become digital , such as recorded music and videos.

SOME FACTS ABOUT INDIAN DIGITAL MARKETING INDUSTRY
- As per a report by IAMAI and Boston consulting India has one of the largest and fastest   growing populations of Internet users in the world—190 million as of June 2014 and growing rapidly. Internet Users Mark in 2020

- According to Direct Marketing Association,

Digital Marketing Industry is worth$62 billion phones and tablets rose 180 percent, to $4 billion

in 2014 Times, New Delhi digital advertising space in India is worth Rs. 6000 crore and video is Rs. 1600 crore of that. In 2016 the digital ad space will grow to Rs. 8100 crore and video will grow faster than search and classified. According to a research firm eMarketer ecommerce sales in India are expected to grow from $14 billion in 2015 to $55 billion in 2018. India has seen the fastest growth in retail ecommerce among Asia-Pacific countries, surging 133.8% in 2014 and 129.5% in 2015. The combined gross merchandise value, or total value of sales of country's top three ecommerce places i.e. (Flipkart, Amazon and Snapdeal) in 2015 was $13.8 billion exceeded that of the top 10 offline retailers, which stood at $12.6 billion for the same period 60% of web users in India visit online retail sites. Of the total online market products, consumer durables account for 34 per cent, apparel and accessories 30 per cent, books

15 per cent, beauty and personal care 10 per cent, and home and furnishing 6 per cent. Over 50 per cent of sales in these product categories take place in non-metro cities Majority of screen time still captured by Social

Media

Today, digital marketing industry in India is growing at its peak, and is still continuous. Many factors are responsible for this growth. The use of communication tools has greatly changed in the year past. No one ever thought to have a credible deal online. The below figure indicates the digital marketing statistics. The belief was that online information is virtual information full

of lies. No one could listen to any online advertisement not to talk of purchasing groceries, furniture or clothes. The story has really changed. Everything from marketing to sales can be done online. This is due to the trust that has been restored back to online communication in India. This has really helped the marketing initiatives. The revolution is from the communication industries. Low cost of handset is now available making it possible for India to have about 600 million internet users which ultimately creates a fascinating business opportunity to sell to a growing population.

E-COMMERCE AND ADVERTISING FACTS FROM INDIA

E-commerce in India is said to be the largest and most profitable for a new business start-up. India's Digital advertising market has grown at 33% annually between 2010 and 2016. E-Commerce in India is currently at 2 Lakh Crores and is predicted to grow 5 Lakh Crores in 2017.77% of online users buy products exclusively on Social Media.8% of Indian Internet Users has purchased at least one product online and by 2019 it is expected to grow by 64.4%. 59% users shop on tablets, 69% shop on Mobile devices, and 38% shop on weekly basis. 50% of shoppers buy products online based on recommendation through social media networks and 74% of customers rely on social media for making their

purchase decisions. The sale of physical goods via digital channels

in India amounted to 16.8 Billion U.S dollars in revenues.

Digital india

India has the second-fastest rate of growth of digital adoption in our comparison set. Seventeen

mature and emerging digital economies were considered, including Brazil, China, Indonesia,

Russia, South Korea, Sweden, and the United States. India's digital index score has moved from 17 in 2014to 32 in 2017 (on a scale of 0 to 100), second-fastest rise after Indonesia. India has performed well on e-governance and digital identity, the rate of growth of mobile internet access, and the uptake of digital media by online consumers. For instance, India's monthly mobile data consumption per user, at 8.3 gigabytes (GB) per month, is over 54 times the figure in mid-2016 and higher than countries like China at 5.5 GB per user, and comparable to digital leaders like South Korea at 8-8.5 GB per user.7The Digital India programme, launched in July 2015,is a flagship programme of the Government of India with a vision of transforming India into a digitally empowered society and knowledge economy. In line with the Honourable PM Shri Narendra Modi's vision of ensuring that technology is "accessible, affordable, and addsvalue", the Digital India initiative was aimed at improving the life of the common person. The programme centres on three key vision areas: a) digital infrastructure as a utility to every citizen, b) governance and services on demand, and c) digital empowerment of citizens. The PM said that India may have missed the Industrial Revolution, but it will not miss the information technology revolution. Echoing his sentiments, the Honourable Minister of Electronics and IT, Shri Ravi Shankar Prasad, calls the programme transformational in nature, which will strengthen the youth and future of India. Three and a half years later, India is in a sharply accelerating "liftoff" phase of its digital journey.

Having built a strong foundation of digital infrastructure and expanded internet access through some 560 million subscriptions, India is poised for the next phase of growth — the creation of tremendous economic value and the empowerment of millions of Indians as new digital applications permeate and transform a multitude of activities and types of work at a national scale.

Over the last three and a half years, the government has taken up initiatives across many spheres, including e-governance, skills, and digital infrastructure, that have shown significant impact on the way that the nation lives and works. This study is a timely effort to take stock of the

digitally enabled change that is under way in India and lay out a vision and road map for the coming years.

India is among the top three global economies in number of digital consumers. With 560 million

internet subscriptions in 2018, up from 238.71 million in 2013, India is the second-largest internet subscriptions market in the world.4 Likewise, India has the second-largest number of instant messaging service users worldwide, behind China
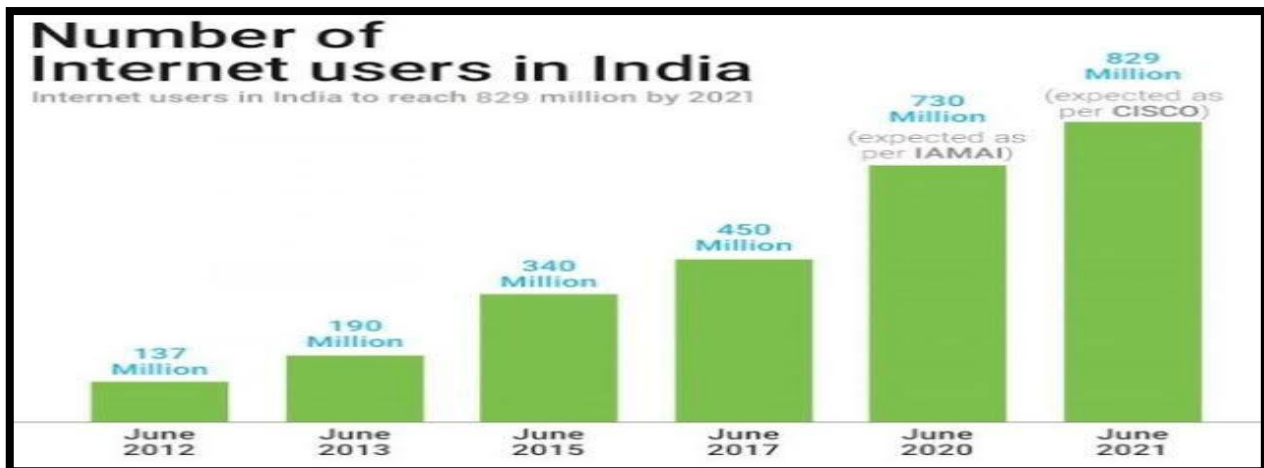
EFFECTIVE WAYS OF DIGITAL MARKETING
In order to achieve success one suppose to move in the following manner

- Plan - Create a structured plan and roadmap by reviewing your current weaknesses and the opportunities to boost online leads and sales.

- Manage - Review your marketing activities, so that you know where to focus to get the Quick Wins which will make the biggest difference

- Optimise - Learn the best practices and success factors to help you compete to get better results

It is no exaggeration that you live in a digital world and from that perspective it is imperative that your business has an impressive presence in the digital space.In essence, digital marketing is the future of marketing in the world with the added advantages that it is cheaper than traditional marketing and is measurable. Let"s list the different ways you can use the digital medium to popularize and drive conversions for any startup or business.

a) . Search Engine Optimization (SEO)
In layman"s terms, Search Engine Optimization or SEO is essentially tweaking your website so that it comes up naturally or organically for search results in Google, Yahoo Bing or any other search engine. Google updates its algorithms regularly so that only the relevant results come up. From that perspective, many experts say that SEO is dead and the effort is futile. However, the truth is that Google tries to prevent algorithm manipulation

and filters sites that don''t deserve to be on the top of SERPs (Search Engine Result Pages). So there is no doubt you should invest in SEO work. Your website should address the technicalities related to content and query matching, spidering, indexing, and interpreting non-text content. Remember, it is the most cost-effective marketing strategy that will bring organic traffic to your business.

b) Search Engine Marketing (SEM)

Search Engine Marketing or SEM is the comprehensive strategy to drive traffic to your business, primarily through paid efforts. Hence it is also called Paid Search Marketing. The universe of SEM is diverse and complicated.Based on your business structure, you may choose PPC (pay-per-click) or CPC (cost-per-click) model, or CPM (cost-per-thousand impressions) model. There are different platforms for SEM. By far, Google AdWords (on Google Network) and Bing Ads (on Yahoo Bing Network) are the most popular.

SEM also includes Display Advertising, Search Retargeting & Site Remarketing, Mobile Marketing and Paid Social Advertising

c) Content Creation

Content can be presented in different formats, including blogs, white papers, e-books, case studies, how-to guides, question and answer articles, forums, news and updates, images, banners, infographics, podcasts, webinars, videos, or content for microblogging and social media sites. All recent changes to Google''s algorithm - be it Panda, Penguin or Hummingbird - point to the fact that content is the most important metric while filtering search results. You can be creative and create content on any topic and then skillfully link it indirectly to your business. You may like to read our article on how to include content and market your startup or business free of cost. Also, you need to customise your content for different platforms. For example, the content for mobile phones should be crisp and short. Remember, an effective strategy will engage your readers and leave them interested in more information from you. Good content is shared and is the best way for branding your business.

d) Social Media Marketing (SMM)

Social Media Marketing or SMM is an offshoot of your SEM efforts. It involves driving traffic to your sites or business through social sites like Facebook, Instagram, Twitter, Pinterest, Google+, Linkedin, etc. As we mentioned above, good content is shared and liked.So create and customize content for different social media platforms. Remember to be prolific and original; you need to engage with users on a daily basis, at least four to five times a day. Your SMM efforts can be especially helpful for branding and driving sales.

e) Digital Display Advertising

This again is a subset of your SEM efforts. You may use a variety of display advertising formats to target potential audience - be it text, image, banner, rich-media, interactive or video ads. You can customise your message based on interests, content topics, or the position of the customer in the buying cycle. However, note that Digital Display Advertising is relatively costly. You need experts to drive good ROI for your business.

f) Retargeting and Remarketing

Essentially, Retargeting or Remarketing is a strategy to target customers who have already visited your website. It is based on cookie technology. Retargeting has emerged as a preferred strategy as you target customers who have already shown interest in your business; and hence the conversion rate is high. You may engage in Retargeting on your site, or on social network or on the mobile. Visualise your strategies based on the customers' buying cycle.

g) Mobile Marketing

The website, apps and content is being customized for mobile devices. The mobile users are growing day by day and it is the most effective way of marketing.

Interactive Marketing

Make sure your advertising strategy engages the potential customer in a conversation. According to a survey by ExpoTV.com, 55 percent respondents preferred to have ongoing communications with the companies they buy from; and 89 percent felt more loyal to the companies if they were invited to provide feedback. Use tools like widgets and opt-in features to make your website interactive, solicit feedback and track user behaviour. Engage with the customers actively and customize offers based on their preferences and browsing activities.

i) Viral Marketing

Viral Marketing is a strategy where a unique content spreads exponentially online, because the content is appreciated, shared and liked immensely. This is a great way to brand and drive traffic to your website. The content can take any format; all you need is to be creative.

j) Email Marketing

When you send a commercial message through email to a list of potential customers, the strategy is called Email Marketing. With an effective email marketing software, you can maintain email lists that are segregated based on several factors, including customers" likes and dislikes, and spending habits. Remember to send personalized emails; this helps to develop trust. However, note that Email Marketing may also be considered as spamming and there are laws against it in some countries.

k) Affiliate Marketing

Affiliate Marketing is a performance-based marketing program, where you pay publishers who bring you customers. The performance may be based on conversions - promotions, leads or simply sales. You may like to be part of the affiliate programs of different publishers. Essentially, the publishers will give you space in their pages to advertise your business and help you drive conversions; and you will pay them based on the compensation model. You may avail the help from an Affiliate Network, which will give you a large base of publishers, and other benefits like tracking and reporting technology. Affiliate Marketing is especially useful for startups, as it will bring in more traffic to their business through high-traffic sites. In essence, Affiliate Marketing is a win-win situation for both the merchants and publishers. Sites like Amazon, eBay, LinkShare and Flipkart run Affiliate Programs. In fact, most online businesses with appreciable traffic have their own affiliate programs.

l) Digital Media Planning and Buying

When a media agency researches and makes a comprehensive strategy framework, we call it Digital Media Planning. Be it in driving sales or conversions, launching a new brand or promoting an established brand, or changing customer behaviour, the media agency plans different platforms and formats to reach the desired audience. It studies reach and frequency of different web-based and mobile applications. The agency works with different partners and buys relevant space and ideas. This is called Media Buying.

m) Web Analytics

Perhaps, the most important aspect of your Digital Marketing is Web Analytics. Essentially, Web Analytics helps you to collect, measure, understand, analyze, plan, report and predict the web activitiesfor your business. Web Analytics should not be confused with Web Statistics. As opposed to simple reporting, Web Analytics gives you analyses and different angles to ponder vis-à-vis your business. Some of the important Web Analytics tools are Google Analytics, Spring Metrics, Woopra, Clicky, Mint and Chartbeat. It goes without saying that every advertiser should use Web Analytics to understand his business and improve the ROI and conversions.

- According to a report, India will cross 500 million

- According to eMarketer, advertising via mobile

- According to a report published in The Hindustan

The digital marketing tool kit

First – generation digital marketing tool

Tool	Description	Commercial application examples
Email marketing	Targeted communication composed and transmitted from a computer	Email marketing service www.e-dialog.com
Online advertising	Commercial messages placed on third party web sites	Ad serving businesses www.doubleclick.com
Podcast/ video Podcasts /webcasts	Digital media files distributed via electronic networks and listened to an mp3 player	Podcast aggregator www.podcast.com
Referrals and affiliate marketing	Revenue sharing between online advertisers / merchants and other online publishers	Commission junction www.cj.com

Search marketing	Websites promotion through optimization of search engine results pages	Google adWords www.gooogle.com/adwords

Second generation digital marketing tools

Blogs	Online journals or webpages	www.shinyshiny.tv
Online gaming	Massive multi-player games or networked games consoles	Word of warcraft www.wordofwarcraft.com
Mashups	Integration of data from more than one source into a single application	Mapdango www.mapdango.com
RSS/ atom	A standard for web feed subscription to frequently update content from blogs , news sites etc	
Social networks and fora	Online aggregation of common interests , talent , or knowledge created and maintained by end users commercially these can be manifested as brand communities	Harley Davidson user forums www.hdformus.com
Virtual worlds	Holistic online environments	Second life www.secondlife.com
Widgets	Programmes allowing immediate access to specific web based content	Clearspring widget networks www.clearspring.com
Wikis	Collaborative publishing vehicles , outsourcing content to end users	Enterprise wiki businesss service firm www.atlassian.com/software/confluence

CONCLUSION

New technologies in digital marketing has moved a great deal . the market approach has also enolved with the rise of new technology . digital marketing has a number of advancement and improvement in its strategy , so it is important to know the conclusion of digital marketing . keep reading this article to know more about it

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OPPORTUNITIES FOR WOMEN ENTRPRENUERS IN INDIA

Dharani S

ABSTRACT

India is male dominated country where women are always considered as a weaker section and were recognized as inferior as compared to male counterparts. This differential treatment proved to be the major obstacle in the way of women development in all fields of life especially in entrepreneurship. Women entrepreneurs have a many skills and initiatives a new idea and take good decision. They play a vital role in MSME they have a many opportunities in India. Here, the researcher explains about what are the opportunities for women entrepreneurs

INTRODUCTION

The term "women entrepreneur" deals with that section of the female population who venture out into industrial activities i.e. manufacturing, assembling, job works, repairs/servicing and other businesses.

Women entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. Women are expected to innovate, imitate or adopt an economic activity to be called women entrepreneurs. The Government of India has treated women entrepreneurs of a different criteria-level of women participation in equity and employment position of the enterprise.

According to Kamal Singh, A women entrepreneur can be defined as a confident, innovative and creative woman capable of achieve economic independence individually and collaboration, who generate employment opportunities for others through initiating, establishing and running the enterprise by keeping pace with her personal , family and social life

According to Ruhani J. Alice, "Women entrepreneurship is based on women participation in equity and employment of a business enterprise Women Entrepreneurs – Concept

Functions of Women Entrepreneurs

Frederick Harbison has enumerated the following five functions of a women entrepreneur

- Exploration of the prospects of starting a new business enterprise

- Undertaking of risks and the handling of economic uncertainties involved in business

- Introduction of innovations or initiations of innovations

- Coordination, administration and control

- Supervision and leadership

Quality of women entrepreneurs
- Accept challenges
- Ambitious
- Hard work
- Patience
- Motivator
- Adventures
- Conscious
- Educated

- Intelligent

Objectives

- To know about the scheme for women entrepreneurs by India government

- To know about what are the kinds of loans available in the bank

RESEARCH METHODOLOGY

Research design: Empirical research used in this study for the purpose of collecting the secondary data. All the data are gathered from text books, journals, academic reports, company website and   published conference papers.

GOVERNMENT SCHEMES FOR WOMEN ENTREPRENEURS IN INDIA
ANNAPURNA SCHEME:

This loan is provided to women in the food catering industry, still establishing their small scale businesses. The loan allows these women entrepreneurs to avail it as capital requirements like buying equipment and utensils, setting up trucks, etc. Under this scheme, women can sell packed food items and snacks which is one of the most common businesses that women entrepreneurs scope out and excel in since it is something that housewives have been managing all their lives and are accustomed to.

BHARATIYA MAHILA BANK BUSINESS LOAN:

This banking scheme supports women and their businesses on a large scale that is why it was created in the first place. Women have ventured into different fields of business and are constantly pining for success. This bank has the vision to provide economic empowerment to women. The loan limit via this source is Rs.20 Crores.

MUDRA YOJANA SCHEME

It is a Government of India initiative that aims to improve the status of women in the country by providing **business loans** and supporting them so that they can be financially independent and self-reliant. After approval of the loan, theywill be given Mudra cards that work like credit cards with the withdrawal limit being 10% of the loan. This scheme has several different types of plans as per business type, level of expansion, and loan aim. The loan limit under this scheme by the government is Rs. 10 Lakh.

ORIENT MAHILA VIKAS YOJANA SCHEME:

This scheme is for women who hold 51% share capital separately or collectively as a proprietary concern. It is a very good opportunity for these stakeholders to help expand their business and add to the development of their field. This scheme does not require collateral security while also giving a concession at the interest rate of up to 2%. The period of repayment is flexible up to 7 years and the loan limit is Rs. 25 Lakh.

DENA SHAKTI SCHEME:

This scheme is also for women entrepreneurs but limited only to those in the fields of agriculture, retail, manufacturing, are small enterprises or micro-credit organizations. As per RBI limits, the maximum ceiling limits to women beneficiaries are also provided according to the sector they are expanding or planning to open a business in. The loan limit is Rs.20 Lakh.

PRADHAN MANTRI ROZGAR YOJANA:

Also known as PMRY, this is one of the best schemes for women entrepreneurs both socially and financially. The focus of this scheme is on creating skill-based, self-employment through women entrepreneurs and smart minds at work being utilized for monetary independence. This scheme covers both urban and rural areas and was developed through several amendments in cost, eligibility, and subsidy limits. The loan subsidy amount is up to 15% of the project cost with an upper ceiling of Rs. 12,500 per borrower as a restriction. The scheme applies to all types of ventures in industries, trade and services. The age limit is 35 years and loan limit for business is Rs. 2 Lakh while for service and industry, Rs. 5 Lakh.

UDYOGINI SCHEME:

This program encourages women to be self-reliant and help them in self-development by empowering them economically to be able to do so. This scheme encourages budding women entrepreneurs by providing loans in the regards and giving good rates of interest in comparison to private sector skyrocketing rates, while also being a trustworthy source of lending. This is only valid for those who have a family income of less than Rs. 40,000 per annum. They especially encourage loans in the trade and service sector and the cap amount for the same is Rs. 1 Lakh.

CENT KALYANI SCHEME:

The scheme is targeted at both new businesses and those that aim to grow and expand; the only specific emphasis is on the scheme being for Women Entrepreneurs. Retail trade, education and training, and self-help groups are not eligible for the scheme. The eligible categories are given in detail with the rules on their website. This loan is a **collateral-fee loan** as well as zero processing fees. The selected eligible categories of business women can take the loan and expandtheir business through these schemes for women entrepreneurs. Under this scheme, the loan limit is Rs. 100Lakh.

MAHILA UDYAM NIDHI SCHEME:

This scheme aims to meet the gap in equity. It promotes MSMEs and small sector investments in different industries to grow and excel in their areas. This also encourages the reconstruction of SSI units that are deemed incapable but are actually viable to save. A period of 10 years is given to the debtor to repay the loan and the limit for the loan is Rs.10 Lakh.

Women Entrepreneurship Platform (WEP)

The government of India through NITI Aayog has started an initiative called the Women Entrepreneurship platform that brings together the women entrepreneurs and sponsors willing to support them in one place. If you are a budding women entrepreneur you can join this community. Here is what they do in WEP:

- Incubation and acceleration program for businesses in their initial stages.
- Skill training and mentorship programs to teach entrepreneurship and leadership.
- Assistance in marketing.
- Support for ensuring compliance with laws and regulations.
- Funding and financial assistance.
- A community and network of like-minded women.

Training organizations have been advised to keep in mind the following:

- In the pre-training component, the need for identification of industrial opportunities consistent with the knowledge, skills and personal background of trainees.

- The facility for the training part could include women trainers so as to help participants to open up and discuss their problems freely.

- Women trainees should be motivated to set up modern small-scale units, for example, in electronics, engineering, plastics and chemicals, rather than conventional female enterprises.

- The extension services should be tailored to the special needs and problems of women entrepreneurs, such as the long lead time invariably required by them to complete procedural formalities, arranging finances and tying up marketing arrangements.

- Apart from knowledge and skill inputs, demonstration of entrepreneurial initiative and exposure to actual industry operations through field visits should receive due weight.

- Post-training escort services would be provided by the conducting agency till the projects taken up by women entrepreneurs reach their break-even stage.

Banks offering business loans for women

There are various banks offering loans exclusively meant for women entrepreneurs. However it is important to a well-informed decision by understanding all calculations and clauses of lending schemes being offered by different banks. Some of the online business loans for women in the country are:

Listed below are the various banks and financial lenders offering business loans for women:

BANK NAME	INTEREST RATE	LOAN AMOUNT	REPAYMET TENURE
Central Bank of India	• 8.75% p.a. for loans up to Rs.10 lakh • 9% p.a. + tenure premium for loans above Rs.10 lakh and up to Rs.1 crore	Up to Rs.1 crore	Up to 7 years
State Bank of India	Lower than base rate – will be set as per the terms and conditions set by SBI	Up to Rs.5 lakh (Unsecured)	As per the terms and conditions set by SBI
Bharatiya Mahila Bank	As per the terms and conditions set by Bharatiya Mahila Bank	Up to 1 crore	Up to 7 years
Bank of Baroda	As per the terms and conditions set by Bank of Baroda	Up to Rs.1 crore	As per the terms and conditions set by Bank of Baroda
Lending Kart	As per the terms and conditions set by Lending Kart	Up to Rs.1 crore	Up to 12 months
Fullerton India	13% p.a - 21% p.a	Up to Rs.50 lakh	12 months – 48 months
Tata Capital	19% p.a. onwards	Rs.5 lakh – Rs.50 lakh	12 months – 36 months

CONCLUSION

Women entrepreneurship in India faces many challenges and requires a radical change in attitudes and mindsets of society. Therefore, programs should be designed to address changes in attitude and mindset of the people. It is important to promote entrepreneurship among women to improve the economic situation of the women. This can be made possible with the help of education as education is a powerful tool in bringing out the entrepreneurship qualities in a human being. Moreover, attempts to motivate inspire isnd assist women entrepreneurs should be made at all possible levels. Proper training should be given to the women by establishing training institutes that can enhance their level of work-knowledge, risk-taking abilities, enhancing their capabilities. After setting up training institutes, there should be continuous monitoring, improvement of training programs so that they can improve upon the quality of the entrepreneurs being produced in the country.

Undoubtedly the women participation rate in the field of entrepreneurship is increasing rapidly. However, efforts need to be taken at larger scale to give the position in the field of entrepreneurship that they deserve. The actions & steps that have been taken by the government sponsored development activities have benefited only small strata of society and more needs to be done in this area. Effective steps need to be taken to have entrepreneurial awareness and skill development to women.

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STUDY OF ONLINE SHOPPING BEHAVIOUR FOR LUXURY PRODUCTS: AN INDIAN PERSPECTIVE

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ABSTRACT

The purpose of the study is to determine the factors impacting the purchase of luxury goods through online platforms and in the presence of social media in Indian Market precisely and is directed towards understanding the online shopping behaviour of the luxury buyers.

The study takes a quantitative approach where 166 responses are collected from all across India through a structured questionnaire. The data collected is analysed using Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Multiple Linear Regression, ANOVA and t-tests.

