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VISIONARY

Late Sh. Rakesh Aggarwal ji
(22nd Sept. 1953 - 10th Jan 2012)

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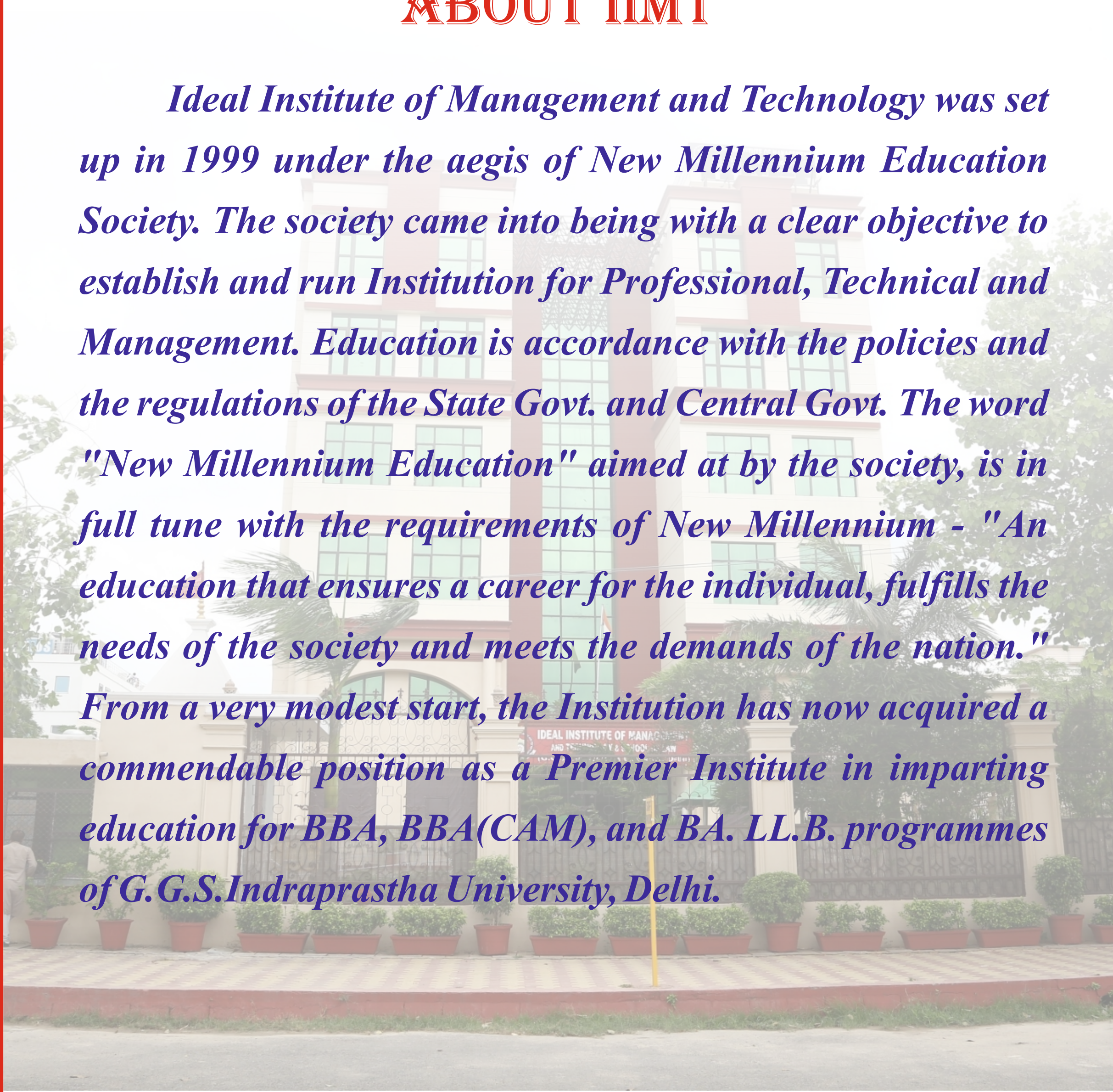

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IDEAL JOURNAL OF MANAGEMENT & IT

Message from Secretary General

"HANDSOME IS THAT HANDSOME DOES"

Dear Readers,

One needs to be focused if he wishes to achieve even a small thing in life. For this a positive attitude must be there within. Your mind must follow only positive thoughts along with full dedication, devotion, hard work of enthusiasm. There must be a gesture of magnanimity to learn, to make people understand about the things. In fact, you need to unlearn all what you have learnt in your past, if you wish to learn something new in your interest area. Only a true leader can be like this.

I whole heartedly congratulate the proud Editorial Team & the researchers for the outcome as a Journal Volume XI.

With Best Wishes.

Vineet Aggarwal
Secretary General

Message from Editor –in – Chief

"IF YOU WANT TO GROW YOUR MANAGERIAL SKILLS, THEN YOU MUST GROW YOUR INNERSELF FIRST"

Dear Readers,

Management is the oxygen for all the related activities of the manager and other working hands in the organization, and composed with the mind full of research activities makes it supplementary.

Research is a mountainous task of putting all the hard labour and factual information together at one place for the benefit of the self society and the whole cosmos at large.