The results of the study identify five important factors from the EFA and CFA conducted. The level of satisfaction amongst consumers while purchasing luxury goods online is influenced by its Exclusivity, Customisation, Support Services and Refund Processes. It is interesting to know that the level of satisfaction of online luxury goods purchase is not influenced by social media.

The study identifies four factors that contribute towards the phenomenon of purchasing luxury goods online. Although mostly consumers prefer in store experiences for luxury products, these four factors are seen to prospective keys towards online purchasing of the same. The main motive of the study is to identify the factors that influence a consumer to buy luxury goods through online modes and determine the significant factors contributing to the process.

Keywords- Luxury; Brands; Online; Purchase; Goods; Social media

INTRODUCTION

The popularity of luxury brands all over the world is very noticeable. The experiences provided by the stores to a consumer when they go for purchasing a luxury product is often surreal. However, keeping in mind the market situation post pandemic, consumers have indulged 0themselves in the process of online shopping. According to (Digital Commerce 360 Staff, 2021)the sales for online retail have increased a 32.4% in 2020 and the ones recorded for the first quarter of 2021 is 39%. Considering the case of luxury products (Sabanoglu, 2021)stated that through digital modes, luxury buyers do now have the ability to get involved with similar in store experiences but through digital platforms. The service encounters involved with the luxury category of products is often very different from that of the traditional nature of services(Holmqvist et al., 2020; Ko et al., 2019).

Luxury shopping has been one of the prime areas of focus for various researchers either in the spectrum of marketing or in case of tourism. Although the definition of luxury is often embedded in the perspective of the consumers, researchers have arrived at certain basic components that make up luxury products- good quality, scarce material, high price and involving a complex production process(L. Zhang & Zhao, 2019). Luxury brands have been defined as those brands offering a high quality of products, which are expensive along with being non-essential but are often recognised by consumers as rare, authentic and prestigious(Li et al., 2012; B. Zhang & Kim, 2013; L. Zhang & Cude, 2018). The association of luxury brands mostly lies with its premium quality, uniqueness and expensiveness(Hudders & Pandelaere, 2012; Tynan et al., 2010). The purchase of luxury brands depict a symbol of social status, identity and a good reputation amongst peer . The three types of values being identified by researchers in the recent literature to hold the dimensions of luxury include functional, symbolic and experiential values (Alan et al., 2016; Shukla et al., 2015).

There are several factors that impact the use of luxury products amongst consumers.(Alan et al., 2016)mentions the role of social media, perceived value, loyalty, satisfaction to be the factors influencing the purchase of luxury products. (Ko et al., 2016a) stated fashion consciousness, financial aspects, hedonic and utilitarian benefits to be some of the notable factors in luxury purchase. (Cheah et al., 2020) highlighted an interesting impact of price, trust , attitude and surgophobia which indicates a psychological feeling depicting as if been taken advantage to cause an impact on the luxury purchases. However, with the advent of online stores for every brand, the luxury shopping experience through online mode is an interesting novel aspect raising importance amongst consumers. In the next section the same aspect is discussed.

Luxury Shopping Experience in the Digital Era

The advent of technological methods amongst the functioning of brands have provided them with various ways to satisfy their consumers (Calantone et al., 2018; Correa et al., 2010). The luxury brands have also been adopting several such methods and especially the ones that help them indulge in a 24 hour service spectrum for their consumers i.e. chatbots (Dhaoui, 2014; Godey et al., 2016; Ko et al., 2016b). These concepts often ensure providing the consumers paying premium prices for their purchases with superior quality services. (Chung et al., 2020)mentioned that these technological interventions help luxury brands to provide customisation, entertainment, trendiness and problem solving remedies. Customisation have been mentioned as one of the important components of luxury brands(Leban et al., 2020; Shah & Murthi, 2021; Zollo et al., 2020) and even in online mode the same must be maintained well. Customisation thus forms an important part of the research here.

H_{01} : The customisation process in luxury products influences the level of satisfaction for online luxury shopping.

(Park et al., 2021) mentioned the importance of exclusivity to be an important aspect of luxury brands and purchase of these luxury brands through online modes must ensure the retainment of perceived quality, perceived value including social, functional and personal values while the role of word-of-mouth and perceived social status is present. Exclusivity in luxury products are one of the key drivers motivating luxury purchasing especially for the ones who are new into buying luxury products (Bazi et al., 2020; Wang et al., 2021). In light of the sale of luxury brands online it is one of the important factors to focus on.

H_{02} : There is a positive association between exclusivity of luxury products on the level of satisfaction of shopping them online.

(Shankar & Jain, 2021) stated the importance of perceived usefulness and perceived ease of use in terms of online search typically causes an impact on the purchase of luxury brands. The requirement to have adequate support services is necessary in order to gain trust from the consumers going for luxury shopping through a digital servicescape. Moreover, the grievance redressal system must be well established through the technological advances used for enhancing consumer experience of shopping from renowned luxury brands. (Javornik et al., 2020)shares the importance of having a proper system to manage the complaints in case of online shopping sites. According to (Yan et al., 2021)most dissatisfaction among consumers can occur from being unable to handle complaints efficiently. As luxury is shopping is a more sophisticated process having effective and dynamic grievance redressal mechanisms with respect to support services and refund process is extremely crucial.

H_{03} : Support services available has a significant influence on the level of satisfaction amongst consumers when shopping luxury online.

H_{04} : The refund process in luxury products influences the level of satisfaction for online luxury shopping

Impact of Social Media on Luxury Shopping

Luxury brands have been highly influenced by the digital revolution. One of major reasons is the ability of social media to connect to the customers in a friendlier manner. Many authors by far has investigated the ability of social media marketing as an influential factor in customer engagement and retention for luxury brands which are been the two most difficult thing for managers of luxury brands to establish otherwise using conventional modes (Ng, 2014). The use of effective communication through social media platform would help in pointing out various aspects of luxury brands like high quality, rich pedigree, rarity, personality and placement especially engaging public figures through social media platforms to drive consumer attention and engagement even after high pricing often considered as an important factor to positively impacts customer engagement and retention(Castellano & Khelladi, 2016; Dhaoui, 2014).

H_{05} : Social media has a significant influence on the level of satisfaction amongst consumers when shopping luxury online

Methods

The study involves the use of a structured questionnaire to measure the required research enquiries. These questionnaire items have been adopted from past literature. The items in the questionnaire are modified and structured in a manner so that it is easily understood by the respondents. Once the questionnaire is prepared it has been reviewed by experts who are well-versed in the concerned field of work. The questionnaire has majorly three parts where the first part consists of 10 items measuring the social media impact on the purchase of luxury products.. The second part of the questionnaire involves 27 items to determine a wide range of factors

influencing the purchase of luxury brand online. The third part enquires about the demographic aspect of the respondents. The questionnaire has been pilot tested using 55 responses and it generated a Cronbach's Alpha value of 0.904 which is within the acceptable range of reliability parameters. Therefore, the questionnaire is put to execution after reliability testing and opinions taken from experts for collecting the final data.

Participants and Procedure
The study revolves around determining the impact of social media and online facilities in the process of purchasing a product from a luxury brand. The study is conducted through an online mode to collect data from relevant respondents all over India. Non-probabilistic sampling has been implemented for the purpose of selecting the respondents. Judgment sampling is specifically used where the criteria laid down is for the respondents to have an experience in buying luxury products online and offline. Further, convenience sampling is used to collect data as per the convenience of the consumers. A total of 200 questionnaires were distributed out of which after discarding the incomplete and incompetent responses, a total of 166 responses are considered for further analyses.

Results
The data collection conducted is analysed and interpreted for the purpose of the study using Statistical Package for Social Sciences (SPSS).

Description of Participants
Demographic composition of the participants in a survey can often lead to many interesting insights. The demographics of the participants in the survey includes 74.1% female and 25.9% male. The concentration of male and female buyers of luxury products represent the findings by (Amirouche et al., 2017)where women are seen to purchase more luxury products than men. Similarly in case of the age group of respondents it is seen that the majority fall under the category of 25-34 years followed by 18-24 years. This supports the research by (Sabanoglu, 2021)where it is seen that 31% of the online luxury brand visitors fall in the category of 25-34 years followed by 18-24 years with 29%. A detailed demographic composition is represented through the table below.

Table 1- Demographic Description of Participants

Demographic Variable		Frequency	Percentage
Gender	Male	43	25.9
	Female	123	74.1
Age-group	18-24 years	72	43.4
	25-34 years	80	48.2
	35-44 years	11	6.6
	Above 45 years	3	1.8
Marital Status	Unmarried	154	92.8
	Married	9	5.4
	Widow	3	1.8
Income Status	Earning	139	83.7
	Not Earning	27	16.3
Education Level	Undergraduate	24	14.5
	Graduate	49	29.5
	Post Graduate	60	36.1
	Doctoral	12	7.2
	Others	21	12.7

Data Processing
The primary data collected through the structured questionnaire would be analysed in three stages. The first stage would be to conduct Exploratory Factor Analysis (EFA) on the 27 items in the questionnaire to extract the relevant factors influencing the purchase of luxury brands online. The process of EFA would be followed by conducting Confirmatory Factor Analysis (CFA) which would validate the extracted factors with the data structure in hand. The second stage of the analysis would involve conducting Multiple Linear factors to determine the factors influencing the purchase of luxury brands online in the presence of social media. Lastly, analysis enquiring about the demographic influence of participants on the factors would be explored using t-tests and ANOVA.

An summary of the 27 items in the questionnaire used for collecting primary data is presented in the table below.

Table 2- Summary of the Questionnaire Items

Variables		Items	Mean	Std. Deviation
Factors influencing purchase of online Luxury Goods	LG 1	I find exclusive deals while shopping from luxury brands online	3.40	1.14
	LG 2	Social media marketing helps me customise the items with ease	3.48	1.03
	LG 3	I can find rare collections from luxury brands using social media marketing	3.48	1.13
	LG 4	I feel a sense of exquisiteness from luxury shopping online	3.30	1.04
	LG 5	I feel this luxury shopping online helps me achieve what I exactly want	3.30	1.18
	LG 6	I can get exclusive luxury items from brands fast due to its availability online	3.44	1.20
	LG 7	Social media help me find the latest trend in luxury shopping	4.00	1.10
	LG 8	Anything trendy on luxury shopping is found on social media	3.95	1.15
	LG 9	Social media facilitates me with personalised information search on luxury brands	3.55	1.08
	LG 10	I think purchase through online modes have reduced the attraction of luxury brands	3.55	1.10
	LG 11	The graphical design for using social media in luxury shopping is appropriate	3.43	1.11
	LG 12	I can find accurate information on luxury brands through social media marketing	3.53	1.06
	LG 13	The information on luxury brands found in social media are useful	3.55	1.11
	LG 14	Social media offers an adequate number of alternative items	3.55	1.09
	LG 15	I get purchase recommendations as per my requirements on social media	3.60	1.09
	LG 16	Product information I get on social media are sufficient to make a buying decision	3.35	1.08
	LG 17	The customer service is always available during opening times for assistance in luxury brand shopping online	3.20	1.00
	LG 18	The customer service representatives are very helpful while shopping luxury brands online	3.28	0.982
	LG 19	The advice of the customer service representatives is competent for buying luxury brands online	3.20	1.04
	LG 20	Social media marketing helps me return products easily	3.49	1.03
	LG 21	Refund processes using online platforms is fast	3.47	1.14
	LG 22	I get discounts while shopping from luxury brands online	3.64	1.05
	LG 23	I get promotional offers due to social media marketing of luxury brands	3.55	1.17
	LG 24	I am very satisfied with the service provided by social media in luxury shopping	3.48	1.07
	LG 25	I believe that using social media for luxury shopping is usually a very satisfying experience	3.34	1.10

	LG 26	I made the right decision when I decided to use social media for luxury shopping	3.30	1.21
	LG 27	I think because of social media marketing luxury brands are now available to all levels of customers	3.66	1.20

Exploratory Factor Analysis

Exploratory Factor Analysis or popularly known as EFA is an efficient statistical method to extract relevant factors from the underlying items considered in a research. The process of EFA helps in understanding the interrelationship between the factors in hand and construct meaningful factors out of them (Hair et al., 2006). The EFA conducted generates two very important parameters to measure the sampling adequacy of the items- Kaiser-Meyer-Olkin's (KMO) and Bartlett's test of sphericity. Both tests that helps in measuring the sampling adequacy and Bartlett's test allows researchers to analyse if the data set in hand is adequate for conducting further statistical analyses. The acceptable range for KMO test is an overall value of more than 0.7 (Tabachnick & Fidell, 2007)which in this case is 0.863. The p-value for Bartlett's test pf sphericity must be less than 0.05 to be accepted which is again held in this case. Thus, the data structure in hand for this research is adequate for further analyses.

The sampling adequacy test being passed, the process of EFA moves forward into the step of factor extraction. The appropriate method of extraction chosen here is one of the most prominent and effective methods i.e. Principal Axis Factoring (PAF). The rotation method paired with PAF here is the varimax orthogonal rotation method which enables the process of maximisation of factor loadings necessary for the procedure. The results generated from the EFA conducted is presented below.

Table 3- Extraction of Factors Summary for Purchase of Online Luxury Goods

	Factor Loadings					
	Factor					
	1	**2**	**3**	**4**	**5**	**Uniqueness**
LG 1	0.543					0.368
LG 2	0.640					0.217
LG 3	0.637					0.350
LG 4	0.824					0.254
LG 5	0.725					0.215
LG 6	0.760					0.203
LG 7		0.771				0.227
LG 8		0.596				0.250
LG 9		0.761				0.212
LG 10		0.506				0.698
LG 11		0.670				0.161
LG 12		0.561				0.247
LG 13		0.751				0.150
LG 14		0.675				0.199
LG 15		0.710				0.234
LG 16			0.618			0.265
LG 17			0.617			0.269
LG 18			0.696			0.244
LG 19			0.630			0.211
LG 20				0.714		0.259
LG 21				0.698		0.261
LG 22				0.617		0.286
LG 23				0.691		0.254
LG 24					0.744	0.145
LG 25					0.638	0.150
LG 26					0.655	0.324
LG 27					0.664	0.255
Note. 'Principal axis factoring' extraction method was used in combination with a 'varimax' rotation						

Tables 3 clearly reveals that there are a total of five factors that can be extracted from the 27 items mentioned in the questionnaire. All of these factors generate factor loadings of more than 0.5 which according to (Hair et al., 2006)is acceptable for the purpose of EFA. These factors based on their characteristics are termed as follows-

Table 4- List of Extracted Factors

Items	Name of the Factor
LG 1 – LG 6	Exclusivity
LG 7- LG 15	Customisation
LG 16- LG 19	Support Services
LG20- LG 23	Refund Policies
LG 24- LG 27	Level of Satisfaction

(nowhere in the literature customisation and refund plicies are bein talked about)

Thus, the EFA conducted extracted five factors from the 27 items in the questionnaire which has eigen values more than one and explains 74.4% of the variance.

Confirmatory Factor Analysis

The five factors generated from the EFA procedure above would be validated with respect to the data structure in hand to determine the model fit indices for the same. Two important requirements before conducting CFA is the reliability and validity of the mentioned factors. The reliability measure is done through Cronbach's Alpha value and the measure of validity is through the Average Variance Extracted (AVE). The suggested Cronbach's Alpha is above 0.7 and AVE must score above than 0.4 (Fornell & Larcker, 1981). The values for the factors are given in the table below.

Table 5- Reliability and Validity

Factors	Cronbach's Alpha	AVE
Exclusivity	0.884	0.482
Customisation	0.917	0.452
Support Services	0.886	0.410
Refund Policies	0.834	0.463
Level of Satisfaction	0.850	0.457

As the validity and reliability values are within the acceptable range, the next step here is to construct the measurement model and determine the model fit.

The path analysis from the measurement model can be represented as follows-

Figure 2- Measurement Model

Table 6- Factor Loadings					
Factor	**Indicator**	**Estimate**	**SE**	**Z**	**p**
Exclusivity	LG 1	0.829	0.0780	10.63	<.001
	LG 2	0.820	0.0678	12.08	<.001
	LG 3	0.737	0.0817	9.03	<.001
	LG 4	0.796	0.0705	11.29	<.001
	LG 5	0.934	0.0778	12.02	<.001
	LG 6	0.942	0.0802	11.74	<.001
Customisation	LG 7	0.772	0.0750	10.29	<.001
	LG 8	0.775	0.0805	9.62	<.001
	LG 9	0.868	0.0702	12.36	<.001
	LG 10	0.369	0.0849	4.34	<.001
	LG 11	0.937	0.0706	13.28	<.001
	LG 12	0.844	0.0691	12.21	<.001
	LG 13	0.972	0.0684	14.20	<.001
	LG 14	0.862	0.0715	12.04	<.001
	LG 15	0.912	0.0690	13.22	<.001
Support Services	LG 16	0.841	0.0717	11.73	<.001
	LG 17	0.804	0.0656	12.25	<.001
	LG 18	0.803	0.0634	12.68	<.001
	LG 19	0.883	0.0656	13.46	<.001
Refund Policies	LG 20	0.719	0.0735	9.78	<.001
	LG 21	0.944	0.0763	12.38	<.001
	LG 22	0.647	0.0787	8.21	<.001
	LG 23	0.996	0.0769	12.95	<.001
Level of Satisfaction	LG 24	0.818	0.0705	11.60	<.001
	LG 25	0.940	0.0693	13.57	<.001
	LG 26	0.866	0.0838	10.34	<.001
	LG 27	0.875	0.0803	10.91	<.001

Maximum Likelihood method is employed to conduct the confirmatory factor analysis. Figure 2 and Table 6 shows that shows that all the paths from the respective factors are indeed significant at 0.05 levels of significanceThe model here generates the respective values for CFI, TLI, RMSEA and RMR as 0.883, 0.904, 0.026 and 0.015. The values being in the acceptable ranges indicate that the factors and the data structure are compatible with each other and the model to be generated would have a good fit.

Multiple Linear Regression
The objective of the research is to determine the factors impacting the purchase of luxury goods online. There are four factors with various characteristics of a luxury product is extracted and a fifth variable measuring the level of satisfaction amongst consumers in buying luxury goods online is found. The multiple linear regression to be conducted here would enable one to see which of the four factors generated have a significant impact on

the level of satisfaction derived. Another independent variable measuring the social media impact on the purchase of luxury goods online would be analysed as well.

Table 7- Model Fit Measures

Model	R	R²	Adjusted R²	Overall Model Test			
				F	df1	df2	p
1	0.924	0.854	0.849	187	5	160	< .001

Table 8- Model Coefficients - Level of Satisfaction

Predictor	Estimate	SE	t	p
Intercept	-0.4603	0.1360	-3.39	< .001
Exclusivity	0.2289	0.0760	3.01	0.003
Customisation	0.4135	0.0554	7.46	< .001
Support Services	0.3216	0.0670	4.80	< .001
Refund Policies	0.2141	0.0463	4.62	< .001
Social Media	-0.0582	0.0498	-1.17	0.244

Interpretation- Tables 7 & 8 summarise the results derived from the multiple linear regression conducted. The model generated from the five independent factors considered has a p-value of less than 0.05 which indicates a statistically significant model. However, it is found that not all factors contribute significantly to the level of satisfaction amongst consumers in buying luxury goods online. The role of social media is seen to be in insignificant as the p-value here is 0.244 and is much greater than 0.05. All other factors however contribute significantly with customisation having the highest variance i.e. 41.3%. The four factors all together determine 0.849 or 84.9% of the variance in the level of satisfaction amongst consumers in buying luxury goods online.

Demographic Relationships

A total of five demographic variables have been enquired about the respondents namely- gender, age, education level, income status and marital status. The four independent variables and one dependent variable extracted variables would be used here. The analyses is done using One-way ANOVA and t-tests to find out the existence of significant mean differences between the demographic categories.

t-tests are conducted for gender income status while One Way ANOVA is performed for age group, education level and marital status. The results are summarised in the tables below

Table 9- Summary of t-tests Conducted

Variables	Gender			Income Status		
	Statistic	df.	p	Statistic	df.	P
Exclusivity	1.441	64	0.886	0.663	164	0.509
Customisation	1.976	164	0.050	1.608	164	0.110
Support Services	-0.322	164	0.748	0.235	164	0.814
Refund Policies	1.658	164	0.099	1.471	164	0.143
Level of Satisfaction	0.775	164	0.440	1.844	164	0.067

Table 10- Summary of One- Way ANOVA Conducted

Variable	Age		Education Level		Marital Status	
	χ^2	p	χ^2	p	χ^2	p
Exclusivity	5.77	0.123	19.9	<.001	5.59	0.061
Customisation	9.89	0.019	14.8	0.005	5.91	0.052

Support Services	9.52	0.023	18.2	0.001	7.33	0.026
Refund Policies	8.87	0.031	33.7	<.001	4.25	0.119
Level of Satisfaction	14.21	0.003	10.4	0.034	7.32	0.026

Table 9 shows that out of the two demographic variables, income status has no significant mean differences existing among the five variables. But in case of gender it is interesting to note that the level of agreement significantly differs on the factor of customisation based on the gender of the consumer. In the ANOVA tests conducted, while education level has significant mean differences with all the five variables, age group differences occur in case of all the variables except exclusivity and for marital status it is in the variables of support services and level of satisfaction that significant mean differences occur. To further know about which exact levels there exists these differences , a pair wise post hoc analysis is being conducted.

Table 11- summary of Post Hoc Analysis Conducted

Dependent Variable	Demographic Variable	Categories of Difference	Significance Level
Exclusivity	Age	35-44 &45-55	0.047
Customisation	Age	35-44 &45-55	0.041
	Education Level	Graduate & Others	0.006
Support Services	Age	18-24 & 45-55	0.033
		35-44 &45-55	0.044
	Education Level	Doctoral & Others	0.029
		Graduate & Others	<0.001
	Marital Status	Married & Widow	0.028
		Unmarried & Widow	0.023
Refund Policies	Age	35-44 &45-55	0.043
	Education Level	Doctoral & Graduate	0.014
		Graduate & Others	<0.001
		Graduate & Post Graduate	<0.001
Level of Satisfaction	Age	18-24 & 25-35	0.038
		18-24 & 45-55	0.022
		35-44 &45-55	0.043
	Education Level	Graduate & Others	0.023
	Marital Status	Unmarried & Widow	0.017

The post hoc analysis reveals some insights into the differences existing in the level of agreement among various demographics of consumers. The age group of 35-44 years and 45-55 years are seen to have significant mean differences in majority of the above factors. The difference in mean score amongst graduate and other educational qualification consumers are also commonly observed. In case of marital status it is the difference amongst the unmarried and widow consumers is there for two of the two factors indicated above.

CONCLUSION

For the first part of the motive 27 items are provided to respondents having experience with shopping luxury goods through a structured questionnaire. These items are then used to extract the relevant factors using exploratory factor analysis and confirmatory factor analysis. The EFA procedure successfully extracted five factors namely – Exclusivity, Customisation, Support Services, Refund Policies and Level of Satisfaction. The extracted factors have also been validated using CFA with the data structure in hand to arrive at a model with acceptable fit indices. From the five factors extracted Level of Satisfaction is used as a dependent variable to determine a consumer's positive purchase intention towards luxury shopping online and the other four factors extracted are treated as independent variables. One additional aspect of the research includes to determine the impact of social media in the process of consumers purchase decision of luxury goods online. Social media is one of the strongest influencers on a consumer's life in today's time and thus a 10 item question is presented to the respondents for their input. The five independent variables are then analysed using Multiple Linear Regression on the Level of Satisfaction to arrive at a model. The parameters generated a statistically significant model with a p-value of less than 0.05. however, interestingly only four of the five independent variables have a significant impact on the dependent variable. Social media although is a strong predictor, in this case there is no significant influence observed in the Level of Satisfaction to purchase online luxury goods. This indicates that

consumers prefer to have stronger inclination towards essential services like exclusivity, customisation abilities, effective support services and dynamic refund processing. It is not the influence of social media that would derive satisfaction amongst consumers when buying luxury goods online. These four factors in total explain 84.9% variance in the Level of Satisfaction and this implies the huge influence these factors have on luxury goods purchase online. The conceptual model can thus be presented as follows-
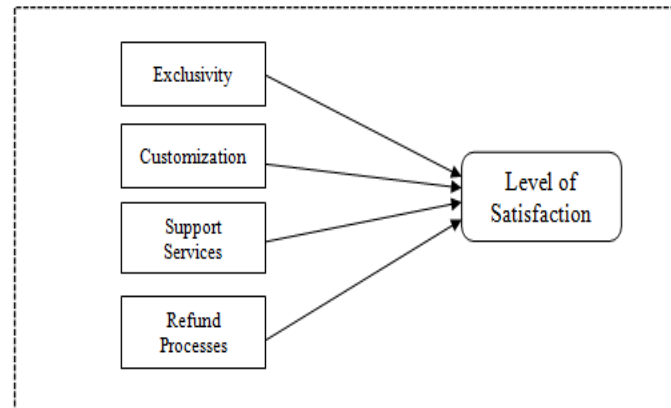

Figure 3- Final Model

The study analysed the significant role of customer demographics with respect to the five extracted factors and it is seen that customisation preferences are different amongst male and female consumers; income status has no such influence; age of consumers show a significant mean difference across all the five factors; education level too has quite a huge impact except for that in case of the factor of exclusivity; and marital status impacts the level of satisfaction and support services agreements.

The study conducted here determines the model fit parameters for the five factors extracted from the 27 items in the questionnaire. This shows that the five factors are indeed very reliable and statistically competent with respect to measuring the level of satisfaction of online luxury goods purchase among consumers. The role of social media has further been incorporated into the regression model to find out its impact. The variable however, do not show any significant inputs into the model. The demographics show a wide range of influence across the various factors ad ascertain the role played by one's gender, age, education and marital status on the online purchase of luxury goods. The research generates an effective model explaining 84.9% of the variance in the level of satisfaction and thus, these factors must be enquired further for their robustness.

Luxury brands have their unique selling points and they often cater to a niche set of consumers. However, with their online presence the consumer reach can be enhanced and with the attractive characteristics of online shopping more consumers can be converted.

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THE DEVELOPMENT AND THEORY OF LITERARY REALISM

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ABSTRACT

The authenticity craftsmanship development of the nineteenth century was an emotional shift from the intriguing and idyllic Romanticism that ruled the workmanship world in the a long time earlier.

Literary Realism, specifically, presented a better approach for composing and another age of creators whose impact can in any case be found in American Literature and English Literature right up 'til today.

Literary realism is a literary movement that represents reality by portraying mundane, everyday experiences as they are in real life.

It depicts familiar people, places, and stories, primarily about the middle and lower classes of society.

Literary realism seeks to tell a story as truthfully as possible instead of dramatizing or romanticizing it.

Artistic authenticity is essential for the pragmatist workmanship development that began in nineteenth-century France and went on until the mid 20th century.

It started as a response to eighteenth-century Romanticism and the ascent of the middle class in Europe.

Works of Romanticism were believed to be excessively fascinating and to have moved away from this present reality.

Authenticity sets itself at work to consider characters and occasions which are clearly the most conventional and dull, to separate from these their full worth and genuine importance.

In America authenticity was a mid twentieth century thought in workmanship, music and writing that displayed through these various kinds of work.

The European Medieval romance was far from realistic. However, the modern literary realism both in England and America has been multi-faceted.

An English face of it is often the manifestation of man in search of salvation via the application of his mental capacity in a chaotic world of tension and progress

KEYWORDS: Romanticism, women's realism, criteria,English realism, American realism, Literature, reality, development.

INTRODUCTION

The foundations of Literary Realism lie in France, where pragmatist essayists distributed works of authenticity in books and in sequential structure in papers. The soonest pragmatist essayists incorporate Honoré de Balzac, who imbued his composition with complex characters and itemized perceptions about society, and Gustave Flaubert, who set up pragmatist portrayal as far as we might be concerned today. The primary American pragmatist writer was William Dean Howells, who was known for composing books about working class life. Another early American pragmatist was Samuel Clemens (pen name Mark Twain), who was the primary notable creator to come from center America. At the point when he distributed The Adventures of Huckleberry Finn in 1884, it was whenever a clever first caught the unmistakable life and voice of that piece of the country. Literary Realism existed, in some structure, in England before the class was completely characterized. A few critics credit the primary British writers, similar to Daniel Defoe and Samuel Richardson, as Realists, since they expounded on issues identified with the working class. When Realism came to fruition, George Eliot distributed Middlemarch: A Study of Provincial Life in 1871, which is viewed as the most well known work of literary realism to come from the United Kingdom. The class created in corresponding with the U.K's. new working class and creators made a move to repeat their inclinations and concerns. Other notable British authenticity creators incorporate Arnold Bennett, and George Moore.

Realism is frequently complex. Literary researchers frequently think that it is in connection with the ascent of the novel, and in this way properly guarantee that it is account. One more feature of authenticity is the connection among writing and reality, between what the word says and what the life is. This measurement is normally managed under ―representation which is mental, intellectual, just as anthropological.

It very well may be contended that the novel is the writing of the bourgeoisie, and the sentiment, which is a significant forerunner of the English novel, was the writing of feudalism. In the current review, an inquiry is the thing that kind of writing the sentiment was, and how it ought to be contrasted and the book. Sentiment, or chivalric sentiment, takes components from legends, fantasies, and history. It is a type of gallant composition and stanza story that was well known in the early present day Europe. The sentiments regularly portrayed the gallant experiences of a bold saint who frequently fell head over heels for an excellent woman from a respectable family with antiquated family. To take the hand of his darling and gain the honor of knighthood, such a fighter sweetheart needed to demonstrate that he could guard the upsides of gallantry and chivalry, that he was devoted to the practice of ―courtly love,‖ and that he could overcome every one of the foes of his general public. Consequently, he needed to mission for a fearless task of courage that incorporated a progression of risky experiences. The sentiment was profoundly raised in structure and content, and was thus an appropriate sort of writing for the portrayal of the habits of the upper class: lords, troopers, darlings, and so forth.

American writing has a somewhat short however brilliant history. The main generally read American writer was Benjamin Franklin, whose clever maxims and sound guidance written in the yearly diary "Poor Richard's Almanac" helped shape thoughts of being an American. Washington Irving (The Legend of Sleepy Hollow) was the primary American to acquire a worldwide abstract standing. James Fenimore Cooper's verbal scenes in his "Calfskin loading Tales" caught the country's immense magnificence. Walt Whitman and Emily Dickinson parted from wonderful custom and carried a feeling of distinction to the country's writing. Imprint Twain actually dazzles perusers with his interesting—and exceptionally American—humor and understanding.

Be that as it may, in its ascent and job, the English reasonable novel was in sharp resistance to the sentiment. In the event that the romancer felt liberated from the ethical reality, and on the off chance that he would in this manner create a story that was very abstract and steered clear of the genuine human culture, the pragmatist writer would feel a substantial burden on his shoulder to give a target version of the importance of mankind. From the beginning, the English reasonable novel has equitably worried about the day to day existence encounters of the average person and lady coming from the lower as well as working classes of the early current culture. Likewise, the way that the novel was in composition as the language of the reasonable individuals, made it feasible for its author to liberate himself from the necessities of the raised language of the sentiment. In this way, the straightforward progression of the exposition language into the littlest alcoves and corners of the human cognizance permitted the authors to address the minutest subtleties of life encounters of the normal man.

REALISM IN ENGLISH NOVEL:

The language of the novel is maybe however differentiated as the genuine speakers may be; and it is inclined both to lexical and syntactic deviations from the standard vernacular. This implies that the language of a novel can be as completely slangy, conversational, and casual as the man of business, who has something on the tip of his language to communicate, can talk with no regard for the structure and vocabulary of his demeanor. The variety of individuals addressed in the reasonable novel ensures that it tends to be generally comprehensive in plot, topic, and characters, for in their humor, inspirations, tendencies, and so on individuals of the novel can be as not quite the same as each other as genuine individuals are unique. In this way, contingent upon individuals associated with the sensible story, ―everyday life implies various things and incorporates an entire scope of concerns: love, disdain, demise, pride, insatiability, destitution, disappointment, achievement, battle, sexuality, and so on Also, the characters are displayed in their genuine endeavors to foster their lives, or even to get by, in a (transient and perplexing) society that is once in a while unforgiving and nonhuman.

In this way, if in Realism the portrayal of ―everyday life is basic, it very well may be contended that in various books and for various characters it implies various things. For instance, for an exceptionally yearning and completely aimed young fellow like Robinson Crusoe in a novel by Daniel Defoe, it implied how to apply his force and intelligence to make life out of barely anything on his far off island and how to make due there for around 29 years: right off the bat to get saved from the rough ocean storms, then, at that point, to basically settle there on his island and to tame it, on the other hand to fabricate the things he most requirements, to open a ranch, to develop goats and sheep, to kill the wild animals, to show the Bible to his man Friday, to give up the local pioneers, to take advantage of them for his own potential benefit, and so forth the whole of which intended to reestablish his power in his secretly - settled state.

The motivation behind the English novel is to pass on the impression of devotion to human experience. In this manner, one more characteristic of differentiation of the novel is the novelty of its topic. This adds to the job of the creator likewise, on the grounds that addressing the assortment of the cutting edge life goes counter to the redundancy of the past plots, and it needs the inventiveness of the creator. Such valuation of the singular implies

that learning is a dependable wellspring of motivation which can replace the wellsprings of aggregate custom whether they be sacred writings, legends, or chronicles.

Thus, it is logical that the novel is more formless than the romance, tragedy, or epic. It can perhaps be as formless as the individual experience can be limitless in type and volume. For example, the story of Robinson Crusoe is free from tradition, and flows as spontaneously as Defoe plausibly imagines the daily lives of his characters. This is to mean that if a Medieval text, Roman de la Rose for example, was composed on the basis of the French tradition of courtly love, the plot of Defoe's novel develops as the hero narrates the incidents of his own life and history when he sets sail from his hometown in York, England, for an unknown destination in search of a new life. This is a wholly invented plot that originates not from tradition, legend, mythology, or history, but from the personal experiences of the author, from a series of fictive adventures when the hero ventures to go on a tumultuous journey to establish a state in the foreign lands. The entertainers in an English novel are likewise not the same as those in past written works. The human sorts of epic and sentiment are supplanted in the novel by specific individuals who organize their lives specifically conditions. Accordingly, it isn't the acknowledged universals of life, however the encounters of specific people, that characterize in the original the truth of the cognizance.   Thus, in the ascent of the original the idea of "reality" changed additionally; and the material of authenticity arose out of the quick sense impressions of the singular man. In any case, despite the fact that Robinson Crusoe has a great deal of information and experience, the foundation of truth is neither his insight into an acknowledged custom, nor the result of a singular sense impression in the specific sense. Hence, the singular man of the novel has a scholarly obligation regarding the acknowledgment of the real world: he needs to offer shape to the awkward looking surge of sense impressions by sifting them through his cognizance.

EMERGENCE OF REALISM IN AMERICA

European authenticity doesn't have any significant bearing perfectly in America, on the grounds that anyway it was a neoclassical development, American authenticity was maybe a long way from neoclassical. This is on the grounds that as opposed to the European authenticity, which started principally from the old style Greek and Roman legacy, American Realism acquired barely anything from it. Rather than reflecting back to the artifacts, American authenticity has been worried about the truth of the American life in the nineteenth and mid twentieth hundreds of years. One might acknowledge that Alexis-Charles Tocqueville (1805-1859) had as of now noticed independence in America of the 1830s, yet in the nineteenth century one would have confidence in the presence of no broadly acknowledged meaning of American authenticity, in light of the fact that in those occasions it was still very new.

LITERATURE REVIEW

"Realism sets itself at work to consider characters and occasions which are evidently the most common and tedious, to remove from these their full worth and genuine significance. It would catch in all points of interest the association between the recognizable and the phenomenal, and the seen and concealed of human instinct. Underneath the beguiling shroud of obviously predictable days, it recognizes and attempts to follow the diagrams of the spirits that are concealed there; to quantify the progressions in their development, to watch the manifestations of moral rot or recovery, to comprehend their narratives of energetic or scholarly issues. So, Realism uncovers. Where we didn't think anything worth of notice, it demonstrates everything to be overflowing with importance."

METHODOLOGY

In the second half of the nineteenth century, the United States was changed into a cutting edge, modern country. As industrialization developed, alienation did as well. Trademark American books of the period, for instance by Stephen Crane and Jack London, portray the harm of financial powers and estrangement on the frail or weak person. Survivors, similar to Mark Twain's Huck Finn, suffer through inward strength including graciousness, adaptability, and, most importantly, independence.

During the late nineteenth century, and into the twentieth century specialists and artists added to the possibility of authenticity in the American setting. Each, however marginally divergent in idea or subject, was characterizing what was happening before their eyes, without envisioning a past or a future. While it has been expressed that American Realism was a neoclassical development acquiring from old style understandings of workmanship and engineering, this assertion is bogus. American Realism was really the inverse; rather than reflecting back to relics, craftsmen, scholars and performers were worried about recording the coarseness and the genuine truth of the mid twentieth century in America.

From the late nineteenth to the mid twentieth hundreds of years, the United States experienced gigantic modern, financial, social and social change. A consistent flood of European migration and the rising potential for worldwide exchange carried expanding development and success to America. Through workmanship and creative articulation (through all mediums including painting, writing and music), American Realism endeavored to depict the weariness and social richness of the non-literal American scene and the existence of customary Americans at home. Specialists utilized the sentiments, surfaces and hints of the city to impact the shading, surface and look of their inventive tasks. Performers saw the speedy and high speed nature of the mid twentieth century and reacted with a new and new beat. Journalists and creators recounted to another tale about Americans; young men and young ladies genuine Americans might have grown up with. Pulling away from dream and zeroing in on the now, American Realism introduced another passage and a forward leap — presenting innovation, and being in the present.

TYPES OF LITERARY REALISM:

There are a few different types of literary realism, each with its own distinct characteristics.

MAGICAL REALISM. :A kind of Realism that obscures the lines among dream and reality. Otherworldly Realism depicts the world honestly in addition to adds mysterious components that are not found in our existence however are as yet viewed as typical on the planet the story happens. One Hundred Years of Solitude by Gabriel García Márquez (1967) is a mystical authenticity novel with regards to a man town as indicated by his own discernments.

SOCIAL REALISM: A type of realism that focuses on the lives and living conditions of the working class and the poor. Les Misérables by Victor Hugo (1862) is a social novel about class and politics in France in the early 1800s.

KITCHEN SINK REALISM: A branch of social realism that spotlights on the existences of youthful average British men who invest their free energy drinking in bars. Room at the Top by John Braine (1957) is a kitchen sink realist novel with regards to a youngster with enormous aspirations who battles to understand his fantasies in post-war Britain.

SOCIALIST REALISM: A kind of realism made by Joseph Stalin and embraced by Communists. Communist authenticity praises the battles of the low class. Concrete by Fyodor Gladkov (1925) is a communist realist novel with regards to the battles of reproducing the Soviet Union after the Russian Revolution.

NATURALISM: An outrageous type of realism affected by Charles Darwin's hypothesis of development, Naturalism, established by Émile Zola, investigates the conviction that science can clarify all friendly and ecological wonders. A Rose for Emily by William Faulkner (1930), a brief tale about a hermit with a dysfunctional behavior whose destiny still up in the air, is an illustration of naturalism.

PSYCHOLOGICAL REALISM: A kind of realism that is character-driven, zeroing in on what inspires them to settle on specific choices and why. Mental authenticity once in a while utilizes characters to communicate editorial on friendly or policy centered issues. Wrongdoing and Punishment by Fyodor Dostoyevsky (1866) is a mental realist novel with regards to a man intend to kill a man and remove his cash to get from destitution—however feels massive culpability and distrustfulness after he does it.

CONCLUSION:

Literary realism is multi-layered. The English method of it is itself of more than one sort anyway it additionally varies from the American mode. Notwithstanding its social assortments, the systems of every method of abstract authenticity are diverse just as the issues and issues of every assortment. The realism of the European sentiment in the Medieval Times was simply the authenticity of the nobility which was itself in the minority. This sort of realism was frequently restricted to the indications of dignified love, royal behaviors, and chivalrous habits. It was impressively heartfelt and was hence just barely thought of. Be that as it may, in the seventeenth century the Spanish essayist of Don Quixote ridiculed the shows of the Medieval sentiment for its barring center around the existence of the nobility and neglecting the existence of the center and lower classes. As a fallout of this set of experiences making age, it was before the last long periods of the eighteenth century that the (sensible) novel showed up not too far off of the English invented writing. Notwithstanding, albeit The Adventures of Robinson Crusoe was maybe the primary fiction of this kind, it was trailed by a long series of books in this mode. Over the span of a very long while, the field of sensible fiction became augmented and differentiated enough to cover maybe every one of the niches and corners of the European life which was in a fast course of progress. Around the Neoclassical Period and the Age of

Enlightenment, every one of those congregation divisions and strict contentions, political discussions and parliamentary portions, philosophical contentions and logical developments, just as practical and money related enhancements changed the English public activity into a bubbling pot which included even inverse things: influence, imperialism, abundance, neediness, love, family, vagrancy, disappointment, extortion, trustworthiness, coldness, non-having a place and so forth Along these lines, the authenticity of daily existence, which the novel was taking to address, was pretty much as enhanced as the European man himself. American Realism should focus on normal beneficial encounters which could educate and advise perusers instead of on the gross, unethical topic and critical tone of European Realist writing.

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THE PORTRAYAL OF URMILA AND SURPANAKHA IN KAVITHA KANE'S "SITA'S SISTER" AND "LANKA'S PRINCESS"

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ABSTRACT

Indian literature has mainly two epics. The Ramayana and The Mahabharata. The Ramayana is celebrated for presenting the prototypes of brotherhood and male companionship. It merely tells the story of Lord Ram. Kavita Kane a mythological fiction writer is known for retelling the stories from the epics. In her novel "Sita's Sister" she brings out the impregnable sisterhood and it is the narration of the Ramayana from the view of Urmila. We come across many instances in the novel where women stand, speak, and support other women. We can also witness several virtues of women. Her other novel "Lanka's Princess" justifies the cruelty of Surpanakha and the reason behind the great war by listing out many situations which turned a soft woman to venomous. This paper will discuss Urmila's unknown story, her sisterhood, her character traits by presenting her as a strong, Positive figure. And, it will give limelight to Surpanakha' s inner self where she becomes the victim of the situation.

An Epic is a prolonged poetic version of a hero who achieves many great things in his life. They are based on the theme where the good ones will be praised, and the evil ones will meet their fall. These epics teach us more virtues. Literature is the mirror of life. Indian literature has two jewels: *The Ramayana* and *the Mahabharata* in its crown. They are always appreciated as they teach a lot of lessons to mankind. Truly, they are the backbone of Indian culture. Of the two, *the Ramayana* is the story of Lord Ram which emphasizes on various life skills of Dharma. Ram known as Maryada Purushottama fulfills his PutraDharma.

It narrates the story of the crown prince, Ram who is sent to exile for 14 years due to the mastermind of Kaikeyi. Along with Ram, Sita, the wife of Ram, and Lakshman, the brother of Ram spends their life in the forest. The entire epic is written in Sanskrit by the sage Valmiki. The original epic has 24000 verses with 7 cantos. It tells the story of King Dasarath, his three wives- Kausalya, Kaikeyi, and Sumithra and his four sons-Ram, Lakshman, Bharath, and Shadhrugan. It longs to Ram's exile, Sita's abduction by Ravana, Hanuman's army, the great war, his victory with the aid of Hanuman, and his successful return to his motherland.

Mythology refers to the compilation of stories, references, history, the appearance of God to teach Dharma to the world. Its themes include sacrifice, love, affection, penance, truth, chastity, devotion, rebirth, boons, and curses. *The Ramayana* has been hailed as the "Potent Corpus" of Mythology. There emerged a new genre called mythological fiction or mythic fiction which is inspired by themes, symbols of myths, legend, folklore, and fairytales. It is based on mythology loosely. Many writers emerged to write this genre as they have rich mythology as their source. However, the epic has been translated, modified, and deviated from the original version according to religion, people, and culture. AK Ramanujan in his famous essay, *"Three Hundred Ramayanas: Five Examples and Three Thoughts on Translation"* scopes various versions of the epic. Some deviate in terms of plot and character such as *Adbhut Ramayana, Dasaratha Jataka, Paunachariya, Gond Ramayani, Ramakirti,* and *Ramakien.*

Many Contemporary writers have tried to retell myths as a revolution to focus the hidden truths and details of it or to showcase the neglected one as a dominant one. Those hidden incidents direct the readers to see that neglected character from a different angle. One among them is Kavita Kane who stands on the top of the list in bringing out the neglected, minor, unrepresented, and marginalized women characters. The famous writers of this genre include Anand Neelkantan, Chitra Banerjee Diwakaruni, Anuja Chandramouli, Amish Tripati, and Ashwin Sanghi.

The traditional Ramayana is male-centric. Its approach is to put forth and to showcase male characters as predominant figures such as Lord Ram, Lakshman, Dasarath, Barath, and Asura Raavan. These Characters drive the plot thought-out the epic very seriously. However, these contemporary writers have given a new glimpse of the epic through their writings.

Kavitha Kane is a mythology-fiction writer. All her books are based on Indian mythology. She gives her voice to the minor characters of the epics. She retells the mythology in a different context. She takes her readers to the world of mythology through her characters. By reading her novels, one can witness the happenings of the plot.

She presents them in a completely different perception. She carves them to speak out their innermost feelings and emotions on those lesser-known mythological figures whom the epic would have shadowed, the society would have forgotten, or the legend would have marginalized. Some of her works include *Ahalya's awakening, Sita's Sister, Lanka's Princess,* and *Karna's Wife-the Outcast Queen.*

In one of her interviews, she clarifies her way of a portrait as she brings them unbiased. She says,

"Mythology, I believe should make you think, not judge. And that's how I portray my women, without any bias, be it a dark character like Surphanaka in *Lanka's Princess* or the treacherous Menaka of *Menaka's Choice*. Or it is a strong positive character like Urmila. I am simply telling the unheard story of a Surphanaka or a Menaka and a Satyavati. I am not interested in painting the white black or black white."

-Interview by Chakravarthy, 2018

I have chosen Kavita Kane's *Sita's Sister* and *Lanka's Princess* for this paper. The ancient version of *the Ramayana* Portrays Urmila as the wife of Lakshman. She never roams around in the epic. Truly, most of us would not have known the other side of her. She is presented as a very minor character who mourns for her husband's decision to ongoing exile. But Kavita Kane has brilliantly woven this character to give space to open her mind freely. Kane's Urmila is a good wife who acts according to her husband's wish. When she expresses her wish of accompanying Lakshman, he rejects it. He asks her to fulfill her Dharma i.e. taking care of his old parents and family. He is not aware of the agony and the pain Urmila undergoes. She feels bad for the safety measures of Sita in the forest. But no one knows that Urmila would also spend 14 years in personal exile without her husband in the palace. Kane excellently depicts how Urmila would have felt at that time.

"Both Lakshman and Sita are made their intention clear, they would be accompanying Ram and there was no room for any argument. Lakshman has forsaken her and Sita was going to leave the palace with Ram. The two persons whom she loved the most had left her, without a moment's hesitation."

(*Sita's Sister*,142)

Kane's Urmila has all the feminine traits of the modern era and at the same time, she is very traditional. She has given voice to the muted Urmila and presented her as a woman of valor. She acts as a virtuous wife who fulfills her husband's wish by taking care of his family and plays the role of a wise daughter-in-law during the demise of king Dasarath. She takes charge of the kingdom and prepares the army for the war with the enemy kingdom. The readers are astonished by her knowledge and guts when she trains the army, investigates the affairs of the palace, and concerns about political issues. She proves herself as a strong woman. She spends her whole fourteen years as an independent wife, a loyal woman who is more confident and graceful.

Urmila is very bold as she delivers her wish openly to her husband in accompanying him for exile. She is outspoken and beautiful. She is very caring, a learned scholar, a great ruler who directs Barath in ruling the kingdom in the absence of Ram and Dasarath. Shekha rightly comments,

"…And among all these women, it is Urmila who comes out as the most influential character - outspoken yet respectful, headstrong yet calm, strong in the face of adversity, a learned scholar, with an ability to forgive, forget and look at the bigger picture, the tapasvi who has achieved understanding"

- Book review (2015)

Kavita Kane has talked about the character of Urmila:

"It is her untold story, her exile, her travails, trials, and tribulations as she waited for him, yet lived her life, without tears and self-sympathy… She was a strong woman but not much is known about her as she, unfortunately, is one of the most overlooked characters in the epic."

Some critics have criticized Kavita Kane as her Urmila is beyond reality. Urmila comes forward breaking the walls of marginality that is imposed upon her by the male-centric society. Urmila is the biological daughter of King Janak and Queen Sunayana. Hence, she should have been hailed as "Janaki" as she is the daughter of Janak. However, Sita was named Janaki. Sita is "Maithili", the Princess of Mithila when it is Urmila who should have been crowned with that title and the sole proprietor of that name.

Lakshman's wife Urmila is well educated. She is well versed in the Vedas and the Upanishads, politics, music, art, literature. King Janak had a learning-centered government that allowed all men and women to acquire all kinds of knowledge. His four daughters – Sita, Urmila, Mandavi, and Shrutakirti accompanied him to all the conferences and religious seminars across the country. Urmila is the character who wants to explore things

around her and to learn her family customs, which she must perform after Sita's wedlock. She was not interested in getting married to anyone.

"Marriage did not hold much interest in Urmila, but it was a social discipline she would have to conform to. She would rather seek knowledge instead of suitor."

(*Sita's Sister*, 9)

When Lakshman and Urmila meet each other, they start to love. Lakshman accepts her. It is evident that Lakshman also is in deep love with Urmila when he expresses that beautiful moment in which Urmila looked at him haughtily in the garden with the pooja thali in her hand. When it comes to marriage, he refuses it. He has completely devoted himself to Lord Ram to fulfill his brotherly duties first throughout his life rather than his personal.

By knowing this too, Urmila still loves him. She says,

"No, I am yours. You are not mine. I love you that does not mean that I possess you, your beliefs, and your loyalties. I assure you that I shall never come between your loyalties your brothers and your family."