The scope of research really provides an excellent opportunity to deal with laborious facts of life to proceed ahead to achieve target.

Success comes to those who really think of success, while sleeping, dreaming or in a turbulent state.

For achieving success one has to work honestly, sincerely and truthfully.

The 11th volume of Ideal Journal of Management & IT is being published by the hard working editorial board, is a matter of great pleasure.

I wish the team all the success.

My Best compliments to one and all.

In the service of the nation.

Prof. (Dr.) Anil Parkash Sharma
Director cum Editor-in-Chief

From the Editor's Desk

Management is about arranging and telling. Leadership is about nurturing and enhancing.

Tom Peters

Dear Readers,

With 2020, Ideal Journal of Management and IT has completed its Eleventh edition of publication and has established itself as one of the leading journal. On behalf of IJM team, we would like to extend a very warm welcome to the readership of IJM.

Our goal is to create a new forum for exchange of information in every field of research. Our consistent efforts are aimed towards providing the forum for critical issues in every field, latest developments in basis research, regulatory issues, original research and quality of our journal .We hope Ideal Journal of Management and technology will become the forum for researchers to share their valuable research achievements, practical experiences and discuss all perspectives of management and IT in the development of future innovations that will greatly benefit all Academicians ,Research Scholars and Students also.

We hope our readers and patrons share a similar vision and we look forward to a prolific, perfect and a successful year ahead. The success of this journal depends on your feedback for further improvements.

We request our readers to send their critique and valuable feedback for further improvements of our upcoming journal.

With Best Wishes and Season’s Greetings,

Jasmandeep kaur

Seema

Ms. Jasmandeep Kaur
Editor (Management)

Mr. Mahesh Sharma
Editor (IT)

Ms. Seema Nath Jain
Managing Editor

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A STUDY ON STRESS MANAGEMENT AND ITS TECHNIQUES

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ABSTRACT

Stress is an unavoidable consequence of modern life and holds a place in every one's life. In this competitive world we thrive on performance and perfection which leads to insidious increase in stress. Stress is able to create bodily or mental indications and can be engendered by pressure creating problem in working environment and life style of individual. Stress has become an increasing phenomenon due to various factors such as technology advancement, and changing economic conditions. Researchers have driven out various parameters resulting in creating stress among the individual and various techniques to minimize the stress. Stress can be positive and negative depending on the situation when it appears.

This paper is an attempt to give a glimpse of various factors responsible for the stress and to find out suitable techniques to reduce the stress. Paper is descriptive and is based on secondary data collected from various online sources. It is very important to understand the various factors responsible for certain phenomenon and angles related to it. This study considered various factors to find out the sources of stress. This paper will help to find out the importance of stress management in modern life.

Keywords: *Stress, Individual, Techniques*

1. INTRODUCTION

Stress means, an imbalance. Stress occurs due to disparity between situational demand and individual's ability and opportunity to attain goal and act as a motivator for effective performance, whereas it acts as a negative force when a person faces social, physical, organizational and emotional problems. In today's World, one cannot imagine life without stress on both the side that is for employees and as well as the employer.

2. LITERATURE REVIEW

Observing the corporate culture and present lifestyles, various queries and arguments have been cropped up in the mind of researchers. It is very important to understand the factors responsible for a certain phenomenon and various angles related to it. The present study is aiming to represent the glimpse of the research work so far has been done in the field of stress, its techniques, factors related to it and the ways to manage it. Stress in the workplace has become of universal concern to all managers and administrators where in some work groups, stress has become epidemic. In the United States, health care professionals, technicians, managers of all sorts, military officers, corporate executives, sports coaches, entertainers, farmers, recreational directors and members of the clergy have been identified as being most prone to workplace stress. By comparison, in Japan, health care providers, production factory workers, VCT workers, salesmen, middle managers of enterprises, and educators at all levels have been identified as being most likely to encounter workplace stress. However there are differences between Japan and the United States, in regards to work related stress, likely is due to the cultural differences that exist within the work environments.

What workers in one country perceive as stressful, workers in the other country may not perceive as stressful. In addition, the role expectations in the respective work settings are likely to differ between the two countries. Unfortunately, limited research and publications existence that compare work stress across cultures within the work environment (Lambert and Lambert, 2001).

If stress is high the job satisfaction will be less. Ahmed(2013) has done a study on effect of job stress on employees job performance a study on banking sector of Pakistan and his objective in the study was to examine the relationship between job stress and job performance on bank employees of banking sector in Pakistan. With the help of Pearson correlation methodology he identified if stress is low then performance of the employee increases.

Ponnampalam (2013) has done a study on the effect of stress on performance of employees in commercial bank of Ceylon in the eastern province. In his study the objective was to understand the level and relationship between stress and performance of commercial bank employees in the eastern province of Srilanka by using the correlation analysis and regression analysis methodology he identified women suffer more stress than man.

A.shirmilla (2012) has done a study on employees stress management in selected private banks in Salem. In his study the objective was to identify different methods and technique to reduce job related stress .With the help of percentage analysis methodology, he identified that excess work pressure is the main cause of stress in banks.

3. TYPES OF STRESS

The APA recognizes three different types of stress that require different levels of management.

- **Acute stress:** Acute stress is often caused by thinking about the pressures of events that

have recently occurred, or upcoming demands in the near future. It is of short time period but it’s the most common type of stress. Short-term effects include tension headaches and an upset stomach, as well as a moderate amount of distress

For example, if you have recently been involved in an argument that has made you upset or have an upcoming deadline, you may feel stress about these triggers. However, the stress will be reduced or removed once these are resolved. It does not cause the same amount of damage as long-term, chronic stress.

- **Episodic acute stress:** People who frequently experience acute stress, or whose lives

present frequent triggers of stress, have episodic acute stress. A person with too many commitments and poor organization can find themselves displaying episodic stress symptoms. These include a tendency to be irritable and tense, and this irritability can affect relationships. Individuals that worry too much on a constant basis can also find themselves facing this type of stress. This type of stress can also lead to high blood pressure and heart disease.

- **Chronic stress:** It is the most harmful type of stress and grinds away over a long period.

Ongoing poverty, a dysfunctional family, or an unhappy marriage can cause chronic stress. It occurs when a person never sees an escape from the cause of stress and stops seeking solutions. Sometimes, it can be caused by a traumatic experience early in life.

Everyone encounters stressful situations on an almost daily basis, from minor pressures that we hardly notice, to occasional traumatic situations which can cause ongoing stress. Many of us do not realize that some forms of stress, known as eustress, can have a positive effect on our performance, and instead refer to those experiences which cause us negative distress as stressful.

4. STRESS MECHANISM

The degree of stress experienced depends on the functioning of two protective physiological mechanisms:

Situations that are likely to cause stress are those that are uncontrollable, uncertain, ambiguous or unfamiliar, or involving conflict, loss or performance expectations. Stress may be caused by time limited events, such as the pressures of examinations or work deadlines, or by ongoing situations, such as family demands, job insecurity, or long commuting journeys. Resources that help meet the pressures and demands faced at work include personal characteristics such as coping skills (for example, problem solving, assertiveness, time management) and the work situation such as a good working environment and social support. These resources can be increased by investment in work infrastructure, training, good management and employment practices, and the way that work is organised. When confronted with a threat to our safety, our first response is physiological arousal: our muscles tense and breathing and heart rate become more rapid. This serves us well when the threat is the proverbial bull in the field rushing towards us. We either fight or flee. Present day threats tend to be more psychological—for example, unjustified verbal attack by a superior at work. It is usually not socially acceptable to act by “fight or flight”, and an alternative means of expressing the resultant emotional and physical energy is required. This falls in the arena of assertive communication. “Adaptation”. The second adaptive mechanism allows us to cease responding when we learn that stimuli in the environment are no longer a threat to our safety. For example, when we first spend time in a house near a railway line, our response to trains hurtling past is to be startled, as described above. Over time, our response dwindles. If this process did not function, we would eventually collapse from physical wear and tear, and mental exhaustion.

5. FACTORS OF STRESS

The factors stated below affect an employee at the workplace:

- Job role: - this exists when the employee is confused as to what task he/she should be doing or when the employee has overwhelming amount of work to be done with so little time. Stress could also arise as a result of ambiguity. This situation is likely to happen at any type of occupation.
- Underutilization: - This means that the worker has insufficient work to encourage his/her motivation.
- Responsibility for others:- This increases stress level, if employees face high responsibility for others. Those who are in charge of others at the workplace and people higher up the organizational hierarchy are often prone to more stress because of expectations from their co-workers.
- Poor working conditions: - These conditions are also major contributors to stress, these include extreme heat, cold, noise and overcrowded.

Employees experience and feel stressed due to a set of various reasons and therefore the reactions of stress at the workplace are not a separate aspect. (Fairbrother, & Warn, 2003 p. 8) Increasingly, the stress level is changing rapidly among the employees due to a set of various reasons such as work overload, over crowdedness at the workplace, generating of loud noises by machines and arousal of conflicts among the employees and the employer due to poor or inadequate decisions.

Stress can arise because of transitions made in our personal lives. Personal issues that contribute to stress are those such as domestic problems in the house like losing loved ones, financial problems and divorce. These could be categorized as individual causes that lead to stress. On the other hand there is also stress that is caused by organizational factors these factors are those faced by the employees at the workplace. Issues such as role uncertainty; that is not being able to know exactly what we are supposed to do and what others expect from us and also having too much work at hand with little time to accomplish it can cause stress at the work place. Further organizational factors of stress are poor working conditions where the employee is often too distracted, where there is noise, chilly or too warm temperatures and where the workplace is often filled with people running here and there. Whereas Issues that contribute to stress are lack of control, suddenness, and ambiguity; especially role ambiguity is the foremost reason of stress at work. (Parker, 1975, p.350)

Some organizational factors that can be considered as stressors mostly depend on the types of job and specification of works. These play important role regarding the issues related to stress, for instance if the job is high-stress or not. High stress jobs are the kind of jobs that require plenty of time and put the employees under the pressure of work. It is also notable that often the employees suffer from poor working situation, if the work is performed in an unpleasant environment (Bloisi et al., 2007, p. 317).