(Sita's Sister,67)

She appears to be very independent as she doesn't want to lock herself amidst four walls. She wants to upgrade and enhance herself by gaining knowledge. She has given her voice against any wrong or injustice done to her or other female characters in the novel. She fights for the right of the women in the royal family. When she comes to know that Maa Kaikeyi does not accept Sita as Ram's bride, Urmila could not tolerate it. She rushes towards Sita and starts furiously,

"…you shall not take it silently anymore Sita. They have the audacity to think of remarriage dismissing you as if you were some trophy to be replaced! I won't have it, Sita."

(*Sita's Sister*, 100)

Urmila comes to know that her other sister Mandavi is also going to face the same fate as hers and Sita's. Ram, Sita, and Lakshman are embarking on exile for fourteen years while Barath decides to administer the kingdom from Nandigram at the outskirts of the city. She becomes furious and asks him,

"…So be it, Bharath, like your brothers, Ram and Lakshman, you too live a life of ascetic, free from the bond of love and worldly care. Who cares whatever happens to your wife and family?"

(*Sita's Sister*, 209)

She is very adaptive when she finds out there is a vast difference between her motherland Mithila and Ayodhya. Mithila is unbiased and has a learning-centric approach that drives the people in observing knowledge but here Ayodhya seems to be a patriarchal-ridden one. She adapts herself quickly to follow the dharma and at the same time without even tolerating wrong deeds done to her as well as to others.

In the Swayamwar of Sita, when Ram breaks the Shiv Danush, Rishi Parsuram gets furious at him doing so. Lakshman has tried to comfort and console Rishi. However, Rishi Parsuram becomes more infuriated by Lakshman's explanation. It is Urmila who understands the situation better and she consoles Rishi Parsuram to save Lakshman whom she loves wholeheartedly.

"Urmila knew that she was ready to face the full fury of the Rishi anything to save Lakshman from the bloody fight from which he would never escape alive"

(*Sita's Sister*, 38)

On the other hand, Lakshman saves her.

"And while Lakshman had saved her from a violent predicament, so had she, snatching Lakshman from death."

(Sita's Sister, 41)

Urmila is a woman of high value. She determines herself in spending her whole life for the sake of her husband. Lakshman appreciates her as she is the very strongest woman, he has ever known. He comments that she is her strength and weakness. Thus, we come to know that Urmila is a highly positive figure who is marginalized in the ancient version.

"Lanka's Princess" focuses on the dark character Surpanakha who plays a vital role in the epic. She is depicted as the queen of the world of destruction. *Lanka's Princess* begins with one of the rebirths of Surpanakha where she is born with a hump on her back. This novel focuses on how cruel and revengeful Surpanakha is. The author has also tried to bring out the reason behind her hatred. It is the highly celebrated novel of Kavitha Kane in which she has retold the story of a little girl, named Meenakshi, who is born as the Princess of Lanka. Since her childhood, she has been remarked as "ugly" and "cruel" by her mother and brothers. This novel deviates from the versions of the Ram-centric and the Sita-centric to the cruel Surpanakha. Devdutt Pattnaik figures out that Surpanakha approaches Ram to quench her thirst for desire where Ram rejects and toys with her emotions and Lakshman mutilates her nose. He comments,

"Surpanakha is behaving as a creature of the forest would behave. She wants Ram and she expresses her desire freely without embarrassment. But Ram is not of the forest. He clings to dharma and rejects the proposal. Surpanakha responds as forest creatures would, with force, Lakshman then reacts as a city dweller would he has stricken her with the intention of the family her"

(Pattnaik, 64)

The retelling of myths is a major part of feminist writing to bring women into lives. The major motif of retelling myths is to break down the female subjugation and male-centered attitude. *Lanka's Princess* is one of such novels which attempts to give voice to the ignored or peripheral woman, Surpanakha who is a demon in Valmiki Ramayana. In this book, she is depicted as the truly loving and lovable woman who longs for care and affection.

She is often a misunderstood character. Kane raises the question of whether she is truly a monster or a victim of the situation. Since her childhood, she is neglected, and she is the woman who decides her future and fights for her rights. The story opens with the birth of Surpanakha. It is Kaikesi the mother of her utters these words:

"She hardly looks beautiful or like me. She is quite ugly...She is scrawny and much darker than me"

(*Lanka's Princess,* 1)

It is evident that the mother Kaikesi also hates her child due to the dark appearance. But Kane flips the story of Ravana's sister Surpanakha from the ancient version's dark depiction. She justifies that Surpanakha is not so cruel as the epic portrayed. She lists out various reasons which modified her to a wretch minded. Not all the person in the world is cruel. A person becomes or turns cruel when he is ill-treated or when he loses a thing or a person whom he loved the most. At that point, he plans to take revenge on his rival. The same thing happened in the case of Meenakshi who is none other than Surpanakha. Obliviously she is the protagonist who is very strong in taking decisions. She is the fourth child of that family.

Ravana calls her dark. Her mother calls her ugly. It is who Vibishan, the only brother, notices her eyes and compares them to "golden drops". She was rightly named Meenakshi- a girl with fish-shaped eyes. She has been hated by everyone when she marries her lover Vidhyujiva, the Prince of Kalkeya.

This agony, loneliness, longing for love, childhood trauma and all made her cruel. Like other women, she too had so many dreams of her marriage. Due to her appearance, there were no marriage proposals to her. At this time, she had a chance to meet Vidhyujiva and started to love him blindly which ended in their marriage. She is very fond of her Nany and her uncle. Ram and Lakshman kill them in the forest and so the hatred and the agony prolongs in the form of revenge. She loses her father accidentally, but she thinks that Ravana has killed him.

"You killed all my hopes, my future!"

(*Lanka's Princess*,171)

Gradually the hatred is getting cultivated. On the battlefield, Vidhyujiva is killed. She loses her loved ones. She moves to the forest with her son Kumar. They start to reside there in Mareech home. She injects her venomous traits into her son too. He wants to kill the person who killed all his mother's future.

"…go son, achieve the impossible and fulfill your responsibility… I would burn Lanka to another Dandak"

(*Lanka's Princess* 181-182)

Kumar is also killed by someone in the forest. She could not tolerate the loss of her son. It is Ravana who killed her husband. If he had not killed him, she wouldn't have settled in the forest. She loved the forest very much as it is the place where she trained her son and pulled him in the chain of revenge. This is the place that welcomed her. This is the place that turned that soft Meenakshi to venomous Surpanakha.

"...from today I would be the Surpanakha, she reflected, as she passed the row of members of her family…yes, I am a monster! Screeched Meenakshi, her eyes flashing, baring her claws…if anyone hurts me, I shall hurt them with these!! I am Surpanakha!"

(*Lanka's Princess*, 175-176)

She cleverly calculates that her brother Ravana could be killed by Ram and Lakshman. She wants to trap them brilliantly. Surpanakha goes into the thought of Ravan's weakness and gets to know that it is his lust for women. On the other hand, Ram's weakness is his love for Sita. So, both their weakness is none other than Sita. Amidst this Ravan's wife Mandodari informs her that she has made Ravan lead a war in Lanka. She becomes a monster to execute her plans. She has been a trapper than his sister. Soon the war starts. Many start to lose their lives. When the whole Lanka city is on fire, her happiness knows no boundary. She feels very happy as she is heartless. She lastly has tasted the fruit of success through her revenge without any mercy.

"…hate was bitter, but revenge was always sweet."

(*Lanka's Princess*, 265)

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THE SUSTAINABILITY THROUGH MATHEMATICS: A NECESSARY INTERDEPENDENCY

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ABSTRACT

Guarantying a sustainable future for our children is truly the greatest challenge facing humanity and raises a profusion of scientific and mathematical challenges. In the language of the Brundtland Report, World Commission on Environment and Development, 1987, it means leaving for future generations the same options we have for how we want to live our lives. However, operational that concept is easier said than done

Here, Mathematical modelling is considered as an indispensable tool for sustainable development. Sustainable development is to balance our economic, environmental and social needs allowing prosperity for now and future generations. Mathematical Science plays as tackle the challenges facing our planet. Mathematical modelling plays useful roles towards sustainable development in arriving the understanding, prediction and control of development process. Mathematical modelling can be a powerful tool for understanding and observed phenomena which cannot be understood by verbal reasoning alone. It is conclude that for sustainable development, it is necessary to build mathematical model.

Keywords: Mathematical Modelling; Sustainable Development; Real life

INTRODUCTION:

Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs. Mathematical modeling plays useful roles towards sustainable development in arriving the understanding, prediction and control of development process. Education for sustainable development (ESD) promotes the development of the knowledge, skills, understanding, values and actions required to create a sustainable world, which ensures environmental protection and conservation, promotes social equity and encourages economic sustainability.

Mathematics not only helps us to understand natural phenomena, it also allows us to sustain the majority of human activity on the planet. ... A planet at risk, covering climate change, sustainable development, epidemics; invasive species and natural disasters.

NEED FOR SUSTAINABLE DEVELOPMENT

The idea of sustainable development is essential to address the following issues:

1) Prevent the environmental degradation.

2) to ensure a human life

3) to check the exploitative technology and find alternative sources

4) to check the cover exploitation and wastage of natural resources

5) to regenerate renewable energy resources etc.

HOW MATHEMATICAL MODELING IS RELATED TO SUSTAINABLE DEVELOPMENT

Biodiversity, climate change, water resources, hazardous waste, nuclear waste, population dynamics etc is the some global sustainable development problem .these problem are describe by mathematical model. The sustainability of planet Earth depends on mathematical science. Every phenomenon on earth is subject to mathematics, which is the only language we can use to describe them. Moreover, mankind must factor mathematics into any approaches it takes to addressing said challenges. Climate change, protecting biodiversity, tackling pollution, controlling epidemics, and ocean sustainability, natural disaster (volcanoes, earthquakes and tsunamis) are all subject to linear and nonlinear differential equation. Earth interior mantle, terrestrial crust, atmosphere and the life that it sustains are all subject to dynamics process. Mathematical model sustain the majority of human activity on the planet. Mathematical model are used to solve many real life situations like:

1) Mathematical modelling of launching a satellite.

2) Mathematical modelling of urban city planning.

3) Mathematical modelling of controlling pollution due to vehicles.

4) Mathematical modelling of the traffic flow on highways or the stock market options.

5) Mathematical models to understand the working of heart, brain, lungs, kidneys, and the endocrine system.

6) Mathematical models to demonstrate the action of medicine in the human system.

8) Mathematical models for global warming.

9) Mathematical models to understand the fluid flow in drains ,lakes, rivers, spillways, and so on Mathematical model are recognized as effective tool that could help examine economic, environmental and ecological impacts of alternative pollution control and resources- conservation actions, and thus aid planners or decision –makers in formulating cost –effective management policies.

CONCLUSION:

The problems of achieving sustainability are urgent and huge and will require complementary inputs of diverse disciplines. Hence mathematics has a great deal to contribute in addressing these problems, but it is equally certain, as has always been the case, that new mathematics will be stimulated by the energy and freshness that comes from new applications and new challenges. The discipline of mathematics has much to contribute, and much to gain, from engagement in future.

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MULTIPLE MANIFESTATIONS OF TRAUMA AND REHABILITATION IN KAMILA SHAMSIE'S BURNT SHADOWS

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ABSTRACT

Kamila Shamsie's novel Burnt Shadows records multiple manifestations of trauma and their impact on common people. Her characters witness the dark, devastating, deadly, tragic and violent traumatic events. Kamila Shamsie employs trauma and stress at personal, psychological, familial, social, political, national and international levels. Her prime concern is to bring to light the aftermath of trauma at variant echelons. She focuses more on how her characters react to traumatic instances and their strategies to cope with them. The title, Burnt Shadows indicates the dark shadow of the past which brings to mind the trauma and agonies the characters go through. She puts forth the major and terrifying events like- World War II, Nuclear bomb attack on Nagasaki, 1947 India-Pakistan Partition, 9/11 terroristic attack on Twin Towers and the terroristic activities in Pakistan. She examines Post Trauma Stress Disorder in her characters, as each character in the novel witnesses historical incidents chronicled by her. The present research paper attempts to explore variant elements of trauma and the strategies of coping undertaken by the subjects in her narrative.

Key Words: Trauma, Rehabilitation, War, violence, memory Time present and time past Are both perhaps present in time future. And time future contained in time past. If all time is eternally present All time is unredeemable. (Eliot, T. S. Burnt Norton)

INTRODUCTION:

As T. S. Eliot in the opening lines of his much celebrated poem, "Burnt Norton" from *The Four Quartets* rightly points out that human beings are never free from the past and memories. In fact, past and memories haunt human beings everywhere like shadows and these are reflected in every act they do. Similarly, Kamila Shamsie's *Burnt Shadows* explicates the journey of Hiroko Tanaka through the ashes and the remnants of violence; always haunted by the burnt shadows and unpleasant memories. Hiroko's sojourn chronicles her attempts to escape from the event of trauma, but, in doing so, she enters another event of trauma. Thus, *Burnt Shadows* explicates an array of traumatic instances and the coping strategies of Kamila's subjects. Kamila unearths a series of traumatic instances in the life of Hiroko Tanaka, the protagonist from Japan, explicating her sojourn in variant time phases, nations, people and traumatic happenstances.

Illustration: The word trauma in Greek means 'wound' originally referring to a physical injury. In *Burnt Shadows,* trauma is understood as a wound inflicted not upon the body only but also upon the mind. It is both a physical and a psychological wound that is perpetual. As suggested by Sigmund Freud in his *Beyond the Pleasure Principle*, "The wound of the mind—the breach in the mind's experience of time, self, and the world—is not, like the wound of the body, a simple and healable event, but rather an event… it impose itself again, repeatedly, in the nightmares and repetitive actions of the survivor." (Freud) Shamsie's heroine, Hiroko Tanaka is survivor of the nuclear bomb attack of 1945 on Nagasaki whose life showcases a series of traumatic happenings from which she tries to escape but the memories haunt her wherever she goes. In this attempt, she becomes a migratory subject to get rid of the Post traumatic disorder but wherever she goes, memories migrate with her. According to American Psychological Association, trauma is "an emotional response to a terrible event." The response is multifaceted such as physical, emotional and psychological. Such terrifying events leave the permanent impact on human psyche which can be witnessed in Shamsie's *Burnt Shadows.* The present paper primarily focuses on the complex trauma-exposure to multiple traumatic and claustrophobic incidents in the lives of Shamsie's subjects in this narrative.

Kamila Shamsie opens the novel with the citations from Agha Shahid Ali's *A Nostalgist's Map of America* and Sahir Ludhianvi's *Parchaiyaan* which brings to mind the trauma and agonies Hiroko Tanaka, the protagonist of the novel experiences through her multiple migrations in Japan, India, Pakistan, Afghanistan and United State of America. Kamila's use of these citations reveals the traumatizing events, her characters' response to them and her subjects' strategies to cope with the scary historical happenings. Sahir Ludhianvi, a Hindi lyricist rightly points out the torture of the memories of the past traumatic happenings from which a person is never free.

In past wars only homes burnt, but this time

Don't be surprised if even loneliness ignites.

In past wars only bodies burnt, but this time

Don't be surprised if even shadows ignite.

-Sahir Ludhianvi, *Parchaiyaan*

This citation strongly projects the intensity of violence of the historical events which shake Kamila's characters to the core. The title, *Burnt Shadows* depicts the subconscious traumatic darkness which spreads in the lives of the survivors who run away from it, but like a shadow it moves along with them, troubling them every time. The past always burns itself magnifying its intensity and it also turns the survivors of the trauma into shadows that burn perpetually through trauma, as the survivors turn into the shadows. In other words, a traumatic event burns the original self of the characters. Hiroko Tanaka migrates to places and nations with her perpetual wound and shadowy existence as she has lost her original identity and self in the nuclear bomb explosion at Nagasaki. With her igniting shadow she traverses through space and time articulating trauma.

The author highlights personal, physical, psychological, familial, social, political, national, religious and international trauma and history. The novel documents trauma related to three generations right from the dropping of nuclear bomb on Nagasaki by the United States till terrorist attack of 9/11. The circle of sabotage and communal trauma getting completed as the United States, that inflicted terror and trauma experience the same through the terroristic attack of 9/11. Shamsie epitomizes World War II, Nuclear bomb attack on Nagasaki, India-Pakistan Partition, 9/11 terroristic attack on Twin Towers, other terroristic activities in Pakistan and resultant trauma that her subjects experience and their strategies to cope with these traumatic events. The author introduces a mysterious and puzzled character whose identity she reveals through his memories. She narrates a chain of disturbing events which transform him from a common man to a criminal. She introduces a shadowy dark place, the jail of Guantanamo where a shadowy prisoner, Raza, appears in an orange suit. This shadowy person in the dark space ignites the dark past, responsible for his traumatized present. Emily Horton rightly comments upon the very theme of the novel. She writes:

Thus, opening with the perspective of a Guantanamo inmate who questions the unspoken history behind his unexpected incarceration, the novel offers a probing inquiry into the shady legalism of the "war on terror," seeing this as comparable to and indeed traceable to, earlier imperialist ventures. Raza's predicament underpins the novel's lengthy historical trajectory, which moves from 1945 Nagasaki to 1947 Partition to Cold War Pakistan and Afghanistan and ultimately to the 2001 American invasion of Afghanistan in order to finally return to the opening Guantanamo prison encounter. (Horton 179)

'The Yet Unknowing World, Nagasaki, 9 August 1945'. In this chapter, Kamila Shamsie evokes the darkest and the most tragic phase from history where humanity is brutally exploded by dropping a nuclear bomb by the United States on 9th August 1945 on Nagasaki just to prove its political and nuclear superiority. Also, the author introduces the protagonists, Hiroko Tanaka, a young Japanese girl and Konrad Weiss, a man from Berlin, Germany enjoying the clear morning of 9th August 1945. They are unaware that the perfect blue sky of the day will turn into the grey, exploding human hopes, dreams and future into ashes. Further, Kamila highlights the feeling of insecurity, dullness and loneliness spread by the war in the lives of the Japanese people. She traces how Konrad, a young German man who becomes so nostalgic that even the banging of the shutter of his neighbour's house gives him comfort. She showcases the disturbed mentality of people during the World War I. fear, stress, insecurity and violence affect so much that the people dissociate themselves. Hiroko Tanaka observes how an event in human history not only explodes the physical construction and natural habitation, but it also alters routine and professions of human beings.

Gradually, the author also chronicles the present scenario of war where common people rush for shelter. They always live under the terror and horror of bomb explosion. The life in Japan is always under threat. People search for refuge in the terrible conditions in Urakami shelters as they hear the siren. They are so terrified with the violence that the sound of siren is sufficient to make them panic and shepherd in an inadequate place and with no space to move and no sufficient air to breathe. Shamsie traces the panic spread by the new bomb attack in Hiroshima. She narrates the destruction caused by nuclear attack. Kamila depicts its devastating ability of nuclear bomb explosion that shatters Hiroshima and scares Nagasaki. She recreates the dark past, sufferings and human loss due to nuclear attack in World War II. The topics talked about in the shelter reveal how people live through trauma and fear before the actual incident. Kamila gives the glimpse of the physical trauma of the Japanese people who suffer the nuclear bomb explosion, "Those who were close, it stripped to the bone so they were just skeletons. The ones further away, it peeled off their skin, like grapes. And now that they have this New Bomb the Americans won't stop until we're all skeletons or grapes." (Shamsie 15)

Kamila recreates one of the darkest days from the pages of history when nuclear weapon is used in World War II. She leaves pages blank from page number twenty three to twenty five to intensify the explosion of nuclear bomb. These blank pages bring to the mind the terror, the explosion and devastation and blank and empty life of Japanese after 1945's nuclear bomb explosion. Kamila gives the live experiences to her readers through these blank pages. She traces the idea that how after the attack this blankness dominates the lives of those who have witnessed the attack. The attack will affect the life of many generations in Japan. She wants to intensify that nobody can narrate the traumatic nuclear attack. Everybody goes blank and wordless, only blank pages can describe it. This instance from history indicates how human sensitivity becomes blunt.

Similarly, Kamila Shamsie's protagonist, Hiroko Tanaka survives the nuclear attack but she fails to understand what happened within a fraction of time. Through Hiroko's reaction to bomb attack, Shamsie presents the confusion, anxiety and dilemma of the people who experience 1945 nuclear bomb attack. She writes:

The light is physical. It throws Hiroko forward, sprawling. Dust enters her mouth, her nose, as she hits the ground, and it burns. Her first response is a fear that the fall has torn her mother's silk kimono. She raises herself off the ground, looks down. There is dirt on the kimono, but no tear. Yet something is wrong. She stands up. The air is suddenly hot and she can feel it on her skin. She can feel it on her back. She glides her hand over her shoulder, touches flesh where there should be silk. Moves her hand further down her back, touches what is neither flesh nor silk but both. She wonders if this has something to do with the burning she felt as she fell. Now there is no feeling. She taps the place that is neither flesh nor silk. There is no feeling at all. (Shamsie 26)

Kamila narrates how the nuclear attack gives Hiroko the permanent scares on back. She is blank. Kamila describes Hiroko's burnt kimono as the burnt past but still it is sticking to her back. This also symbolizes the past that is always sticking to her as a part of identity. She is unable to free herself from it as it is one with her flesh and blood:

There is feeling, then no feeling, skin and something else. Where there is skin, there is feeling. Where there is something else there is none. Her finger pluck at shreds embedded in the something else. Shreds of what – skin or silk? She shrugs off the kimono. It falls from her shoulders, but does not touch the ground. Something keeps it attached to her.

How strange, she thinks, as she idly knots the sleeves of the kimono around her body, just below her breasts. (Shamsie 26-27)

Gradually, the author narrates how a single instance in history alters the lives of thousands within a moment. After the bomb-blast, Hiroko tries to see Konrad through her window but she finds nothing except chaos of destruction, fear and confusion around her. She finds fire, smoke everywhere in Urakami Valley. Everything is unclear and changed. A moment changes not only Hiroko's body but also her world. The pleasant Valley becomes almost unrecognizable similar to her body that fails to recognize her touch. Kamila compares Hiroko's body with Urakami Valley wherein both internal and external are spoiled by the bomb explosion.

Consequently, the author intensifies the horror and trauma of nuclear attack. She describes how Hiroko fails to recognize her father, Matsui Tanaka who loses some of his body parts and he is crawling like reptile. Shamsie depicts the pitiable, pinning, pathetic and painful condition of human life after the nuclear attack of 1945. Hiroko does not recognize her father as his skin is peeled off. Even such painful death of her loving father makes Hiroko shocked and blank. Subsequently, Kamila leaves again pages blank to pinpoint the nothingness and failure of the words to describe the human loss caused by the attack. The description of destruction, decay and trauma is beyond narration.

Further, Kamila gives the reference of Harry Truman who plays the key role in the nuclear attack of 1945. She tells how the lives of nuclear bomb survivors get dismantled. Shamsie presents Hiroko as a strong character who constantly takes effort to overcome the Post Trauma Disorder Stress. She lives through such a trauma that she does not want to give the same amount of the agonies to her enemy. Hiroko even cannot imagine to drop the bomb on Harry Truman even for the sake of justice. Instead of avenging, she focuses on her rehabilitation and gets the new identity. The scars of the nuclear bomb attack always make her feel their presence. She states how these scares unconsciously bring the memories from the past, "She ran her knuckles across the bark of a tree. The faint sound of skin on bark was oddly comforting. It reminded her of something . . . something from Nagasaki, but she couldn't remember it what." (Shamsie 49)

Consequently, Shamsie brings to light the traumatized past of Jews through Willie, a German relative of Elizabeth who in 1945, works with the underground people in Germany, helping Jews and homosexuals to escape the Nazis. At the end of the war, he migrates to New York and feels New York the finest city in the

world. Shamsie shows through Willie's example that how in Germany Jews and homosexuals suffer and after Germany's defeat in the World War II some of them migrate to New York and feel it as a heaven. She pinpoints how victims use migration as a strategy to cope with the horrifying experiences they go through. Shamsie articulates how the nuclear bomb attack permanently left the mark not only on body, mind, and memory but also on the entire lives of the survivors. As Freud articulates in his book, *Beyond the Pleasure of Paradise*, Shamsie chronicles how traumatized history becomes a shadow and follows a person through memory. Subsequently, Shamsie dexterously depicts the bomb attack on Nagasaki in 1945. She tells how the bomb killed and burnt humans that it became difficult to their relatives to recognize them. She pens down the violence and brutality of Nagasaki bomb attack which replaced the human existence with the shadows. The author states how incidents from history overshadow the lives of people. The nuclear bomb blast dismantles several lives by destroying the harmony of their lives. It disables people and makes them to carry their disabilities till their death. "The bomb did nothing beautiful." (Shamsie 92) The nuclear bomb blast disfigures Hiroko's beauty and body which forces her to decide not to marry.

Shamsie takes the opportunity to articulate the political unrest and the social, political, national and international trauma at the time of decolonization in India. She reveals the reasons and the basis on which the Muslims demand a separate nation. She states how political, and religious forces work on the Partition of India after the decolonization. Shamsie underlines the tension, insecurity and violence in India at the time of the Partition in 1947. She exemplifies it when the Burtons and Hiroko visit the Qutb Minar with Sajjad. Elizabeth feels uncomfortable in the company of a Muslim. She remembers the riots in Punjab and Delhi. It indicates the poor and weak psychology of the colonizers who believe in the policy of 'Divide and rule' at the same time, they fail to adjust themselves with the trauma related with it.