In order to study in-depth the main reasons of stress or why the employees feel stressed specifically at the workplace and in Volvo Trucks AB, Umeå, we have described some main factors in the next section that often initiates stress.

6. WORKPLACE FACTORS CAUSING STRESS

Scholars have described that a large number of features of occupational life is connected to stress. The employees who experience the reaction of stress at the workplace are not a new aspect. Spark & Cooper (1999) stated their study by conducting a sample study of 7,099 employees from 13 different companies and occupations. They reported a significant statistical assembly between workplace factor and negative symptoms of health or disorder of mental situation such as, anxiety, depression and irritation.

Employees usually feel stress at their jobs due to the following reasons.

1. Work overload
2. Misuse of power
3. Inadequate decisions or leader behaviour
4. overcrowd, noise

Work and workplace is itself a stressful phenomenon and therefore various aspects are connected to stress (Defrank & Ivancevich, 1998; Spark & Cooper, 1999; Taylor et al., 1997). According to Burke (1988), Nilsson & Burke (2000) the factors related to roles in a work environment are namely existence of low level power, role indefiniteness or role dispute. They add that increasing in physical conditions at the workplace such as concurrent permanent noise, overcrowd and lack of secrecy are associated to stress. The behavior of the leader or chief can also affect the level of stress (Fairbrother, & Warn, 2003 p. 9)

7. EXTERNAL FACTORS OF STRESS

We have discussed the causes of stress from an individual perspective as well as in the workplace. Here we focus to external factors of stress both on employees and organizations. Employees will be affected directly with external factors of stress but companies are often affected indirectly.

According to the study made by Kirkcaldy & Martin (2000) stated employees experience stress due to various reasons. Mainly stress has been associated with important issues namely environmental and economical aspects. The environmental factors are included of organizational climate as well as occupational consequences of job contentment, organizational loyalty and behavioral aspects of employees. For example, remarkable occupational environment of doctors and nurses in hospitals dealing with wound, death and dying in regular basis. External factors beyond the control of both the employees and the organizations are based on political factors and economical factors. Economic uncertainties such as redundancy and downsizings are some of the economic consequences for a firm which affects the employees. Changes in political situation or economic disability are out of employees' control therefore the idea of redundancy and downsizing affects employees in some way. (Bloisi et al, 2007).

Advancement in technology is also another external factor that has contributed to productivity to a large extent. It caused a remarkable decline of demand for labor in the market which led to affect the employee's job security. Though it is important to familiarize one 's self to new technologies, it can be considered stressful if perceived as unachievable or difficult to learn. Technological changes like computerized systems, new softwares can cause stress among workers. Besides technological changes, Politics is also an external factor of stress. In cases where there is major change in government policies or mistrust of employees to government would make the environment more stressful. (Bloisi et al, 2007,)

8. STRESS IN A SPECIFIC JOB CONTEXT

Royal Australian Navy conducted an internal personnel survey related to what causes stress on a seagoing ship. (Royal Australian Navy 1996).It defined that employees suffer from stress due to the following various reasons. The survey shows that 35% of the staff working on ships and 25, 9% of officer working on regular basis are stressed with their job. They have reported a few reasons related to their stressful occupation like restricted situation of working environment and living condition on a sea. Respondents indicated their salient aspects related to their stressful work, workplace and working environment, as an uncomfortable and restricted condition due to working in an isolated society. Naval officers on the other hand are under pressure due to constraint and rigid schedule which shorten their access to regular personal routine, even disturb the sleeping time. Gilks & Buckley (1995) stated generically, 50% of officers shorten their personal duties in order to obtain time for the broken sleep. 20

This study specifies the possible cause of stress in personal life, at the workplace and also the external factors that are beyond the control of the employee and the organization. So now we can go on and see what possible effects, consequences and disadvantages that stress can have on employees and the organization as well.

We spend the 80% of our waking hours at the workplace so a workplace is the major cause of stress. A survey published by the American Psychological Association in 2012 found that as many as 70% of Americans reported suffering from workplace stress.

- Professional strain can take its toll on the individual concerned, but can also cost employers dearly, with 13.5 million sick days estimated to have been linked to stress between 2007 and 2008 in the UK alone.
- Separating work-related tasks from leisure and family time, such as resisting the urge to catch up with emails in an evening, can help prevent workplace stress from spilling into other areas of your life.
- Personal Appearance: Do you worry about spots, wrinkles, weight or balding? If you do, you are in good company. Concerns over our personal appearance can have an exaggerated effect on people's confidence and their self image.
- Social: The pressure to conform and be seen to succeed in everyday life can encourage stress, and the aspiration towards ideals and success nurtured in the media can be unrealistic and unhelpful. Ideas of a desirable body image, for example, have been linked to both negative self images and eating disorders.

9. EVIDENCE-BASED STRESS MANAGEMENT TECHNIQUES

- **Progressive Muscle Relaxation (PMR):** Progressive muscle relaxation (PMR) is a technique for reducing stress and anxiety by alternately tensing and relaxing the muscles. It was developed by American physician Edmund Jacobson in the early 1920s. Jacobson argued that since muscle tension accompanies anxiety, one can reduce anxiety by learning how to relax the muscular tension. PMR entails a physical and mental component.