Further, Lala Baksh and Sajjad's discussion highlights politics and pre-Partition scenario. Lala Buksh who enjoys his life with other Hindu servants – Vijay and Rani, discloses the reason to leave for Pakistan. Kamila projects the violence caused by the Partition. She writes about the Hindu-Muslim riots before Partition and feeling of insecurity spread by it:

. . . his family poured out a week's worth of stories from the Punjab, of Muslim men slaughtered, Muslim shops set on fire, Muslim women abducted – he had to force himself to stay at home if he went out and saw a single Hindu his eyes would reveal what was in his heart, and it would get him killed. Or else, a Hindu's eyes would reveal what was in his heart, and then . . . (Shamsie 87-88)

The author states how Hiroko fails to forget her history. Even her migration to India, especially Delhi and subsequently to Masoorie fails to disconnect her from her past. The memories of the devastating destruction of the nuclear bomb haunt her like a ghost. She states how she has witnessed people with scales with their skin, hair and burnt clothes. Hiroko chronicles the history and the cruelty of dropping second nuclear bomb on Japan. This highlights the height of cruelty of the West that can never be altered in human history. The unbearable reactions to traumatic experiences produced an altered state of consciousness that Pierre Janet calls "dissociation". Hiroko dissociates herself from the world. She says:

I don't belong in your world either . . . you just gave me something valuable. The belief that there are worthwhile things still to be found. All I've been doing all this while is thinking of losses. So much lost. I keep thinking of Nagasaki. You said to me once that Delhi must seem so strange and unfamiliar, but nothing in the world could ever be more unfamiliar than my home that day. That unspeakable day.Literally unspeakable. I don't know the words in any language . . .' (Shamsie 99)

Gradually, Shamsie showcases international and political trauma through India-Pakistan Partition in 1947 that dismantled the lives and peace of people. Thousands of people migrated to Pakistan. She writes, "This Pakistan, it's taking my friends, my sister, it's taking the familiarity from the streets of Dilli. Thousands are leaving, thousands more will leave. What am I holding on to? Just kite-strings attached to air at either end." (Shamsie 113) During Partition, the cultural and religious dichotomies result into riots. Violence in Delhi affects the people's mental health. She traces the dilemma of the migrants during the Partition.They were so disturbed that they start killing to the innocents due to the insecurity spread by the riot's trauma. For instance, Sajjad thinks, "what would I do? Join the men with machine guns guarding every entrance to my old neighborhood? Refuse to join them, and cower inside my family home instead? That's where we'd be, you know- Muslim homes in New Delhi are being destroyed. Women pulled out of their beds at night ...No, I don't want to be there. But it feels like a betrayal, all the same." (Shamsie 125)

Jimmy's Coffee Shop serves as a place where a traumatized characters experience the mental peace as they share their experiences and friendly bond with each other. Jimmy's Coffee Shop becomes a space for the

migrants who articulate their trauma. And, expression of trauma at a specific space, becomes the strategy to cope with the traumatic past, as the burden of the past is eases here. Consequently, Shamsie tells how migrants miss their homeland and curse people or the historical events that forced them to migrate from their homeland. Sajjad curses the historical happening, Partition, due to which his siblings were killed, he was forced to live in Pakistan. Sajjad recalls the historical horror of Partition. Shamsie turns the pages of riots, bloodshed and sabotage from history unearthing multiple layers of trauma that the people experience.

However, Shamsie showcases how the nuclear attack permanently influences the present. Even after many decades Hiroko cannot forget the deadly attack. She weaves the imaginary tales based on her past experiences of Nagasaki nuclear attack and narrates them to her son, Raza. Through these tales, Shamsie records what Hiroko has witnessed and how for the entire life these memories disturb her normal being. She pinpoints how the imaginary, happy, funny, magical and surprising fairy tales become the records of trauma, agonies, horror and misery of life. Kamila traces how the nuclear bomb attack destroys the hopes and happiness of people not only in 1945 but also it affects the future generations as well. Raza loves Bilal's sister, Salma and desires to marry her but even after twenty years of Nagasaki bomb attack Salma's educated family and Salma consider him as a deformed person as he is born to Hiroko, a nuclear bomb survivor. For them Raza is a "bomb-marked mongrel". (Shamsie 191) This instance highlights multiple manifestations of trauma as it showcases physical, personal, psychological, historical and international trauma.

Similarly, Shamsie connects trauma with terrorism. Abdullah is a product of one of such distressing historical incidents through the Soviet's intrusion in Afghanistan. Shamsie chronicles, like other Afghan families, Abdullah and his family migrate to Pakistan as mujahideens. The trauma of leaving motherland, death of their loved ones and violence spread by Soviet's intrusion, force the mujahideens to choose the path of terrorism. Kamila tells how these traumatized youngsters are easily misguided by anti-social and demonic people to spread terror through which theses sufferers have gone through. They become ready live like animals. Even they ready to kill themselves for violence. These victims choose the violence as a strategy to cope with trauma that they have lived through.

Shamsie projects how Hiroko witnesses a series of historical instances amalgamated with marathon of migrations and trauma. Shamsie presents her sufferings as an example of complex trauma which is resultant of experiencing chain of traumatic incidents. Hiroko's character justifies Herman's "Complex Post Trauma Stress Disorder" which addresses the multiple origins of trauma and their impact on all aspects of a person's life. Hiroko as a daughter, beloved, wife, friend, mother and teacher suffers because of various traumatic incidents.

Shamsie shifts her narration in *The Speed Necessary to Replace*to New York, Afghanistan, 2001-2 where Shamsie states how her characters recover from their painful past. As Lifton and Shatan, who have worked with Vietnam War soldiers and veterans emphasize that many a times the trauma victims addict to smoking, alcohol or drugs. It is their strategy to cope with the trauma. Kim smokes because she enjoys freedom, on the other hand, Hiroko starts smoking after Nagasaki nuclear bomb attack in 1945 just to get little comfort from the trauma she has survived. Smoking for Hiroko is a way to make herself to endure the pain of past. Similarly, Shamsie shows how Raza after Sajjad's death, traverses constantly in different parts of the world just to escape Sajjad's memories and guilt. The author highlights Raza's strategy to cope with the guilt of his father's death by exploring new countries. Sajjad's death becomes the reason for Hiroko's migration to Abbottabad as it is difficult for her to overcome death of her loving husband.

Shamsie mentions the most recent trauma of 9/11 terrorist attack on World Trade Centre in 2001. She tells how after 9/11 attack, Kim gets so panic that even an ordinary news scares her. The author reveals the impact of 9/11 attack on Americans. She narrates how the people are unable to contact their love ones after the attack. When Kim watches the news about bomb in Miami flight, she starts feeling panic as she had felt at the 9/11 attack. Consequently, Shamsie traces how certain incidents from the past have permanent impressions on the lives of many people. The 9/11 attack in New York has the same impact on citizens. To reassert the intensity of trauma, one needs to evoke the views of scholars like Ringel and Jerrold R. who in their article, "Trama: Contemporary directions in theory, practice and research" mention, "Traumatic stress become more prevent and complex in contemporary American life as a result of the mass trauma of 9/11." Further, Shamsie mentions the historical figures like Hitler and Stalin who made the entire world experience trauma of war. She mentions the historical happenings like the Cold War, the British Empire, and segregation. Her characters live through all these happenings, experiencing the upheavals in human history. Ilse expresses her ideas about the world traumatic history. She says, "'I've lived through Hitler, Stalin, the Cold War, the British Empire, segregation, apartheid, God knows what." (Shamsie 266)

Further, Shamsie narrates the aftermath of 9/11 attack in New York. She explains how after the attack the whole Muslim community is considered as terrorist. Hence, the most democratic country starts suspecting on all the Muslim migrants. Kamila traces that for the same reason Abdullah who is in New York runs after watching FBI as he does not has the visa. Raza discusses this with Kim in order to seek help for Abdullah in crossing the border.

Kamila mentions how her characters become a part of history as history molds their lives. They cannot separate themselves from past. She says, "Hiroko, Sajjad, Konrad, Ilse, Harry: history had blown all of them off course, no one ending – or even middling – where they had begun, . . ." (Shamsie 282) She highlights Raza's uneasiness who considers himself responsible for Sajjad's death. Raza tries to find out and save Abdullah, the Pashtun boy who becomes mujahideen due to him. He feels by helping Abdullah he can wash off his guilt. Here, Raza finds one more way to settle down with past by helping Abdullah to return to his home.

Similarly, Shamsie points out how 9/11 attack molded American psychology due to which they consider every Muslim as a terrorist. Hence, Shamsie mentions that how the police is also aware about this type of uneasiness of Americans and they will not take any action as Raza helps Abdullah to escape. She says, "The policemen need never know he had helped Abdullah escape; they'd merely conclude that the American woman was paranoid, seeing a threat in every Muslim." (Shamsie 359) Shamsie reveals how the new identity of Muslims as terrorist is set by 9/11 attack. Here, Shamsie highlights the paranoid mentality of Americans who feel scary in the presence of Muslims just because of one 9/11 attack but the same nation has killed many just to show their power in 1945. Shamsie highlights America's narrow and weak psyche where without knowing the fact just on the basis of their prejudice, they imagine the trauma related with it and they take decisions. For instance, Kim without judging person calls police and informs about Abdullah who just wants to return to his family.

CONCLUSION:

It can be stated that the narrative facilitates multiple manifestations of trauma and rehabilitation in the novel, *Burnt Shadows*. The author presents an array of traumatic and tragic happenstances which force her characters—minor and major—to experience the trauma and the post-traumatic disorder. During such historical happenstances people are exposed to several traumatic events that raise the chances of developing post-trauma stress disorder, anxiety, depression. Shamsie highlights not only such tragic and traumatic historical events and their impacts but also the various strategies used by her characters to cope with the trauma.

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WOMEN'S EDUCATION DURING EPIC AGE IN INDIA

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ABSTRACT

Religious environment was a potent mode to influence ancient Indian education. In ancient India, the women enjoyed equal status with men in all fields of life. Works by ancient Indian grammarians such as Patanjali and Katyayana suggest that women were educated in the early Vedic period. They enjoyed equal status and rights during the early Vedic period. The status of women was high. But this scenario saw a change from Vedic (2000 B.C. to 1000 B.C.) to Post-Vedic (1000 B.C. to 200 B.C.) periods.

The women in the Epic period enjoyed equal status with men and independence in action. Not only they had the place of honour, but were entitled to participate freely in social activities. They were allowed to pursue the academic alignments and share the family life with full vigour. They were free to select their conjugal partners and exceeded free will in entering into the matrimonial bondage. Women were not only highly educated, cultured, but also, they proved to be good teachers in the upbringing of their children in all spheres of life.

In India, the time between the writing of the first documented Sanskrit book, the Rig Veda, and the emergence of Buddhism is no different in the Indian Epic Era (around 2000-700 BCE). Two great Indian Epics, the Mahabharata and the Ramayana were the result of this period. Women's education was at its highest in the Epic era. Women were equal to men in knowledge and education. This paper concentrates on the role of women in the two Epics and seeks to determine whether the studies have already degraded relative to the Vedic period or not. Although in the Epic period women had access to education, they had gradually lost this right.

In this analysis, the female protagonists of both Epics were thoroughly researched, and the updating and rewrite of the epics about 500 CE was taken into account. Secondary sources have been mainly used to write this paper to show the importance of education for women in the Vedic period and how did it help them to sustain their social status.

KEYWORDS: Influence of Women, Ancient History, Indian Epic, Vedic Women, Education, Epic Period, Vedic Period

1. INTRODUCTION

In earlier times, Hindus considered education as a process of life. It was of belief of the ancient Hindus that education should prepare an individual to attain the main objectives of life like liberation, for living, for character formation (self-confidence, self-reliant and self-respect) and preservation of culture. Therefore, education was given to the women as it is directly related to the improvement of the society, economic prosperity, national solidarity, their social status and for good family relation.

Indian womanhood and their education have gone through socio-economic and psycho spiritual changes. From 4th century B.C. to 3rd century B.C., girls and women were given education which helped them to acquire self-respect, self-confidence, worth and freedom. In Vedic period (During which both great epics Ramayana and Mahabharata were produced), according to A.S. Altekar, education was regarded as very essential to secure a suitable marriage". In Rig Vedic society "…the practice of child marriage did not exist".

That is why, girls were able to study and education was given an utmost importance.

Purpose:

The women of Epic India were honoured at home. Ramayana and Mahabharata Epics had also offered women a proper place; women were named Dharma's origin, wealth and pleasure. We see detailed references to bravery, strong will and courage of women such as Kaikeye, Sita, Rukmani, Satyabhama, Sabitri, Draupadi, etc. Ramayana is a majestic picture of the Hindu ideal femininity, glorifies the importance of "Pativratya" and idealizes the feminity as one of the most venerable facets of our patrimony. The Mahabharata describes the husband's responsibilities and behaviours.

METHODOLOGY:

To write this paper, mainly secondary data have been used from textbooks, reference books, websites etc. The study is mainly based on analytical study only. The main objectives of writing this paper are:

a) To know about the educational status of the girls and women in the Epic period;

b) To study about women's educational conditions during the Epic period.

2. A HISTORY OF WOMEN EDUCATION IN INDIA (BRIEF DESCRIPTION)

Women's education in India plays a very important role in the overall development of the country. It not only helps in the development of half of the human resources, but in improving the quality of life at home and outside.

Educated women not only tend to promote education of their girl children, but also can provide better guidance to all their children. Moreover, educated women can also help in the reduction of infant mortality rate and growth of the population.

(i) Educating the women will empower them to seek gender equality in the society.

(ii) Women will be able to earn that would raise their economic condition and their status in the society.

(iii) They will be aware about the advantages of small and planned family and this will be a big step towards achieving stabilized population goals.

(iv) It has been reported that the single most important factor affecting high total fertility rates (TFR) is the low status of women in many societies. Women education will help increase the age of marriage of women and they would tend to have fewer, healthier children who would live longer.

(v) Women on being educated would be able to rear their children in a better way, leading to their good health and provide them with better facilities.

(vi) Women are also the victim of capitalism and development. Due to some development activity like dam building or mining, they get rehabilitated. The men folk get some compensation and migrate to towns in search of some job while women are left behind to look after the family with little resources. They are compelled to take up some marginalized work, which is highly unorganized and often socially humiliating. Women education can greatly help to restore their settlement and dignity.

(vii) Education of women would mean narrowing down of social disparities and inequities. This would automatically lead to sustainable development.

Female education during pre-epic era

In pre-epic era women enjoyed a high social status. Women enjoyed equality in all walks of life.

The place of education was generally the forest which was far from the madding crowd and ignoble strife. The ancient Rishis established the earliest schools in hermitages or Ashramas in the forest. The system of Guru-Kula was then in vogue. The home of the teacher was also regarded as a school.

Ancient Indian Education was dominated by strict moral codes of conduct.

Women were encouraged towards attainment of education, the reason being, they were the ones, who were merely responsible for the well-being of the family and community. They rendered a significant contribution in terms of areas such as, implementation of household responsibilities, health care, child development, taking care of the needs and requirements of the elderly family members, preservation of the environment and so forth. Hence, in order to carry out all these tasks and functions in a well-organized manner, it is vital for women to acquire knowledge and upgrade their skills and abilities.

There was not any prejudice regarding the education of women. Girls were educated privately in their homes by parents, elders or husbands and not publicly as boys. Education that girls received was highly intellectual and it reached a very high level as in the well-known cases of Gargi, Maitreyi and others.

The pre-epic period has witnessed many women scholars. They possessed adequate knowledge regarding the Vedas and texts. These women not only composed hymns but also learnt music and dancing. There were many women poets and philosophers during the Vedic period. The Vedic period, witnessed many capable women like Apala, Ghosha and Visvavara, who performed the job duties of composing the mantras and rose to the rank of the sages or rishis. Lopamudra is one of the female teachers of this period, and is believed to have preached 179 hymns of the first book of the Rig Veda, along with sage Agasthya.

Therefore, it can be stated that women were given equal opportunities in education, along with the male teachers to prove their capabilities. This applied in the field of education, as well as in social customs and rituals. Yajunvalykya had imparted divine knowledge to Maitrey and that she had not only been able to comprehend high philosophy but had also acquired divine knowledge.

During the pre-epic period female education was very much prized. It was shown to a major extent that rulers and kings were aware of education of women and got their children educated, irrespective of being either male or female. The initiation was essential for girls to secure a suitable life partner. The Atharva Veda says that a woman can become successful in married life when she is properly trained during learning period. They studied the sacred texts, had full access to different branches of knowledge.

Courses and subjects of study (pre-epic era)
Education in the pre-epic period was mainly what we know today as Vedic Education. It included the study of Vedas, Upanishads etc. which held great importance in Ancient India. Women were considered to be eligible for studying the Vedas, related literature and performing Vedic sacrifices.

The subjects of instruction varied according to the needs of the different castes. These included the Vedas and Vedangas in the case of the Brahmanas, the art of warfare in the case of the Kshatriyas, the art of agriculture, arts and crafts in the case of the Vaisyas. Ancient Indian Education was thus caste dominated.

The Mahabharata, for example, tells us about numerous centres of learning or hermitages. They consist of different departments such as i) Agnisthana, the place for fire-worship and prayer; ii) Brahmasthana, the department of Veda; iii) Vishnusthana, the department for teaching Raja- Niti. Arthaniti and Vartta-government, economics, and trade (which includes Krishi, vanijya and Goraksha), iv) Mahendrasthana, Military section; v) Vivasvatasthana department of Astronomy; vi) Somasthana, department of Botany; vii) Garuda-Sthana, department dealing with transport and conveyances; viii) Kaartikeya-sthana, section dealing and teaching military organization, how to form patrols, battalions, and army etc.

In pre-epic period, women acquired education and the extent of knowledge and information was high among them. Women took part in religious ceremonies and sacrifices, along with their husbands. They were required to recite the mantras or the verses with clarity and efficiency.

The scholarly women were classified into two categories: the Brahmavadinis or the women, who did not marry and acquired knowledge of the Vedas throughout their life. Brahmavadinis were the life-long students of philosophy and theology. The other categories were the Sadyodvahas, who studied the Vedas, till they married. These women prosecuted their studies, until they got married by the age of 15 or 16 years. The women, who studied the Vedas were known as paninis. The female teachers were called upadhyaya or upadhyayi. Women did write Sanskrit plays and verses and also excelled in terms of other areas, including fine arts, music and painting.

The women, belonging to lower strata or caste also mastered the skills of spinning, weaving, embroidery and needlework.

In the pre-epic era knowledge was imparted by the Guru or the teacher to the pupil through regulated and prescribed pronunciation, which the pupil would commit to memory, having listened to it alternatively.

Two methods of teaching were being practiced during the pre-epic period. The first method was Oral and the second was based on Chintan i.e. thinking.

Pupils were taught individually. No class instruction was provided. Sometimes senior students acted as teachers of junior ones. This was known as the monitorial system. Ancient Indian Education was individualised and not institutionalised.

The method of teaching was mainly oral through debates and discussions which received due attention.

The method of study consisted in:

1. Sravana—listening to the teacher,

2. Manana—reflection on what was listened to,

3. Nidhidhyasana—constant repetition of the subject of study.

4. Travelling was regarded as necessary to complete the education.

3.   EDUCATION DURING THE PERIOD OF RAMAYANA (REFERENCE TO WOMEN)

In Ramayana, we come across some great names among women who were well educated and who were respected for their austerity.

Ayodhya housed a number of educational and cultural centres. associations of Brahmacharis, who would approach the King with their questions and grievances. There used to he lectures by well-known scholars of the day, which used to be attended by a large number of students. There were ladies' clubs called 'Vadhu Sanghas' and dramatic societies known as 'Nataka- sanghas' whose objectives were to organise festivities called utsava and 'Samaajas'.

Educational atmosphere in Ramayana

We have another beautiful description of a centre of learning, the ashrama of Bharadvaaja at Prayaga. This perhaps one of the biggest of the Ashramas which had the capacity and facilities to accommodate the whole royal retinue of Bharata including the ladies of the palace.

The excellence of the people of Ramnyann in various branches of knowledge is evident in their counseling. behavious and commitment to the path of righteousness as seen throughout Ramayan. The benediction givcn by Kauslya to Rama on his departure to forest gives a glimpse of hcr education and culture.

When Rama forbades Sita joining him on his journey to forest, she offers a number of arguments why she should go along with him which also relfects her education and knowledge of the Dharmashastra and other branches.

Thus, we see that there was a great regard for education in the society of Ramayana, even among women. The educationists of the time concentrated on the type of education for women, which would enrich the life of the man who married her. Women played a great role in influencing society to live on the moral path. They were well versed in the literature and administration.

There were Sadyo-vadhus and there were brahma-vadinis. The education of sadyo-vadhus comprised the teaching of important vedic hymns necessary for usual prayers and sacrifices, as instanced by Kausalya, Tara, Sita. Whereas, Brahmavadins remained unmarried and dedicated themselves to vedic studies, sacrifices and penances as instanced by the example of Svayamprabha and Vedavati (in the Uttrakanda).

Greater part of Sita's education was post-marital, influenced partly by her husband and partly by the special environment of her long periods of exile from court. She was certainly literate, for later we find her in Lanka reading and recognizing the engraved autograph of her husband on the ring sent to her through Hanuman. Sita herself uses a language befitting a Pandita.

The women educational system of Valmiki's times comes out very triumphant as it produced illustrious characters like Sita, Anasuya, Ahalya, Urmila, Kausalya, and Mandodari. The presence of an efficient educational system in this period is further revealed by the wide range of literature worth which the Ramayana displays its familiarity.

Curriculum

There was devoted pursuit of various fine arts, the Veda, the Vedangas, the Arthasastra, the Dandaniti or Rajaniti, Varta, Itihasa, Purana, Kalpasutras, the practical sciences like medicine, anatomy, astrology and astronomy. All these formed interesting subjects of teaching for the pupils in that period.

There is evidence to show that the people zealously cultivated useful arts like carpentry, spinning, wearing, tailoring etc. and also fine arts like music, dance, drama, painting, architecture and poetry.

Female poets and scholars at the Palace/Court and their works

The women characters of Ramayana are not just historical characters; they are source of inspiration in various ways. Though the Ramayana is the story of Marayada Purshottam Shree Rama, it sings the praise of the epitome of Womanhood as well. Be it Sita or Anusuya or Mandodari, it tells the story of great Rishis and Queens.

These female characters in Ramayana are the source of inspiration, for they are courageous, strong, devoted and knowledgeable. Women characters occupied no less importance than men characters. This fact is made clear by Valmiki himself when he says that Ramayana is also called as Seetayacharita. The poet depicts them in all relationships as mothers, sisters, wives and daughters.

The women characters can be classified broadly under two types. The first type is saintly ladies who discarded all worldly ambitions and desires, and lived in the forest a life of penance and mental discipline. For this the

character of Anasuya Shabari and Swayamprabhe are fine examples. The episode of Ahalya teaches us many valuable lessons by her struggle and fall and final discipline that she practiced.

The second category of women belonged to those who stayed in the society and led family life and rose to eminence by sincere performance of their duties. For this examples are Mandodari, Trijata of Lanka, Tara of Kishkindha, wives of Dasharatha and Sita of Ayodhya. They were great by their exemplary conduct. Their greatness lies in their capacity to face all trials and turbulences with self-confidence and with the firm belief that truth, sincerity, self-sacrifice and other virtues would ultimately triumph. The women characters ascend the highest values of life that mankind should follow in such circumstances of crisis.

While discussing the women characters of Ramayana, it is appropriate to begin with Sita because she stands next only to Rama in importance of sublimity of character and she symbolizes ideal woman par excellence.

Sita
She is known for her knowledge, tolerance, piousness, grace, silence, obedience, understanding, confidence, courage, commitment, and so on. She is virtue of all the goodness, kindness and embodiment of peace and serenity. She is the daughter of King Janka, hence, was educated within the walls of palace. But, the preaching she heard from her in-laws or great sages, helped her to shape her personality. Whole Ramayana is full of her wisdom and greatness.

Anasuya
The great qualities of Tapas (penance) and Swadhaya (self-study) that Valmiki described as very keys to spiritual existence are found in Anasuya. She is very saintly lady. When her husband informed her that people were suffering from draught, she grew fruits and roots by making the water of Ganga flow through the channel. This shows her wisdom in turning the calamity into an opportunity. When Sita met her, she preaches her the duties of a faithful wife. The description of sunset to Sita reveals her poetic talents.

Ahalya
She is wife of saint Gautam. She falls in love with Indra, who said to be disguised himself as Gautam and make love to her. Even after realizing this she continues to entertain him. When the act is revealed, her husband Gautam curses her and leaves. When Rama visited her during his exile, she gets the curse cleared. In spite of this incident, Ahalya is considered as one of the pious women of Ramayana period. Her relentless repentance for the sin she committed made her ascetic and pure.

Mandodari
She is the wife of Ravana. Though she was the chief queen, she underwent a great suffering due to her husband's act of kidnapping Sita. She appears mainly on two occasions. But, the impression we get is that she is a lady of calm majesty. Though Mandodari knew the intentions of Ravana, she never felt jealous for Sita. Instead, she advises her husband to follow the path of Dharma. Mandodari was endowed with such a great insight and had the understanding of men and matters in their proper perspective.

Tara
She is the wife of Vali and Sugreeva. Tara's character is typical. She had to face two husbands, who are brothers as well as rivals. But, she manages both of them as per her dharma of by upholding the duties of a wife.

When one of them, Vali was killed, she accepts the situation and continues her duties as the wife of Sugreeva. When on one occasion Lakshman was angry with Sugreeva, she convinces Lakshman with wise analysis of the situation. She is a learned woman and was aware of the incidents of great personalities of her time. She was intelligent and an efficient stateswoman. Hence she was invited by Sita, on her way back to Ayodhya in Pushpak Viman, and witnesses the coronation of Lord Rama.

Kausalya
The Queen of Ayodhya and the devoted wife of King Dasharatha is the mother of Shree Rama. She is the beloved wife of King as she won his heart with her virtues. When her son Rama was to go to forest, she convinces her husband Dasharath with wise words and sayings. This incident shows her depth of knowledge of scriptures. She also preaches her son the duties of a son and a king. She guides the whole family after the demise of Dasharath.

There are many such noble women in the time of Ramayana, who got good education from scholars of the time and shaped their future appropriately.

4. EDUCATION IN THE PERIOD OF MAHABHARATA

Key features of women education

During the Mahabharata age, such education was given to individuals who contributed a lot in their physical and mental development and in making them complete men. Education of Veda, Vedanga, Purana, Itihasa, Smrti, Upanishads, Ramayana, Mahabharata, Dharmasastras, Arthasastra, Kamasastra, secret subjects, Philosophy, science of calculation, religious education, science of morality, cultural education, political education and education regarding different arts helped in the mental development of the individuals.

Women, particularly mothers, played a pivotal role in imparting education at home. Gandhari, Kunti and Vidula were such women.

Text of female education

The material directly related to education is hardly available in the Ramayana and the Mahabharata, R.K. Mookerji throws light on this issue and explains the reasons of the non-availability of educational material in the epics, "The purely educational evidence of the Epic is, however, very meagre in comparison with the sizes of the works or the vast quantity of sociological data they furnish.

Subjects of Education

Different subjects were taught to the students during the age of Mahabharata which contributed a lot in the mental growth of the students. These were: Veda, Vedanga, Purana, Itihasa, Smrti, Upanishads, Ramayana, Mahabharata, Dharmasastra, Arthasastra, Kamasastra, different Sastras, secret subjects. Philosophy, science of calculation, religious education, science of morality, cultural education, political education, vocational education, education regarding different arts and science of weapons.

Many sterling examples of hermitages or seats of learning, teachers and ideal students are found in the Mahabharata. The epic throws light on various hermitages where disciples were imparted education. Hermitages of Vyasa, Vasistha and Kanwa etc, and schools of Drona, and Kripa were famous seats of learning.

Qualifications of women education

During the Mahabharata age, the women were not negated the opportunities of getting education. One of the prominent women ascetics is Sulabha whose deep learning was recognized by the celebrated scholar King Janaka. The daughters of Sandilya and Risi Gargya have also been described as Brahmacharinis and great scholars in the epic.

Educated Women

In the Vedic age, the refulgent golden age of women's all round progress, they (women) occupied the exalted position in society. Roma Choudhari is of the view that India reached its zenith of education at the very dawn i.e. Vedic age of human civilization:

Although Mahabharata lacks in providing direct testimony about women's right to education and learning, yet the instances of many scholarly women, who kept the torch of learning burning, are ample proofs that women were provided opportunities for quenching their thirst for knowledge during the Mahabharata age.

Sulabha

A highly virtuous mendicant lady named Sulabha was the contemporary of Janaka, the king of Mithila. She adopted the doctrines of Yoga and acquired the stage of supreme realization i.e. the stage of oneness of the individual soul with the infinite universal soul.

Gautami

Gautami had the knowledge of that ultimate reality called Brahman. When her only son breathed his last as a consequence of snake-bite, she was capable of delivering a scholarly lecture on the state after death owing to this very supreme knowledge.

Kunti

The character of Kunti is an endowed with varied tales. She was imparted moral education and possessed the knowledge of Varnashrama dharma. This learned and talented lady Kunti, who was the embodiment of patience and unfailing courage in the face of heavy odds, still wins the admiration and reverence from all corners and leaves an indelible impression upon the minds of people. Kunti's intimate knowledge of politics as well as that of religion is, thus, evident at every step.

Draupadi

Draupadi has been depicted as a learned woman and also well-versed in religious practices in the great Epic.

She discussed the attributes of dharma with Yudhisthira and aggrieved as she was, Draupadi didn't hesitate in criticizing even God.

When Lord Krishna along with his consort Satyabhama came in order to see the Pandavas in the forest, Satyabhama out of curiosity asked Draupadi how she was able to win the hearts as well as the reverence of the Pandavas who were warriors of repute. The lecture delivered by Draupadi which expounds the duties and responsibilities of a wife proves that she might had been imparted such education.

Damyanti

Damyanti possessed the cream of intellectual acumen and presence of mind. There is predominance of wit and intellect in her character whether it be cleverly choosing her consort in swayamvara or sending the messengers in search of Nala with the verses composed by her. a rare combination of brain and beauty is found in Damyanti.

Savitri

Religious-minded Savitri is impressive, primarily, due to her intellectual character. She was victorious over destiny and death by the sheer power of her wisdom, love and loyalty.

Sukanya

Sukanya is, a living embodiment of the characteristic Indian concept of exclusive devotion of the wife to her husband. She, in fact, committed an unpardonable sin by blinding Chyavana but she compensated that by her single-minded devotion to her lord. As a consequence of her devotion, affection and faithfulness to her consort and by her intellect that cultured lady succeeded in restoring the youthfulness of her husband.

Lopamudra

Highly cultured Lopamudra, with a religious fervour of mind, is the master-piece created by the Lord Brahma. Agastya by assembling the elite of every best thing in the universe. She is, thus, a rare example of beauty and brilliance combined together.

Shakuntala

She is the main character of the great epic, Mahabharata possessing the glamour of celestial beauty and endowed with a religious bent of mind has been transformed by Kalidasa into: the finest and the most striking specimen of romantic love.

Home Education

Although no separate institutions for educating the women existed during the Mahabharata age, yet the description of women makes it evident that education regarding different subjects was imparted to them. The curriculum of women education included: Veda, Purana, Smrti, Sastras, religious, moral, cultural, political and vocational education, education regarding different arts, education regarding Brahman etc.

Vedic education formed an integral part of women education during the Mahabharata age. Sakuntala recited the Vedic mantra before the king Dusyanta, Kunti, the mother of the Pandavas, acquired the knowledge of the mantras of Atharvaveda from a Brahmana. Women were imparted Pauranic education during the age of Mahabharata. Kunti narrated the story of king Vyushitaswa and his wife Bhadra to Pandu which was based on Puranas.

Women were imparted education regarding Smrtis during this age. For example, Sakuntala, quoting Manu described five types of sons to the king Dusyanta.

Women were also given education of different Sastras during the Mahabharata age. Kunti described Vidula as conversant with all Shastras. The saying of Sakuntala that even atheists get annoyed with those who deviate from the path of truth is a sufficient proof that she had been taught the philosophy of atheists.

Religious education was one type amongst different types of education which was imparted to women. The last words of blessings spoken by Kunti to her sons that the choice of their intellect should befall on dharma prove Kunti's knowledge of religion. Draupadi discussed the characteristics of virtue with Yudhisthira. Savitri observed fast, offered oblations to the sacrificial fire according to due rites. This description proves that she had been imparted religious education.

Sukanya started to serve her husband Chyavana by practising asceticism and observing the ordinances and also served the sacred fire. The sayings of Gautami, Kunti, Gandhari, Sulabha shows that they were imparted various faculty of education.

Women were taught different arts like dancing, singing and instrumental music during this time. The king of the Matsyas had erected a house for dancing where the girls used to dance during the day. It means that women were imparted education in dancing during those days.

CONCLUSION

The general position of women in ancient India was unique. They enjoyed high status and independence in the society. An unmarried young learned daughter ought to be married to a learned bridegroom. Girls could freely choice their husbands.

Women in ancient India had free access to education. They were expected to participate in Vedic sacrifices and utter mantras. This is evident in various references made in Ramayana and Mahabharata.

For a long time, home was the only place of instruction and even boys used to receive education only from their fathers or elders. This can be seen in the period of Ramayana. The same naturally was the case with girls. But in later times, during the period of Mahabharata a class of women teachers came to being (Upadhyayani). Lady teachers may probably have confined themselves to the teaching of girl-students. Panini refers to boarding houses for lady-students, chhatrasalas, and these probably were under the care of lady teachers.

It is difficult to determine the exact extent of education imparted to women during the early Vedic period in India. The only education to a girl of an ordinary family received was one which fitted her to fulfil her duties in the household of her husband. Thus, the education of girls was entirely domestic. They used to receive education at homes.

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A STUDY ON THE IMPACTS OF WORK FROM HOME AMONG INFORMATION TECHNOLOGY PROFESSIONALS

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ABSTRACT

COVID-19 is a viral infection that began in China at the end of 2019 and was declared as public health emergency of international concern in January 2020. The unexpected occurrence of the COVID-19 outbreak has undeniably disrupted the normalcy of everyone's life. The COVID-19 pandemic has changed all the aspect of our work and life. Covid 19 has enforced all IT employees to work from home, for the time being and then it continuing till the now. This study wants to describe the impact of work from home among IT employees. As all the employees are having new experience with new normal working, we would like to find out employee's stress while working from home compare to working from office. There has been widespread propagation of safety measures to be adopted to prevent further spreading of the virus.

KEYWORDS: Work from home, IT employees, employee's expectation, work from home impact, COVID-19 pandemic, home office.

INTRODUCTION

Work from Home is also known as remotely connecting or **telecommuting,** which mainly indicates that the employees are working from a remote space/location usually home. Work from home is a new normal work approach recently enabled due to COVID 19 pandemic with the help of internet wherein employees can operate irrespective of the physical location. Work from home concept is a recently added approach towards completion of the task and it's very important in current pandemic situation. This new system supports the organization to increase the productivity of the employee and at the same time they can be with their families and help them in case of any family emergency. The current state of remote workers, their concerns about returning to the office, and the role technology can play in supporting businesses in their transformation to the hybrid workplace. Many IT started work from home concept due to pandemic and increased their productivity than their expectation. This study mainly focused to understand the impact of work from home among IT employees with reference to their work life and stress management.

Fig – 1, Factors associated while WFH.

STATEMENT OF THE PROBLEM

Maintaining the overall productivity levels is one of the biggest challenges that organizations are facing especially in the pandemic situations like Covid-19. Work-life balance is important for an organization as well as the employees. The most followed way to maintain the productivity levels at its maximum as well as ensuring safety of employees is the 'Work from home' model. Work from home in the IT sector in in India

especially is indeed a new experience for most of the employees. This may have positive and negative impacts. The willingness towards working from home may any time change based on certain factors associated with it. This study mainly analysed the problems mentioned which is mentioned below.

i.   Does work from home boost the overall productivity and learning of the employees?

ii. Are they interested to continue doing WFH?
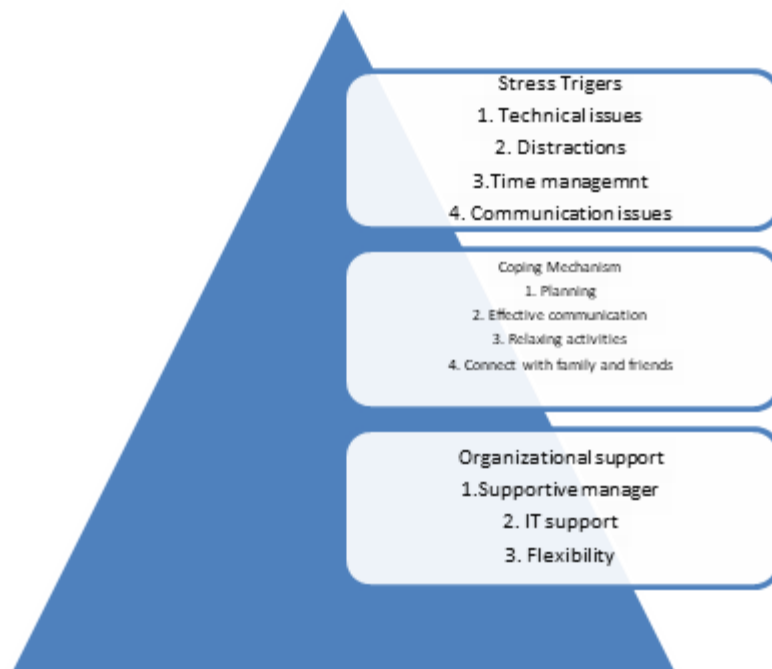
iii. Are they stressed while working from home?

Fig-2, Stress triggers

NEED OF THE STUDY

COVID-19 pandemic has totally changed about the perception of IT professionals. The complete remote working environment had started in the pandemic time and still continues. Employees suddenly got switched to the new normal as all of them did not have any other option. They absolutely had no option instead of getting adjusted to new normal of working. Many was facing issues lack of tools and technologies and getting trained to the new normal and coping up with the daylong meetings in the technical platforms. Hence this study was done to analyse the willingness and productivity levels of employees while working from home. Through the survey method it was measurable to identify the major factors effecting the employees during working from home and the impacts on the performance.

SCOPE OF THE STUDY

The scope of this study is to understand analyse and support the professionals on the major impact on working from home and the Work from home will be one of the most used terminology in the coming days and all most all the IT companies realised that this will be a major hit to reduce operation cost to a great extent. On the other perspectives, a talented candidate can look for job in anywhere in the globe as the location is not playing a major role in the new normal.

OBJECTIVE OF THE STUDY

• To analyse the stress level

• To find out the work life balance

• To understand the organizational culture

• To analyse the factors affecting WFH such as social, demographic, physical and well-being of employees

REVIEW OF LITERATURE

This study also includes the wide-ranging literature reviews on working from home. To understand the different factors which effects the employees and to find out employee's stress level while from home due to covid 19 pandemic.

Impact of organizational culture on productivity

Positive and negative impacts of work from home.

Positive Impacts

- Stay healthy and stay in a pollution-free environment

- Different technologies and tools help to drive remote monitoring of employees

- Operation cost reduction for organization

Negative Impacts

- Daily tasks never have a closure time

- Get frequently distracted

- Performance monitoring for the employees by their respective supervisors gets tough

RESEARCH METHODOLOGY

The study is purely based on the responses of 155 respondents working from home belonging to different IT organisation during COVID 19. Data is collected during October 2021, the time frame when all the employees are compelled to work from home. All the respondents of this study are from IT sector. All the respondents of this study are working from home for last 18 months continuously A questionnaire method was used to analyse the factors and different stress levels among employees from 1st to 6th October, 2021 and received 155 responses and those were valid. All the respondents of this study are IT employees, Participants responded to questions for different types of factors such as geographic, demographics, social, cultural and environmental etc. Data reported here are focused on factors associated with changes in working hours majorly work life balance employee engagement and employee stress management; whereas, analysis of data is mainly related to work performance of employees and working hours. This questionnaire was reviewed and approved by the university's review board members and HR and Technical leaders from IT Corporates.

DATA ANALYSIS & INTERPRETATION

A descriptive survey method was performed to collect the relevant data among 150 working professionals in Information Technology (IT) .

As a result, personal experiences and work-life balance with WFH models shouldn't be ignored

1. 75% of the employees suggest that it needs to be continued with proper communication and learning opportunities with an affordable objective and goal setting

2. 25% would want to operate from office

Graph-1 opinion about WFH Continuation

Chart 2 Opinion from employees about WFH
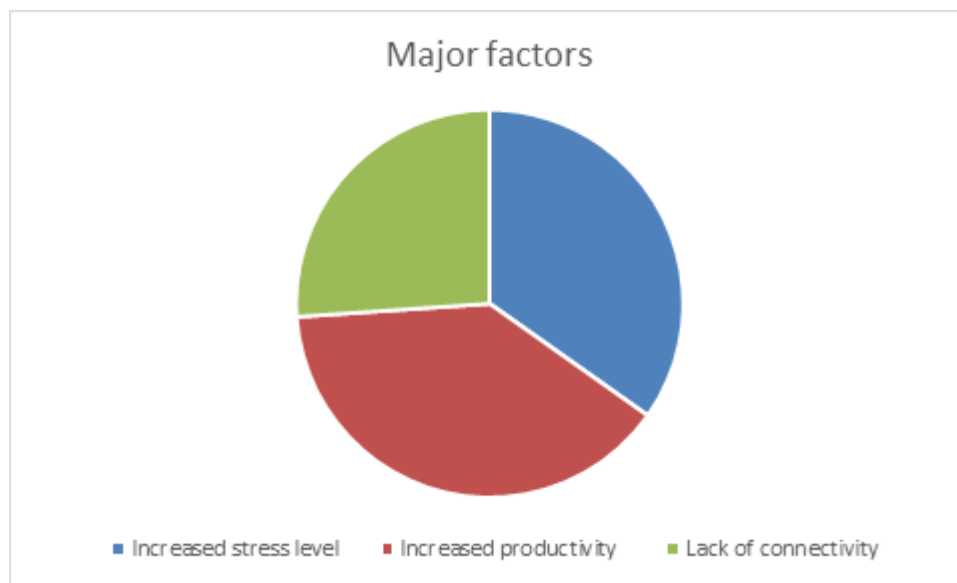
SECONDARY REFERENCE

Several studies over the past few months show high productivity while working remotely from home is better than working in an office environment. On an average, those who are working from home spends lesser unproductive hours compared to office, employees are spending long ours than usual and the conveyance time is completely saved, those are also utilised to bring the productivity high. According to the findings many corporates are financial officers are planning to make permanent move to their human resources to remote working/work from home environment to save their total office cost post Covid-19 pandemic

SUGGESTION

- Most of the employees look forward to have more frequent leadership connect with them to understand the organizations current update and culture.

- Many of them responded that they need to have a great space in learning and development activities so that they can upgrade more with the technologies and other work-related aspects.

- Leaders can look into re arranging the goals and objective so that the work load and stress level can be reduced in certain levels.

LIMITATIONS OF THE STUDY

This study is restricted to only IT employees and employees working in software services development, design and testing working across industries, India and abroad the study is based on 156 responses across IT industries. This study can also be taken further as lot of changes are arising due to the pandemic situation. The mentality and stress level of the employees also differs from situation to situation as well as from time to time.

FINDINGS

From this study 75% of the respondents are stressed due to the work load given by the organization during work from home and the organizational culture is also one of the major factors affecting work from home. 85% of the IT employees says their working hours had increased compare to working from office. Because of the long working hours, it affecting their family life as well. 80% of them are facing connectivity issues as well while attending meetings from remote locations. Majority of the employees who participated in the survey had responded that the reported that remote working environment is causing employees to feel stressed with more work, and the family lifestyle also is getting disturbed in some cases and its totally affecting work life balance and reduces the learning and development opportunities. And they missed connecting with their colleagues in person and the actual connect is missing and that intern leads to dissatisfaction among them.

- Increased stress level

- Decrease learning and development activities

- Decreased rewards and recognition

- Increased work load

- Increased working hours

CONCLUSION

There are positives and negatives on the same as employees are very much productive which is beneficial for employees as well as the organization but at the same time, they are struggling to maintain the work life balance and the family. Technical and infrastructure issues are more found to have high stress levels for the employees. This study highly recommend infrastructural and leadership support is necessary for employees during work from home and clear objectives need to be set for them to achieve their goals. If the working hours and the task can get reduced then they will have a healthier life. Leadership can strongly look in to the goals and objectives and analyse the given set of activities in a day to each employee and try to make an equilibrium so that it will be beneficial for both. Time management is also a biggest factor which affects the work life balance and increases stress level which intern bring other health issues to overcome this its suggested that they need to get more learning and development opportunities and employee engagement activities to reduce stress levels from the leadership/organization to grow better.

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YOGA: HEALTHY WAY OF LIFE

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ABSTRACT

Yoga had a crucial contribution towards health since long time ago, especially during COVID – 19 which had exploded throughout the world caused by Severe Acute Respiratory Syndrome (SARS), which came up with public health crisis. India government declared first full lockdown for 21 days to minimize the outspread of virus, that time people were mentally affected locking up themselves inside the four corners of home just doing nothing, people were restricted to go outside, in fact they were advised to do work from home. People were bond with many restrictions and of course fear of being tested corona positive, now a days people are becoming more anxious about their health and fitness than before and escaping themselves being infected with deadly virus. In particular, person who are already suffering from heart diseases, diabetes, kidney failure, chronic lung diseases and the elderly are at more risk to succumb to this deadly virus. This is where yoga gives a track to boost immunity system, individual to stay healthy and fit to resist with destructive virus and other health issues.

Key words: Yoga, COVID-19, SARS, Succumb

Yoga has been practiced for years and years for the purpose of fitness and health. Yoga is a classic way to strengthen our immunity system to fight back with disease. Improper sleep, inadequate diet and less physical activity, altogether accompanied to weakened immune system. Meanwhile, the whole world was going through tough time Yoga probably became best way to rescue from health issues and maintain a healthy life. During COVID – 19, lockdown period all the gyms, sports centre, park was closed, here yoga became a hope for every individual to overcome stress and maintain health and helps losing weight and in addition it does not need such equipment or huge space, it cost less all you need is a piece of mat where one can perform asanas or any yoga practices efficiently and effectively. Yoga can be done anywhere, where you will feel comfortable.

During this pandemic period people were not only affected with this virus but some went through depression, stress and mental sickness, sleepless night. Constant practice of yoga along with minimum 10 minutes of deep meditation either morning or evening time can help people to overcome all these mental problems. Meditation is another aspect of yoga which trains the brain to aware the sense of self-realisation and refines one's perspective. There are lots of research done in meditation which had been proved that it considerably works on anxiety, stress, pain and other mental sickness. Mediation can be practiced by everyone; it might be difficult at the beginning but daily practice will definitely improve the mediation habit, as there is a saying "practice makes a man perfect", so one must keep on practice. According to Marina and Yoga (2019) "yoga helps overcome stress, improve the concentration level, enhance self-confidence, bring calmness and reduce anxiety in short yoga is all about maintaining inner peace and relaxing mind".

There are plenty of misconception about yoga some says "yoga is all about bending and twisting body in a strange posture". Yoga is much more than this; it has lots of benefits which are beyond our imagination without any side effect. Throughout this pandemic period mass number of people somehow started adopting yoga as their fitness regime to keep themselves healthier. I have my own experience with yoga it helps to cleanse body from within, in fact it has a power to control the mind and soul. It teaches us how to relax and study the demand of a body.

As it is said that COVID-19 virus weakens our lungs prior, so pranayama (breathing exercise) is considered as the best way to train our lungs to defeat such viruses. As per yoga experts and research study, that regular practice of pranayama (breathing exercise) such as Anulom-Vilom, Kapalbhati and Bhastrika make our lungs healthier and several other benefits. While practicing this pranayama we need to be more focused on our breathing techniquesto cover up more advantages of it.

CONCLUSION

Keeping COVID-19 situation in mind this year theme of International day of yoga was "Yoga for Health -Yoga at Home" massive participation was observed this year thousand and thousand people joined the programme through online. There were many webinars conducted on topic yoga and its benefits aiming to aware the people that why yoga should include in a fitness regime and how it can be advantageous and helpful. At present day Yoga is considered as life saver, if we see this year people have faced many health crises. Though yoga is

practiced from ancient time but due to COVD-19 yoga became more popular throughout the world. Yoga has that ability to cure almost every health issues from controlling blood pressure to correcting odd postures.

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CORPORATE SOCIAL RESPONSIBILITY IN INDIA: AN OVERVIEW

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ABSTRACT

In recent times, Corporate Social Responsibility is a subject which has evoked considerable discussion ubiquitously, especially in wake of pandemic Covid-19. CSR plays vital role in winning the confidence of stakeholders that may help in creating value for business and its subsequent growth. India is no exception to it. In India, CSR has come a long way, right from philanthropic era in ancient times to the time of its legislation in 2014 when India became first country in the world to legally mandate Corporate Social Responsibility for certain profitable companies. The present paper is an attempt to take cognizance of evolution of Corporate Social Responsibility in India whereby it traces the CSR phases from Philanthropic era to legal era. It also analyses the compliance of Companies with legislation under Section 135 of Indian Companies Act 2013, on CSR Spend and Reporting. The findings of the study reveal that the states like Maharashtra, Karnataka, Gujarat, Tamil Nadu, Andhra Pradesh and Delhi have received approximately 39% of the total expenditure on CSR from 2014-15 to 2019-20. Amongst the development sectors it is the sector of Education that has emerged as the most favored intervention area of Indian companies. In recent times, more and more Indian companies are getting accustomed to the notion of being socially responsible, though there is still a long way to go.

Keywords- CSR Compliance, Philanthropic, Industrialization, Social, Environmental and Economic Responsibility.

INTRODUCTION:

Today Corporate Social Responsibility has become a social norm which has been embraced by corporations ubiquitously. There are many instances where corporate have played a dominant role in addressing issues of education, health, environment and livelihoods through their corporate social responsibility interventions across the globe (Nadaf & Nadaf, 2014). CSR is generally understood as being the way through which a company achieves a balance of economic, environmental and social imperatives while at the same time addressing the expectations of stakeholders (Premlata & Agarwal, 2013). India is no exception to it. It is the first country in the world to legally mandate Corporate Social Responsibility for certain profitable companies. With introduction of Section 135 in Indian Companies Act 2013, CSR spending and reporting have been legally mandated, thereby bringing it under the purview of Company Law. By April 2014, the policy guidelines for this had come into force.