The physical component involves the tensing and relaxing of muscle groups over the legs, abdomen, chest, arms and face. In a sequential pattern, with eyes closed, the individual places a tension in a given muscle group purposefully for approximately 10 seconds and then releases it for 20 seconds before continuing with the next muscle group. The mental component requires that the individual focuses on the distinction between the feelings of the tension and relaxation. With practice, the patient learns how to effectively relax in a short period of time.

Relaxation must be attempted in order to reduce pain or pain perception and tension, create a pleasant mental state, reduce anticipatory anxiety, reduce anxiety as a response to stress, increase parasympathetic activities, increase knowledge concerning muscle tension and autonomous stimuli, improve concentration, increase the feeling of control, improve the ability to block inner talk, energize and improve sleep, decrease the cardiac index, lower blood pressure, warm or cool body parts, enhance performance of physical activities and help in the relationship with others . Therefore, the individual is taught by a trained professional, manual or audio how to progressively relax major muscle groups and performs the sequence 2-3 times daily for 15-20 minutes per session.

- **Autogenic Training (AT):** Autogenic training (AT) is a self-relaxation procedure by which a psychophysiological determined relaxation response is elicited. This relaxation technique was developed by Johannes Heinrich Schultz. AT aims to achieve deep relaxation and reduce stress.

In AT the individual learns a set of directions/exercises that command the body to relax and control breathing, blood pressure, heartbeat, and body temperature. AT consists of six standard exercises that -with the use visual imagination and verbal cues- make the body feel warm, heavy, and relaxed. The person learns each exercise by reading about it or watching a teacher, then practicing it for a few minutes several times a day. Mastering the exercises, either from an instructor or on one's own, usually requires 4 to 6 months.

Results/Benefits: A meta-analysis of clinical outcome studies in AT found that it is useful in a range of diverse disorders including tension headache/migraine, mild-to-moderate essential hypertension, coronary heart disease, asthma bronchiale, somatoform pain disorder (unspecified type), Raynaud's disease, anxiety disorders, mild-to-moderate depression/dysthymia, and functional sleep disorders .

- **Relaxation Response (RR):** In the 1960's, Herbert Benson of Harvard University found that there is a counterbalancing mechanism to the stress response: just as stimulating an area of the hypothalamus can cause the stress response, so activating other areas of the brain results in its reduction. He defined this opposite state the "relaxation response. RR is a simple practice that once learned takes 10 to 20 minutes a day to achieve relaxation. The important characteristics of a relaxation program are: α) repetition of a word, sound, prayer, thought, phrase or muscular movement, through which concentration is achieved β) passive return to the repetition when other thoughts intrude.

When an organism is stressed its physiological response is the fight-or-flight response, whereas when the body is no longer in perceived danger, and the autonomic nervous system functioning returns to normal, the relaxation response (RR) occurs. During RR, the body moves from a state of physiological arousal, including increased heart rate and blood pressure, slowed digestive functioning, decreased blood flow to the extremities, increased release of stress hormones, and other responses preparing the body to fight or flight, to a state of physiological relaxation, where blood pressure, heart rate, digestive functioning and hormonal levels return to their normal state.

Results/Benefits: The RR can reduce systolic hypertension , improve cardiac rehabilitation and relieve medical symptoms .

There is compelling evidence that the RR elicits specific gene expression changes in people who practice either short-term or long-term. The study results suggest consistent and constitutive changes in gene expression resulting from RR. These changes may relate to long term physiological effects.

Biofeedback

Biofeedback training is done in the presence of qualified biofeedback therapists. The therapists work with their patients and explain to them the process of reading and then responding to the physiological information relating to their body using various biofeedback devices. When patients understand and practice this concept, after several sessions spanned in 3-6 months, they are then able to take control of their physiological functions like heart beat rate, blood pressure, etc. They can also learn to observe the changes that happen when they apply the learning from the training. Sensor modalities include: the electromyograph, feedback thermometer, electrodermograph, electroencephalograph, electrocardiograph, pneumograph, capnometer, and the hemoencephalographyv .

Guided Imagery (GI)

GI is not a new approach to helping, but is well established in Native American and other indigenous traditions, in Hinduism, Judeo-Christian, and other religious traditions as well as traditional Chinese medicine . In the late 1960s, Joseph Wolpe introduced several imagery-related techniques in behaviour-modification therapy: systematic desensitization, aversive-imagery methods, symbolic-modelling techniques and implosive therapy. Since that time there have been many advocates of guided imagery . In 1982, Drs. Bresler and Rossman presented their initial findings at a conference sponsored by Marquette University and the University of San Francisco called The Power of Imagination. During this conference, leading clinicians and researchers introduced more than 1,400 health professionals nationwide to the practical applications of imagery work .