The aim of this paper is to take cognizance of evolution of Corporate Social Responsibility in India right from ancient times till date. It also examines trends in terms of CSR Spending and Reporting by Indian Companies in pursuance of Section 135 of Indian Companies Act, 2013.

EVOLUTION OF CSR IN INDIA:

Philanthropic Era of CSR

The concept of Corporate Social Responsibility is not new in India. Its origin can be traced to ancient times, with its references found in our Vedas. Atharva Veda propagates that – one should procure wealth with one hundred hands and distribute it with one thousand hands. The Yajurveda promulgates that riches should be enjoyed with detachment, as the riches belong to the public, they are not yours alone.

In its initial form CSR was primarily an outcome of philanthropy. It was influenced by religion, culture and family values. The wealthy businessmen would share their riches by either setting up temple or opening their granaries to feed the poor and hungry in times of famines. The approach to CSR changed with arrival of colonial rule. Under the influence of western industrialization India's leading industrialists pioneered the concept of 'CSR motivated business' wherein they also had commercial interest in supporting efforts for nation building. Mahatma Gandhi's theory of Trusteeship influenced the Indian companies to set up trusts for educational institutions, training and scientific institutions, in line with Gandhian's reforms of abolishing untouchability, empowering women and encouraging rural development.

The emergence of Public Sector Undertakings in 1960s witnessed extensive legislation on labour and environmental standards. The public sector undertakings were given the primary responsibility of nation building and the private sector suffered a setback in wake of industrial licensing, high taxes and quota that

resulted in gross corporate malpractices. However, later on the private sector was involved in the development process of the country

In the year 1991, Indian economy witnessed an increased momentum of growth under the wave of liberalization, privatisation and globalization. For meeting the global expectations Indian companies moved towards integrating CSR into coherent and sustainable business strategy.

Legal Era of CSR
Government of India made first attempt to endorse CSR formally by issuing Corporate Social Responsibility Voluntary Guidelines in 2009, which clearly set out that CSR is not philanthropy and CSR activities are purely voluntary – what companies would like to do beyond any statutory requirement or obligation(MCA,2009). These guidelines were followed by in 2011 by the National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business, to guide the corporate sector in their efforts towards inclusive development.

The changeover from a voluntary CSR regime to a regulated regime took place in 2012 when Securities & Exchange board of India (SEBI) mandated Top 100 Listed Companies by market capitalization to file Business Responsibility Reports (BRR) as part of their Annual Report, as per the disclosure requirements of National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business. This requirement subsequently increased to the Top 500 Listed Companies by market capitalization in 2015 and later to the top 1000 Listed Companies in 2019. Keeping pace with the global development, namely, the UN Sustainable Development Goals, Paris agreement on Climate Change and the UN Guiding Principles on Business & Human Rights, the National Voluntary Guidelines of 2011 were revised and subsequently released as the National Guidelines on Responsible Business Conduct (NGRBCs) in March 2019.In May 2021 it was decided that new reporting requirements on ESG (Environment, Social and Governance) parameters called the Business Responsibility & Sustainability Report (BRSR) would be introduced in place of Business Responsibility Report (BRR). The BRSR, applicable on the top 1000 listed companies by market capitalization, would be on voluntary basis for FY 2021-22 and on a mandatory basis from subsequent FY, i.e., 2022-23.

The most ambitious attempt to mandate the Corporate Social Responsibility cropped up with the enactment of Section 135 of Companies Act, 2013. India became the first country to make CSR activities compulsory for specified companies. The Act requires companies with a net worth of Rs.500 Crore or more, or turnover of Rs.1000 Crore or more, or a net profit of Rs. 5 Crore or more during the immediately preceding financial year to constitute a CSR Committee of the Board comprising 3 or more directors for recommending an expenditure to be incurred on CSR activities earmarked by it, and monitor the CSR Policy from time to time. Such company will have to spend at least 2 per cent, of the average net profits of the company made during the three immediately preceding financial years in pursuance of its CSR policy. It is also mandatory to disclose the content of the CSR policy in the annual report and it needs to be placed on the company's website, if any.

Moreover, CSR policy will elaborate the activities to be undertaken by the company as per Schedule VII to the Companies Act 2013.An activity done by the company in its normal course of business shall not be construed as CSR activity for the purpose of Section 135, which eventually came into effect on April 1, 2014.The activities mentioned in Schedule VII range from basic life amenities to social and environmental concerns. The reasons for not spending amounts would be disclosed in the Board's report.

The year 2020 turned out to be probably the worst in the history of mankind, with covid-19 pandemic disrupting lives across the globe and negatively affecting global economic growth. In March 2020, GOI announced that spending to create health infrastructure for Covid-19 care would tantamount to CSR activities under Section 135 of the Companies Act, 2013.

CSR Trends in India
This section presents in-depth analysis of available data with respect to various parameters of CSR Spending in India. As discussed earlier also, section 135 of the Companies Act, 2013 requires companies with net worth of Rs.500 crore or more, or turnover of Rs.1000 crore or more, or a net profit of Rs. 5 crore or more during the immediately preceding financial year, to spend at least 2 per cent, of the average net profits of the company made during the three immediately preceding financial years on CSR activities and disclose the CSR related details in the Director's Report as prescribed under the Act.

A. Percentage of Liable Companies Reporting on CSR
Table 1 presents figures regarding percentage of companies mandated for CSR spending and disclosing the same in their annual report. The perusal of Table 1 reveals that in FY 2014-15, 63% of the companies which

were liable to spend on CSR and report to MCA, have actually done so. This figure increased to 71% in the following FY 2016-17; however, it dipped in the subsequent years.

Table 1: Percentage of liable companies Reporting on CSR

Year	Companies Liable for CSR & Reporting	Companies Liable for CSR but not Reporting
2014-15	63%	37%
2015-16	71%	29%
2016-17	67%	33%
2017-18	54%	46%

Source: Report of CSR HLC, 2018

B. CSR Compliance

This part shows compliance status in terms of CSR expenditure with respect to Total CSR Prescribed Amount over a period spanning from 2014-15 to 2017-18.

Table2: CSR Expenditure versus Total CSR Prescribed Amount

Financial Year	Total CSR Expenditure(INR Crore)	Total CSR Prescribed Amount (INR Crore)	Compliance in terms of CSR Expenditure (%)
2014-15	10065.93	17140.42	59%
2015-16	14503.65	17044.45	85%
2016-17	14312.03	19789.9	72%
2017-18	13326.69	23247.9	57%

Source: Report of CSR HLC, 2018

Analysis of Table 2 reveals that compliance in terms of CSR expenditure as a percentage of Total CSR prescribed amount has been quite moderate, except in FY 2015-16, for which compliance percentage rose to 85% from 59% in the preceding year. However, the number of companies contributing total CSR expenditure improved over the same time span. Table 3 presents percentage of companies reporting on CSR having positive CSR expenditure.

Table 3: Percentage of Reporting Companies Contributing Positive CSR Expenditure

FY	% age of Companies having positive CSR Expenditure	Total CSR Expenditure in the Year (INR Crore)
2014-15	45%	10065.93
2015-16	58%	14503.65
2016-17	67%	14312.03
2017-18	71%	13326.69

Source: Report of CSR HLC, 2018

Table 3 shows that 45% of the liable companies reporting on CSR have contributed expenditure of Rs. 10065.93 Crore for the FY 2014-15. This percentage figure consistently improved over a time span of four years, which clearly vindicates that more and more Indian companies are getting receptive to a culture of being socially responsible post the enactment of section 135 of the Companies Act, 2013.

C. Issues relating to CSR compliance

As mentioned earlier, companies will have to disclose the reasons for not spending/under-spending the CSR prescribed amount in their Board's report. Table 4 peruses some of the reasons cited by the companies over a time period of four years from 2014-15 to 2017-18.

Table 4: Major reasons reported for not/under-spending CSR prescribed amount

2014-15	2015-16	2016-17	2017-18
Suitable Project Not Found	Delay In Project Identification	Delay In Project Identification	Delay In Implementation of Plan
First Year of CSR	Suitable Implementing Agencies Not Found	Delay In Implementation of Plan	Adoption of Long Gestation CSR Programmes / Projects

Multi Year Projects	Delay In Implementation Of Plan	Due To Multiyear Projects	Inability of Company To Formulate A Well-Conceived CSR Policy
Majority Of The Projects Were of Infrastructure Development In Rural Areas, Which Involve Long Implementation Period	Suitable Projects Not Found	Lack of Prior Expertise	Lack of Prior Expertise
Suitable Implementing Agency Not Found	Delay In Project Identification	….	…..
Delay In Implementation of Plan	…….	……	……
Suitable Implementing Agencies Not Found	……	……	……

Source: Report of CSR HLC, 2018

It can be gauged from the findings of the Table 4 that the most notable reasons cited for not/under-spending CSR prescribed amount are (i) problem in identifying a suitable project, (ii) suitable implementing agency not found and (iii) multi-year projects.

D.   CSR expenditure across areas or subjects mentioned under Schedule VII

TABLE 5: Top Ten States/Uts CSR Spend Wise (From2014-15 to 2019-20) Amount in INR Crore

States/UT	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL	%AGE
Maharashtra	1445.91	2052.23	2492.11	2565.59	2864.04	2751.21	14171.10	15.27
Karnataka	403.46	784.66	887.68	1034.33	1224.92	1383.65	5718.69	6.16
Gujarat	313.44	551.42	870.84	775.90	1065.90	910.13	4487.63	4.84
Tamil Nadu	539.63	633.23	550.94	627.75	829.27	919.05	4099.88	4.42
Andhra Pradesh	414.27	1294.28	753.53	275.28	644.83	679.19	4061.36	4.38
Delhi	237.43	493.34	521.16	558.33	674.17	643.99	3128.41	3.37
Odisha	252.18	624.04	316.72	472.58	682.87	679.43	3027.83	3.26
Rajasthan	299.75	502.95	325.15	263.83	549.02	696.77	2637.47	2.84
Uttar Pradesh	148.90	423.79	328.31	302.92	479.88	496.13	2179.93	2.35
Haryana	187.40	375.61	390.07	266.09	335.53	474.43	2029.14	2.19

Source: https://www.csr.gov.in/static_report.php

An analysis of Top Ten States/UTs as per CSR Spend in Table 5 reveals that concentration of CSR-led activities is the highest in the state of Maharashtra followed by Karnataka and Gujarat at second and third places respectively. As a matter of fact, the states like Maharashtra, Karnataka, Gujarat, Tamil Nadu, Andhra Pradesh and Delhi have received approximately 39% of the total expenditure on CSR from 2014-15 to 2019-20.

TABLE 6:Bottom Five States/UTs CSR Spend Wise (From2014-15 to 2019-20) Amount in INR Crore

States/UT	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL	%AGE
Sikkim	1.19	1.98	6.83	6.84	4.58	3.94	25.37	0.03
Nagaland	1.11	0.95	0.92	0.36	2.11	1.64	7.09	0.01
Lakshadweep	0.00	0.30	0.00	2.07	0.39	1.00	3.76	0.00
Andaman And Nicobar	0.29	0.55	0.83	0.76	0.43	0.68	3.53	0.00
Mizoram	1.03	1.07	0.08	0.23	0.11	0.25	2.77	0.00

Source: https://www.csr.gov.in/static_report.php

On a flip side, the north-eastern states like Mizoram, Sikkim, Nagaland form the bottom five receivers of CSR funds along with Lakshadweep and Andaman & Nicobar, as shown in Table 6.

Table 7: CSR Data Development Sector Wise (From 2014-15 to 2019-20) Amount in INR Crore

Development Sector	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	TOTAL	%AGE
Education	2589.42	4057.45	4504.87	4736.23	5747.73	6354.34	27990.04	30.16
Health Care	1847.74	2569.43	2491.52	2227.90	3233.35	4332.97	16702.92	18.00
Rural Development Projects	1059.35	1376.16	1554.78	1479.80	2311.27	2081.41	9862.77	10.63
Environmental Sustainability	773.99	796.69	1076.46	1083.05	1296.26	1319.00	6345.45	6.84
Poverty, Eradicating Hunger, Malnutrition	274.70	1252.08	606.55	654.80	1092.41	1017.19	4897.73	5.28
Livelihood Enhancement Projects	280.17	393.38	515.47	708.99	850.72	890.68	3639.41	3.92
Vocational Skills	277.07	344.40	373.46	391.76	759.49	1094.69	3240.88	3.49
NEC/ Not Mentioned	1338.40	1051.18	388.96	1.04	87.54	95.61	2962.73	3.19
Other Central Government Funds	277.10	334.35	419.99	255.63	710.81	769.60	2767.47	2.98
Sanitation	299.54	631.80	421.71	293.15	445.45	446.37	2538.03	2.74
Prime Minister's National Relief Fund	228.18	218.04	158.80	175.96	302.67	662.01	1745.66	1.88
Art And Culture	117.37	119.17	305.57	284.10	191.25	545.47	1562.93	1.68
Training To Promote Sports	57.62	140.12	180.33	227.75	295.20	262.54	1163.57	1.25
Safe Drinking Water	103.95	180.16	147.79	180.35	212.04	221.78	1046.07	1.13
Swachh Bharat Kosh	113.86	325.52	184.06	213.68	93.81	49.97	980.90	1.06
Women Empowerment	72.87	122.79	141.62	203.90	200.45	193.69	935.32	1.01
Special Education	41.43	125.84	165.33	124.84	177.98	180.12	815.55	0.88
Socio-Economic Inequalities	39.04	77.97	148.01	137.50	164.89	197.86	765.27	0.82
Conservation Of Natural Resources	44.60	49.85	119.09	214.21	63.21	46.98	537.95	0.58
Animal Welfare	17.29	66.67	78.70	59.13	96.28	98.46	416.53	0.45
Gender Equality	55.21	73.85	72.60	20.49	50.96	70.07	343.18	0.37
Slum Area Development	101.14	14.10	51.49	35.11	50.34	36.11	288.28	0.31
Setting Up Homes And Hostels For Women	8.74	29.28	61.97	69.23	53.24	38.64	261.10	0.28
Agro Forestry	18.12	57.85	43.45	12.18	64.70	56.80	253.10	0.27
Armed Forces, Veterans, War Widows/ Dependants	4.76	11.14	37.86	27.72	89.45	59.26	230.20	0.25
Senior Citizens Welfare	8.94	21.87	27.75	33.07	38.91	46.82	177.36	0.19
Technology Incubators	4.74	26.34	23.09	15.62	30.51	28.40	128.70	0.14
Setting Up Orphanage	5.12	16.90	16.80	37.05	11.67	30.09	117.63	0.13
Clean Ganga Fund	5.47	32.82	24.37	4.54	5.41	4.20	76.82	0.08

Source: https://www.csr.gov.in/static_report.php

On examining CSR data Development Sector Wise in Table 7, it is clearly visible that Education is the most preferred intervention area for companies, followed by sectors of Health Care and Rural Development Projects at second and third places respectively. Thus, the cause of education has received the highest amount of CSR funding, given its impact on standard of living and the career opportunities it opens up.

Table 8: Contribution by Indian Companies (From 2014-15 to 2019-20) in INR Crore

RANK	FY 2014-15	CSR	FY 2015-16	CSR	FY 2016-17	CSR	FY 2017-18	CSR	FY 2018-19	CSR	FY 2019-20	CSR
	CO. NAME	(INR CR.)	CO. NAME	(INR CR.)	CO. NAME	(INR CR.)	CO. NAME	(INR CR.)	CO. NAME	(INR CR.)	CO. NAME	(INR CR.)
1	Reliance Industries LTD	760.6	Reliance Industries LTD.	639.7	Reliance Industries LTD.	649.26	Reliance Industries LTD.	745	Reliance Industries LTD.	849.3	Reliance Industries LTD.	908.7

2	Oil and Natural Gas Corporation LTD.	495.2	NTPC LTD.	491.8	Oil and Natural Gas Corporation LTD.'[p-	504.91	Oil and Natural Gas Corporation LTD.	482.1	Oil and Natural Gas Corporation LTD.	586.9	TATA Consultancy service LTD.	602
3	Infosys LTD.	239.5	Oil and Natural Gas Corporation LTD.	409	TATA Consultancy service LTD	380	TATA Consultancy service LTD	400	Indian Oil Corporation LTD	468.2	Oil and Natural Gas Corporation LTD.	582.1
4	Bharat Heavy Electricals Ltd.	239.1	TATA Consultancy service LTD	280.2	HDFC Bank LTD	305.42	HDFC Bank LTD	374.6	HDFC Bank LTD	443.8	TATA Sons Private LTD.	548.8
5	TATA Consultancy service LTD.	218.4	ITC LTD	247.5	Infosys LTD.	289.44	Indian Oil Corporation LTD	331	TATA Consultancy service LTD	434	HDFC Bank LTD.	535.3
6	ITC LTD	215.1	Central Coalfields LTD.	214.6	NTPC LTD.	277.81	Infosys LTD.	312.6	Infosys LTD.	342	Indian Oil Corporation LTD.	518.5
7	NTPC LTD.	205.2	NMDC LTD.	210.1	ITC LTD.	275.96	ITC LTD	291	Mahanadi Coalfields Limited	334.3	Infosys LTD.	359.9
8	NMDC LTD	188.7	TATA Steel LTD.	204.5	OIL India LTD.	216.74	Mahanadi Coalfields Limited	267.5	ITC LTD.	307	Bharat Petroleum Corporation LTD.	346.5
9	TATA Steel LTD.	171.5	Infosys LTD	202.3	Indian Oil Corporation LTD.	213.99	NTPC LTD.	241.5	TATA Steel LTD.	305.5	Power Grid Corporation Of India LTD.	346.2
10	ICICI Bank LTD.	155.5	Power Finance Corporations LTD.	194.5	Wipro LTD.	186.31	TATA Steel LTD	231.6	NTPC LTD.	285.5	ITC LTD.	342.2

Source:

Table 8 shows the contribution done by different companies in CSR activities. An analysis of top 10 companies as per CSR spending the above table reveals that Reliance Industries Ltd., HDFC Bank Ltd., Oil and Natural Gas Corporation Ltd. are consistent Contributors in CSR activities, whilst Reliance Industries Ltd. maintains its position with first Rank since 2014. In contrast, Companies like ICICI Bank Ltd., Power Finance Corporations., are eliminated from the list of top Companies. It is evident from the table that 80% companies made their position stable in top 10 ranking. There has been increase in CSR spending in the year 2019-20.

CONCLUSION:

All the more, it has become imperative for the corporate to ramp up their focus on social responsibility. CSR has paves the way for companies to explore new market opportunities while also keeping intact, brand loyalty among their stakeholders. In Indian context, things have started to change with Indian companies vying to match global CSR standards. Moreover, the government has become an active player in the whole scenario, when it legally mandated CSR in the country. The findings of the study reveal that Education is the most favored intervention area followed by the sectors of Health Care and Rural Development Projects at second and third places respectively. More and More Indian companies are getting accustomed to the notion of being socially responsible. On flip side, the north-eastern states have not done reasonably well in terms of CSR activities. In context of Corporate Houses, Reliance Industries Ltd., HDFC Bank, Oil and Natural Gas Corporation Ltd have consistent CSR performers. There is dire need for more Indian companies to make substantive contribution to the development of economy. The pandemic of Covid-19 has been an eye-opener for the governments across the globe. The responsibility of corporate houses is no less and with resources at their disposal, they really to participate actively and substantively, in collaboration with their respective governments, in reviving their economy and become progressive nations. It would be extremely appreciative of those Indian companies who are not covered by section 135 of Indian Companies Act 2013 and, yet they chip in and take CSR activities as a way to give back to the people and the society at large.

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THE LESSON LEARNED FROM THE PANDEMIC IN TERMS OF EXPORTS

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ABSTRACT
The essence of international marketing ,intended to satisfy human needs or wants . international marketing during the pandemic was probably not on agendas of many international marketing professional in 2019 , yet its 2020 and this paper will give a great insights on the types of international marketing getting so familiar during this emergency situation

INTRODUCTION
The term marketing is very familiar to all of us. The market are so intimately connected with our evey day In the term international marketing is it can convicted as an integrated of two process that technical ,social .so far as the technical process includes non -human factor such as produced, price cost According to Philip kotlar. " Analysis , organization, planning and controlling of the firms customer Implying resources ,policies ,activities which a view to statutory the needs and wants of a chosen grope of a project "

ABOUT WORLD MARKET
It concert with flow of goods and service across national borders .the focusem of analysis is oncommercial and monetary conditions

INDIA'S ROLE IN WORLD MARKET
India is the biggest export of basmathi rice ,tea, pearl semi precious stoens medicine , textile lether ,and ayurveda products . software and different kind of administration , commercial activities, are the most in demand from India

There is a major economic achievement need for the nation because India represente only 0.8% of the world exports . The GDP has significantly expanded from 14.6% in 1990-1991 and gettingincreased 24.1% in 2003-2004p

IMPACT OF PENDAMIC IN WORLD MARKET
This corona virus -19 has affected the whole world

The world is affected by the corona virus infection. World trade is no exception and lot of peoplesuffer by the virus and they lost their closed person lost their job , bussiness ..so the world need a strength to over come the pandemic

THE INTERNATIONAL MARKETING CAN CONCERN FOR MANY FIRMS DUE TO COVID
The COVID-19 outbreak occurred in a context of sluggish global trade that has been dragging on since the 2008–2009 financial crisis. The rapid spread of COVID-19 and the measures taken by governments to contain it have had serious consequences for the world's major economies. Many productive activities have been disrupted, first in Asia and then in Europe, North America and the rest of the world, and there have been widespread border closures. This has resulted in a steep rise in unemployment, especially in the United States, with a consequent reduction in demand for goods and services. Against this backdrop, global GDP in 2020 is expected to register its sharpest contraction since the Second World War.

In this situation, the volume of global trade in goods fell by 17.7% in May 2020 compared with the same month in 2019 The drop in the first five months of the year was widespread, although itparticularly affected exports from the United States, Japan, and the European Union. The economic contraction in China was smaller than the global average, as that country controlled the outbreak and reopened its economy relatively quickly. Latin America and the Caribbean is the most affected developing region.

TO RECOVER THE TRADE WE MUST FOLLOW THE BELOW STRATEGIES
- Boost confidence in trade
- Improving transparency about trade related
- Keep supply chain following
- essentially such as health supplies and food

- Avoid export restriction

RECOVERING STRATGEYS :
BOOST THE CONFIDENCE
In March 2020 OECD interior economic outlooks l, the scenario saw global growth levse 1.5% June 2020 OECD economic outlook suggested an collapse in 1st half of 2020There is a clear need to keep trade following both ensure the supply of essential products and send a signal of confidence of economy

❖ Trade is essential to save the live and live hoods

❖ Must need action is to boost a confidence in trade and global by improving transparency

❖ A strong ,shared base in critical environment

❖ The countries honor is must needed at this time

KEEP GLOBAL SUPPLY CHAIN
During the pandemic by cancellations of passengers travel the getting huge amount of loss .but 2019 air freight cost are up by over 60% on some important .deliverey time - sensitive medical supplies, but also for some high value food trade Important shipping ports reported year on year 10% and 20% February .Over 50 countries have Changed port , protical , ranging from port closure and quarantine measure to additional documentation requirement and examination somecountries have also setup ' green leans' at ports of entry and border crossing to accelerate the processing of cargo shipmates. At the time of Covid ,lots of number of shipping containers where chains ports and restriction on their movement have led to a shortage that has seen the price of containrs rise .Lockdown are also impacting the availability of labor to unbord ships at ports or resid costs due to increased protective for works .Limits on mobility of people and lockdown are affecting a variety of trade process , forms physical inspection of goods for SPS totesting and contributed for TBT ,to changing how anti - dumping investigation are conducted

An immediate issue is facilitating medical supplies necessary to tackle Covid 19 many of whichare produced across the number of countries and for trade is means of ensuring global supply Keeping the trade in essential supplies following means removing barriers such as tariffs on medical goods essential for the combating corona

WHAT ARE THE THINGS TO BE AVOIDED
Especially, food products. Currently, more than 60 countries3 have restricted exports of essential goods and increasingly agriculture and food products.

The lesson of the food price crisis of 2007-08 is that export restrictions are a recipe for self- inflicted harm, undermining food security for everyone. Experience has shown that export restrictions temporarily lower domestic prices and raise availability, but they also discourage domestic production and so any benefit tends to be short-lived. Critically, by diverting suppliesfrom world markets, they put upward pressure on international prices, which harms other countries – in particular those most dependent on international markets for food. Export restrictions risk undermining confidence in international markets and can precipitate hoarding and panic buying, further accentuating problems in import-dependent countries. Ultimately, nobody benefits.

There is currently no supply problem in global agriculture and food markets; indeed, at present, stocks are strong and prices look set to stay low. However, if governments engage in export restrictions or if individuals, firms or countries engage in panic buying or hoarding there is a riskof creating an avoidable problem now.

While there is not an immediate threat to global supplies of basic foodstuffs, there is the potentialfor specific food supply chains to be severely disrupted, including from lack of seasonal workers for planting or harvesting key crops, logistics constraints, and additional SPS and technical measures. Vigilance will be required to ensure that crisis- or policy-induced risk factors do not cause disruptions in supply, in particular if the containment measures related to COVID-19 are long-lived.