Method/Pathophysiology: The GI method is taught by a trained professional, an audio or written script in the course of 4-8 weeks, requiring 10 minutes practice per day. GI utilizes the subject‘s personalized images to promote health through several standardized, yet adaptable, techniques, including relaxation/stress reduction. The GI facilitator‘s goal is to enable the subject to engage his/her own images that are symbolic of his/her specific health or life issues, in order to develop health-directed insights, health-promoting behaviour changes, or direct physiologic changes. A facilitated exploration of an image of a safe, comfortable place specific to the participant is involved including sensory recruitment (visual, auditory, olfactory, tactile, and kinesthetic), particularly focusing on linking elements of relaxation in the image to the physiologically relaxed state simultaneously being experienced by the subject.

Transcendental Meditation ™

History: The TM technique, a simple, psychophysiological stress reduction procedure, was introduced to the West by Maharishi Mahesh Yogi, a scholar of the ancient Vedic tradition of India .

Method/Pathophysiology: The TM technique is simple and easily learned, requiring to be practiced for 20 minutes twice daily while sitting with eyes closed and repeating a ‗mantra‘, a meaningless sequence of sounds specific to each individual, to promote a natural shift of awareness to a wakeful but deeply restful state . TM is not a religion or philosophy and is taught through a seven-step course of instruction by a certified TM teacher. During the TM practice, a reduction in mental and physical activity occurs and that is the result of the individual‘s experience of a mental state called ―transcendental consciousness,‖ which is different from usual waking, dreaming, or sleep states. This experience is deemed responsible for the restoration of normal function of various bodily systems, especially those involved in adapting to environmental ―stressors‖ or challenges . TM increases frontal and alpha central activity and neuroimaging studies indicate increased regional cerebral blood flow measures during meditation .

Studies show that regular practice of TM has an impact on the brain‘s electrophysiologic characteristics, improving brain functioning and attention . During TM practice there is improved cortical coherence between and within hemispheres . Regular practice of TM leads to reduced medical care utilization and expenditures . Additionally, research data shows that TM helps patients become more resilient under stressful situation, reducing the more concrete pathophysiologic signs or symptoms of cardiovascular disease.

Cognitive Behavioral Therapy (CBT) Origins:

Cognitive behaviour therapy (CBT) was developed through a merging of behaviour therapy with cognitive therapy and though rooted in different theories, these two traditions share a common focusing on the present time and on alleviating symptoms .

CBT is an established; evidence based structured and time-limited psychological treatment for several health conditions such as anxiety disorders, major depression, and health problems such as insomnia, headache, and tinnitus among others. Briefly, CBT is a treatment approach that encompasses assessment strategies, cognitive and behavioural treatment techniques, and relies on collaboration between clinician and patient, who has the responsibility to complete homework assignments . Cognitive change and the resulting behavioural change relate to cognitive restructuring, which proposes that people are directly responsible for generating dysfunctional emotions and their resultant behaviours, like stress, depression, anxiety, something that can be prevented by changing thought patterns. Cognitive restructuring is the process of learning to refute cognitive distortions, aiming to replace one's irrational, counter-factual beliefs with more accurate and beneficial ones. This is established by helping the individual gain awareness of detrimental thought habits, learn to challenge them and substitute life-enhancing thoughts and beliefs.

Emotional Freedom Technique (EFT)

EFT, introduced by Gary Craig in the 90‘s, a brief exposure therapy that combines a cognitive and a somatic element, is based on the discovery that emotional trauma contributes greatly to disease. Scientific studies have shown that EFT is able to rapidly reduce the emotional impact of memories and incidents that trigger emotional distress. Once the distress is reduced or removed, the body can often rebalance itself, and accelerate healing .

Method/Pathophysiology: EFT works by a person tapping on nine of acupoints, while speaking aloud a specific, meaningful short phrase. A key part of the therapy is calibrating the intensity of either physical or emotional pain, which allows both therapist and patient a tangible scale by which to measure progress in pain or emotional distress reduction . According to the literature, imaginal exposure, paired with acupressure, reduces midbrain hyperarousal and counterconditions anxiety and traumatic memories. Exposure therapies like EFT first elicit the midbrain's anxiety reflex and then replace it with a relaxation response, in order to ―reciprocally inhibit‖ anxiety . It is also indicated that manual stimulation of acupuncture points produces opioids, serotonin, and gamma-aminobutyric acid (GABA), and regulates cortisol, the stress hormone . These neurochemical changes lead to reduction of pain, slowing of the heart rate, decreased anxiety, shuting off the fight of flight response, and regulation of the autonomic nervous system, as well as to the creation of a sense of calm .

Results/Benefits: EFT leads to reduced pain perception, increased acceptance, coping ability and health-related quality of life in individuals with fibromyalgia has an immediate effect on specific phobias on anxiety and depression , on psychological trauma and PTSD as well as in the trauma following coronary heart disease .

10. STRESS MECHANISM

The degree of stress experienced depends on the functioning of two protective physiological mechanisms:

Situations that are likely to cause stress are those that are uncontrollable, uncertain, ambiguous or unfamiliar, or involving conflict, loss or performance expectations. Stress may be caused by time limited events, such as the pressures of examinations or work deadlines, or by ongoing situations, such as family demands, job insecurity, or long commuting journeys.

Resources that help meet the pressures and demands faced at work include personal characteristics such as coping skills (for example, problem solving, assertiveness, time management) and the work situation such as a good working environment and social support. These resources can be increased by investment in work infrastructure, training, good management and employment practices, and the way that work is organised. When confronted with a threat to our safety, our first response is physiological arousal: our muscles tense and breathing and heart rate become more rapid. This serves us well when the threat is the proverbial bull in the field rushing towards us. We either fight or flee. Present day threats tend to be more psychological—for example, unjustified verbal attack by a superior at work. It is usually not socially acceptable to act by "fight or flight", and an alternative means of expressing the resultant emotional and physical energy is required. This falls in the arena of assertive communication. "Adaptation". The second adaptive mechanism allows us to cease responding when we learn that stimuli in the environment are no longer a threat to our safety. For example, when we first spend time in a house near a railway line, our response to trains hurtling past is to be startled, as described above. Over time, our response dwindles. If this process did not function, we would eventually collapse from physical wear and tear, and mental exhaustion.

These techniques of stress management has their own limitations and benefit but benefits are more far weighing than there limitations. These techniques requires experts help to use and implement the techniques.

11. CONCLUSION

This study is an attempt to know about various factors responsible for causing the stress. As the above study shows that work place is major cause of stress in today's world. As people spend 80%of there waking day at their job .So the job culture should provide the stress free envoirnment.The evidence based techniques discussed in the paper can be used in organization.beacause every technique has its scientific implication.

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Disaster Management in India-Paradigm Shift in Contemporary Environment

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ABSTRACT

India is one of the hazard prone countries in South Asia. Floods, droughts, landslides, snowstorms, hurricanes and cyclones occur regularly. Among these earthquakes, floods and drought risk are extremely high. These hazards threaten millions of lives and cause large scale financial, infrastructure, agriculture and productivity losses that seriously hinder India's overall development. In India, as in the United States, the primary responsibility for responding to disaster lies at the state and the central level. The GOI have a national emergency plan for disaster management, some of the state also has a disaster management plan. It can be, and is called upon to assist when necessary, but there is a lack of awareness in the public. Many Indian States have limited resources and lack their own disaster management plans. Considering these problems, this paper attempts to throw light on a more integrated and responsive disaster management system in India. This paper will provide important information in three mutually reinforcing areas viz. disaster preparedness, response and rehabilitation management. The various case studies for disaster management will be discussed.

Keywords: disaster, mitigation, hazards, risk, safety management, India, Surat.

INTRODUCTION

India is one of the most disasters prone countries of the world, almost 80% of India's geographical area is considered at risk to one or more type of natural disaster. Every year between 2000 to 2009, 65 million people on average in India were affected by disaster, of these; 3.25 million were pregnant and lactating mothers. Every year, 8.45 million children under 5 years of age are affected by disasters; of these, 1.25 million were malnourished (UNICEF).

Floods and droughts significantly impact the majority of India though they are most prevalent in the northwestern and eastern regions respectively. Geophysical hazards affect the Himalayan region in the north and northeastern portion of the country where they rank in high deciles for mortality and lower deciles for GDP impact. Cyclones influence a relatively small area

of the country but have high-ranking mortality. This multi-hazard mortality of entire country is significantly impacted by at least one hazard and mortality impacts are particularly concentrated in the north and northeastern regions.

India has also become much more vulnerable to tsunamis since the 2004 Indian Ocean tsunami.

Almost 57% of the land is vulnerable to earthquake (high seismic zones III–V), 68% to drought, 8% to cyclones and 12% to floods.

Significantly impacted by at least one hazard and mortality impacts are particularly concentrated in the north and northeastern regions.India has also become much more vulnerable to tsunamis since the 2004 Indian Ocean tsunami.

Almost 57% of the land is vulnerable to earthquake (high seismic zones III–V), 68% to drought, 8% to cyclones and 12% to floods.

Objectives of the Study

1.To Study Disaster Management in India
2.To formulate methods and tools for natural disaster risk management in different cases in India

Overview of the Disaster Risk Management Programme

The Government of India (GOI), Ministry of Home Affairs (MHA) and United Nations Development Programme (UNDP) signed an agreement in August 2002 for the implementation of "Disaster Risk Management" Programme to reduce the vulnerability of the communities to natural disasters, in identified multi– hazard disaster prone areas.
Goal: "Sustainable Reduction in Natural Disaster Risk" in some of the most hazard prone districts in selected states of India".

The four main objectives of this programme are:

1. National capacity building support to the Ministry of Home Affairs.
2. Environment building, education, awareness programme and strengthening the capacity at all levels in natural disaster risk management and sustainable recovery.
3. Multi-hazard preparedness, response and mitigation plans for the programme at state, district, block and village/ward levels in select programme states and districts.
4. Networking knowledge on effective approaches, methods and tools for natural disaster risk management, developing and promoting policy frameworks

DISASTER :

"Disaster is a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using its own resources" High Power Committee Disaster was constituted in 1999 by Government of India for drawing a systematic, comprehensive, and holistic approach towards disaster.