THINK BEYOND THE SITUATION
While countries are necessarily focused on ensuring the health and economic security of their people today, the OECD can play a particularly important role in looking ahead and, in light of past and current experiences, contribute to helping governments ensure a recovery that is robust, widespread, and sustainable. Some key issues, and areas of OECD work, are highlighted below.

Support granted today will have an important impact on the global level playing field

How support is provided will also have important implications for the distribution of the gains from interconnected markets at the national level

While trade was one of the first victims of the global economic crisis in 2008, new trade restricting measures affected only about 1% of world imports. At that time, G20 leaders committed to refrain from protectionist measures and to uphold the rules-based trading system, and WTO trade rules created some certainty for businesses and stabilized the system by placing aceiling on tariff measures. While there are some differences, as well as similarities, in the current crisis the uncertain economic environment going into today's crisis increases the need for a commitment to rules-based trade

CONCLUSION

International marketing is the most exciting of all bussing .it is the heart beat of every successful trading business, it is continually changing response to explosion of information, the expression of technology & the aggressiveness of competition at all level and everywhere

Pandemic made humanity across countries. It reduced the tightness among the nation .trading and sharing medicine ,oxygen and food resources between countries by forgetting feud which shown humanity apart retaliatory action

And especially NRI who responded to government fund raising announcement made Goosebumps among the world

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WASTE MANAGEMENT PRACTICES IN DENTAL HEALTHCARE INSTITUTION

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ABSTRACT

Background: Dental care waste includes all waste generated from dental healthcare institutions, clinics, and laboratories related to medical practices.The dental wastes are the wastes being generated from clinical practice while or during treating the dental patients. Managing or disposing these dental waste in a sequential manner so that the dental office is non-infectious is called as dental waste management.For discarding or disposing these dental waste- adequate attitudes, awareness & practices will be leading towards diminishing the risks from disease spread from hospitals & dental clinics to the society.

Objectives: The objectives of this study are to assess the awareness and knowledge of dental care waste management among the private and public dental health care institution.

Methods: Cross sectional study was conducted in 50 dental health care professionals using random sampling through a structure questionnaire.A random sampling technique was utilized to select dental institution & dental professional along with the other accessory staffs from those selected institutions.

Results:The study found there is a practice protocol written document for dental waste management. Most of the waste confines to the municipal waste and also there is requirement for educating the professional regarding waste management. The gross practices of the participants were moderate. Only very few were knew about legislation of waste management while maximum were aware about the part of dental waste in transmitting disease.

Conclusion: Majority of the professional are aware of the type of waste but they don't follow the implementation practice.From this study most of the institutions did not dispose the dental waste upto the standard level. The management of the waste laws requires seasonal training and continuous monitoring . Thus a specific procedure should be followed for the dental waste management , as compared to other countries those are developed.

Keywords: Waste management, Knowledge, Awareness , Municipal waste ,Dental waste.

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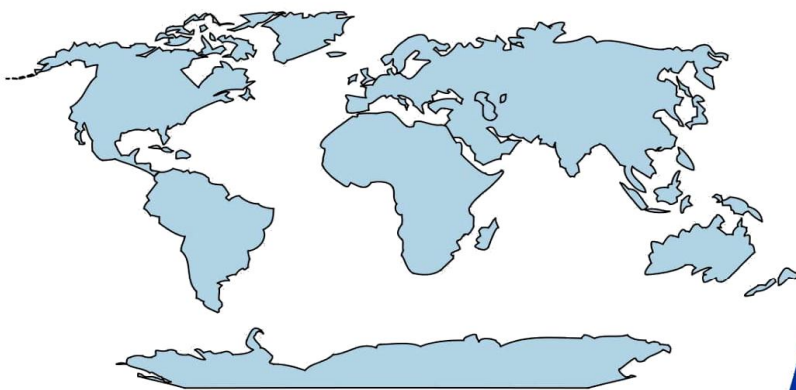
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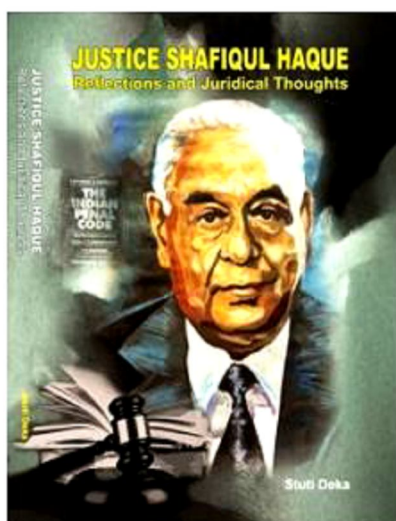
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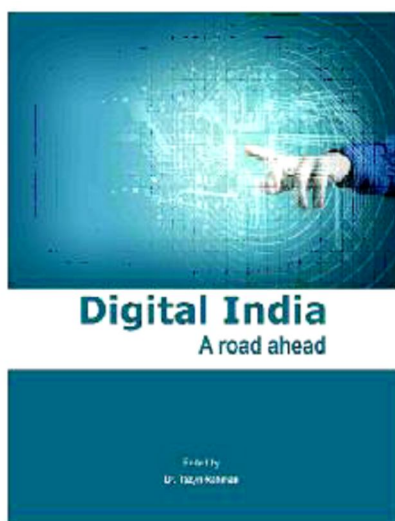
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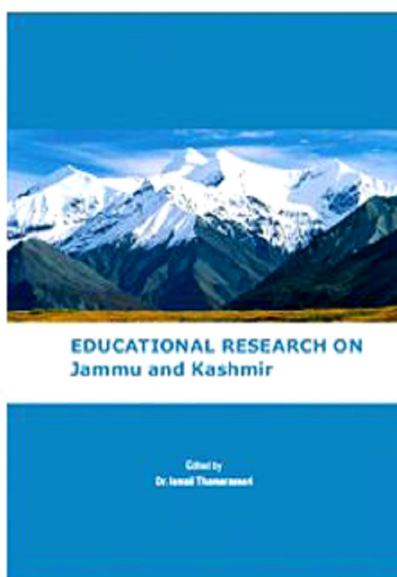
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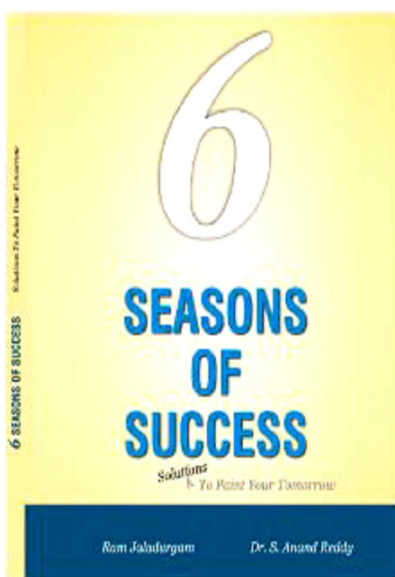
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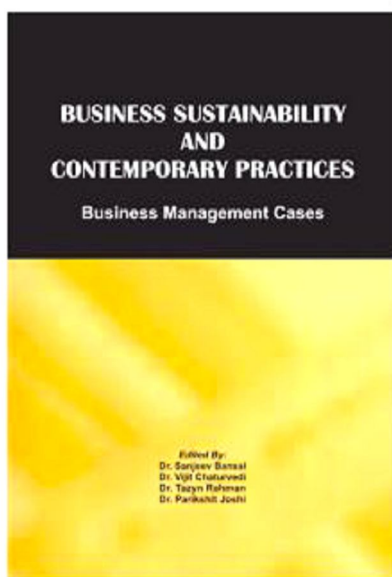
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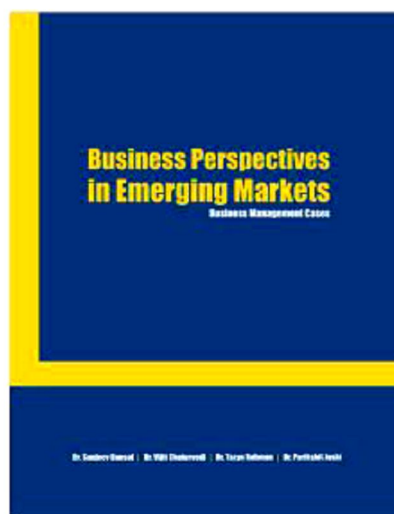
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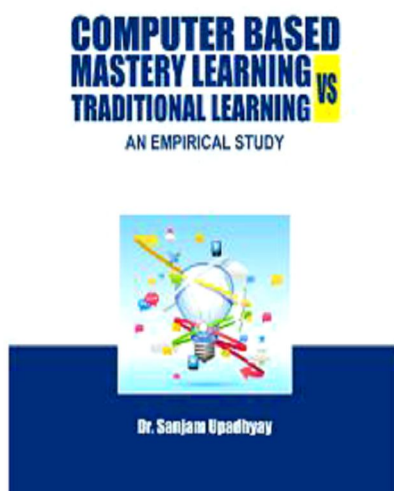
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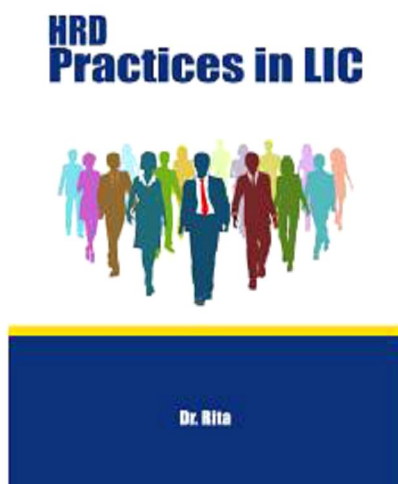
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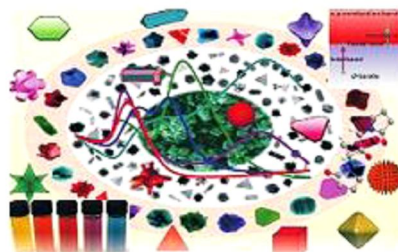
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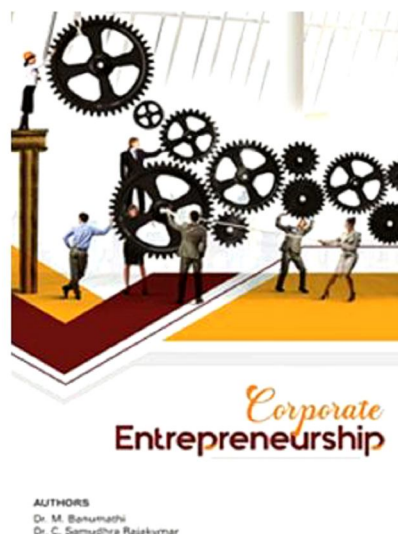
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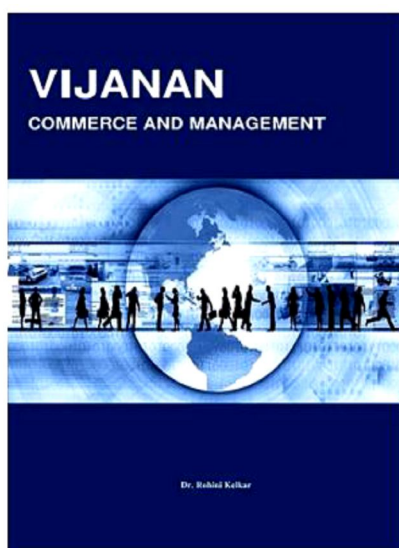
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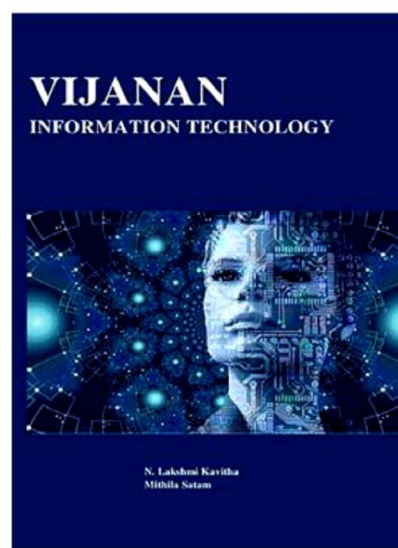
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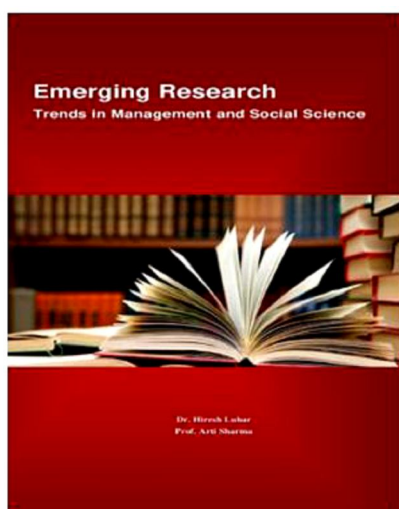
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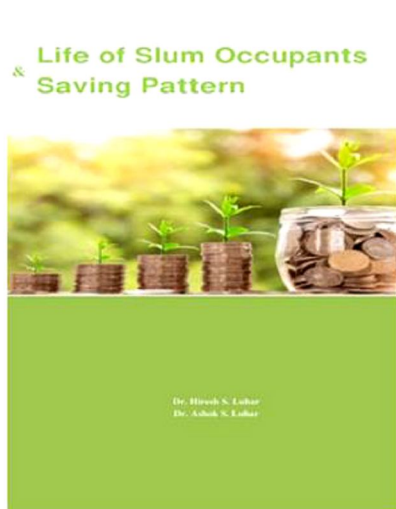
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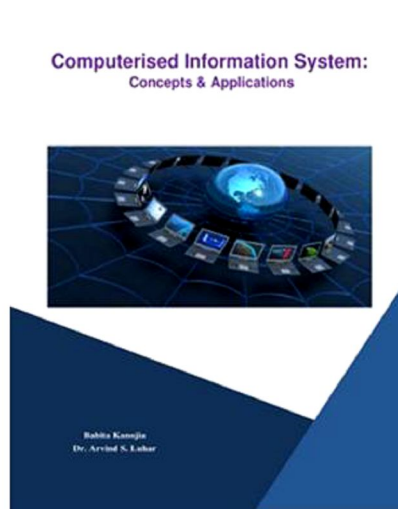
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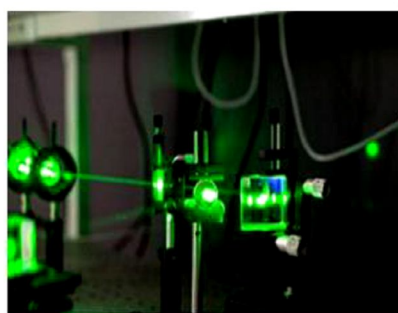
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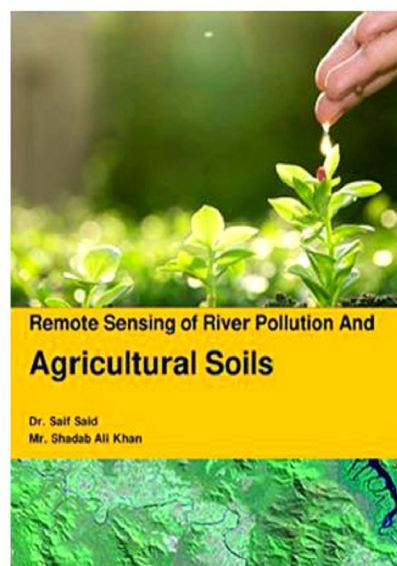
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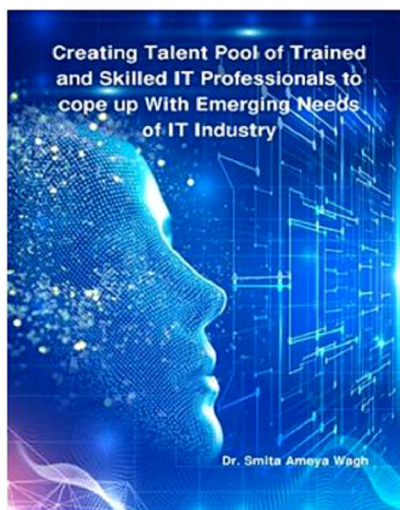
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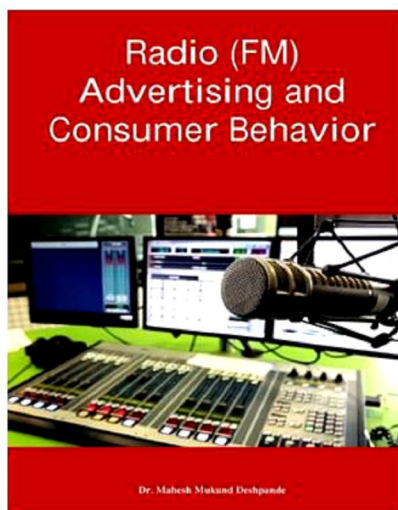
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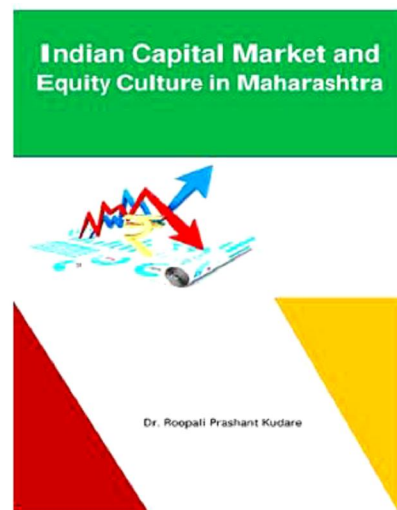
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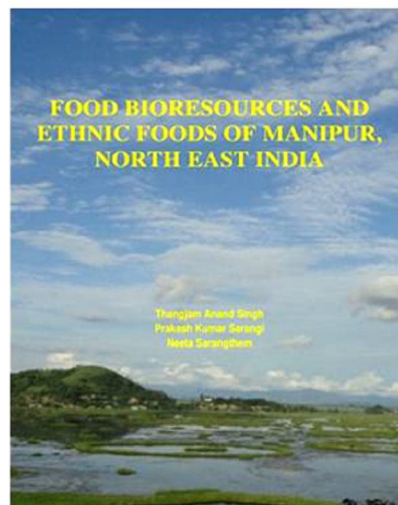
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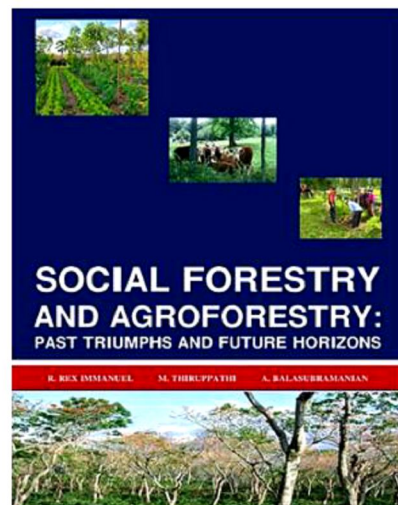
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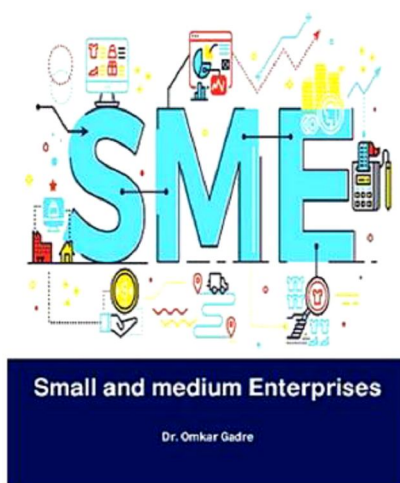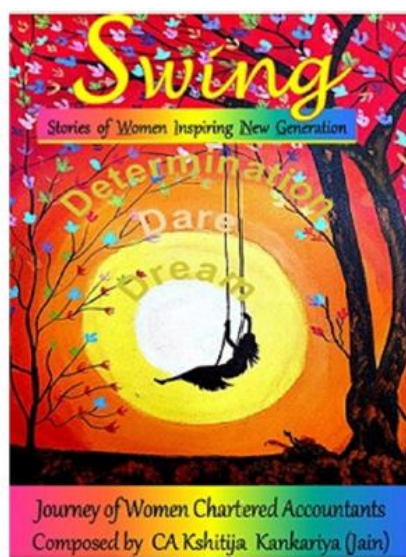

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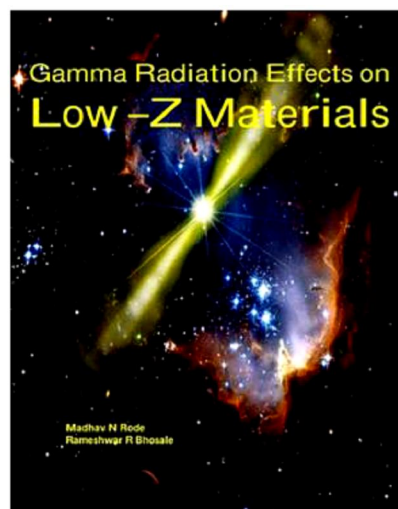
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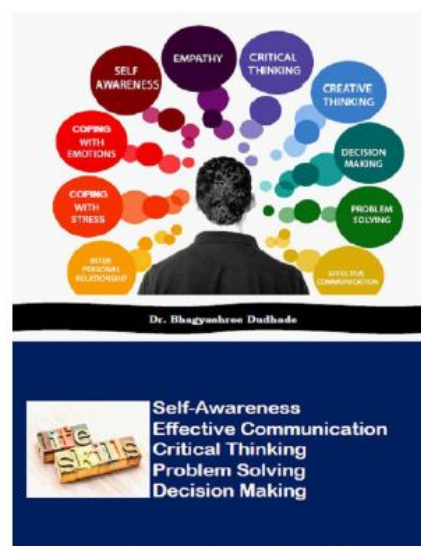Rameshwar R. Bhosale
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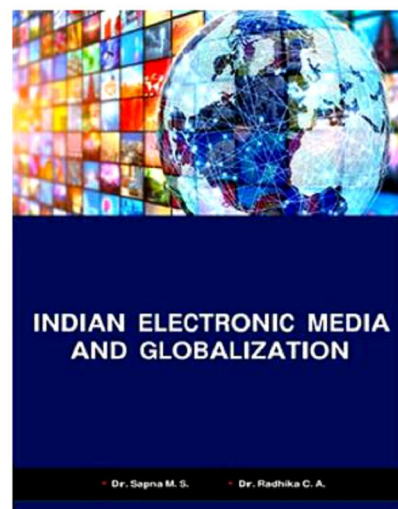
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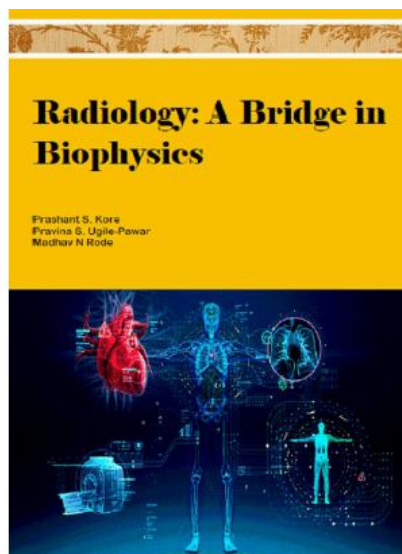Hindusthan College
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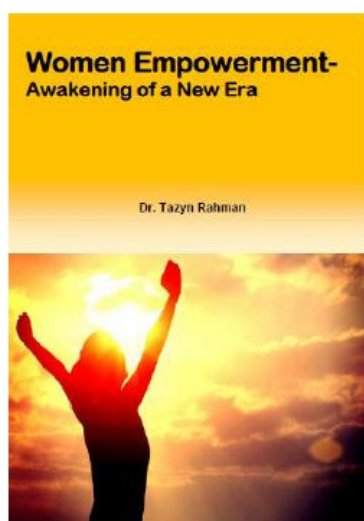Pratibha College
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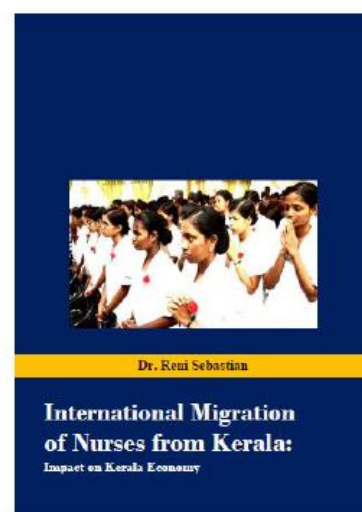
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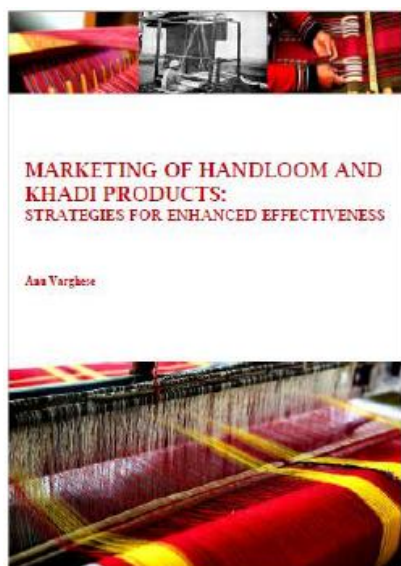Dr. Reni Sebastian
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