The Committee has classified disaster in to five groups as;

Sub Group I	Water & Climate Related Disasters	Floods & Drainage Mgt., ,Tornadoes & Hurricanes, Cyclones Hailstorm, Cloud burst, Heat Wave & Cold wave, Snow Avalanches, Droughts, Sea Erosion and Thunder & Lightning.
Sub Group II	Geologically related Disasters	Landslides, Mudflows, and Earthquakes, Dam Failures / Dam bursts and Mine Fires.
Sub Group III	Chemical, Indus., & Nuclear Related Disaster	The Chemical and Industrial & Nuclear Disasters have been included.
Sub Group IV	Accident related Disasters	Forest / Urban Fires, Mine Flooding, Oil spill, major bldg. Collapse, Serial Bomb blasts, Festival related Disasters, Elec. Disasters & fires, Air, Road & Rail Accidents, Boat Capsizing
Sub Group V	Biologically related Disasters	Biological Disaster & Epidemics, Pest Attacks, Cattle epidemics & Food

Case studies and conclusion derived

Management of earthquake India high earthquake risk and vulnerability is evident from the fact that about 59 per cent of India's land area could face moderate to severe earthquakes. During the period 2000 to 2010, more than 25000 lives were lost due to major earthquakes in India, which also caused enormous damage to property and public infrastructure. All these earthquakes established that major casualties were caused primarily due to the collapse of buildings. These emphasise the need for strict compliance of town planning bye-laws and earthquake resistance building codes in India. These guidelines have been prepared taking into account an analysis of critical gapes responsible for specific risk. These guidelines emphasise the need for carrying out the structural safety audit of existing lifelines structures and other critical structures in earthquake prone areas, and carrying out selective seismic strengthening and retrofitting. The earthquake guidelines rest on the following six pillars of seismic safety for improving the effectiveness of earthquakes management in India.

The following are the 6 pillars:

- Earthquake resistant construction of new structures.

- Selective seismic strengthening and retrofitting of existing priority structures and lifeline structures.
- Regulation and enforcement.
- Awareness and preparedness.
- Capacity development of education, training, R& D, capacity building and documentation. Emergency response

Surat, Disaster Management Plan

The city of Surat situated in the State of Gujarat in India having population of more than 4.7 million. Plague in Surat: The plague became an issue of global concern. Close to 200 deaths were linked to the outbreak in Surat. The disease created widespread panic and led to a mass exodus from the city. Apart from the human tragedy, it was a severe blow to not only Surat's economy which suffered a loss of several million rupees every day, but also to the nation's economy. The outbreak had an impact on industrial production, tourism, export, and many other areas. International flights to India were temporarily suspended, and export of food grains from Surat was banned. The precipitating factor for the outbreak of plague in Surat was constant rain which lashed the city for more than two months, and led to flooding and large-scale water-logging in low-lying areas. The primary reason for this was the faulty drainage system. Hundreds of cattle and other animals died due to the flood and water-logging. The floods, in fact, only brought to a crisis point the dangers inherent in inadequate waste management systems.

Conclusion
This plague taught a lesson to the Municipal Authority, other related authorities and the general public in the city. Following the plague all the drainage systems and storm water system were improved. Systems were built for the solid waste management and cleanliness. The public became aware about the issues of cleanliness. The flood management system was introduced; a hydrological contour map was prepared for the city. Rescue and relief services are put in order.

The Bhopal gas tragedy The careless siting of industry and relatively poor regulatory controls leads to illhealth in the urban centers. The Bhopal gas tragedy on December 2nd, 1984, where Union Carbide's plant leaked 43 tons of methyl isocyanate and other substances, used in the manufacture of pesticides, is one of the worst industrial accidents in the recent past. Of the 520,000 people who were exposed to the gas, 8,000 died during the first week and another 8,000 later. The impact on the survivors is visible even today.
Conclusion: The government of India and respective state government through their pollution control board have laid down strict regulation and monitoring system for industries to avoid any such accident. Every industry is forced to have the safety measures and disaster management plan.

India tsunami
Magnitude of disaster On December 26, 2004 the tsunami caused extensive damage in 897 villages in five states/UTs in India. During the tsunami 4,259 were Injured, 5,555 people were missing and 10,749 were dead. The major sectors affected in each state: fisheries and boats, ports and jetties, roads and bridges, power and ICT, housing, water supply and sewerage and social infrastructure. Rescue and relief operations were adjusted to be speedy, effective and timely by the external agency i.e. undertaking debris removal and disposal of

bodies, dispatching relief material, providing food, water, and medical assistance. Adopting good past practices:

- Earlier disaster management programs, done successfully, were revisited to carry forward the lessons learned.
- Encourage ownership of solutions by potential beneficiaries to ensure sustainability.
- Encourage partnerships of government, beneficiaries, community-based women's organizations and NGOs to ensure sustainable development.
- Demonstrate that project implementation can be assured through a fully empowered Project Management Unit with competent leadership.
- Address need for a long term approach to O&M funding.

The way forward

Ultimately, research on natural hazards and disasters, whether from a physical or behavioural science perspective, aims to offer knowledge that might help prevent death, damage and distress in some measure. This is, ideally, knowledge for the common good as well as for its own sake. Yet this ideal must be tempered by awareness that the translation of research into practice is frequently beset by obstacles of many kinds. Access to such knowledge is limited, and those who have it may not share it, nor use it for the common good.

Our focus in this paper has been on what lessons we can draw from previous research in terms of how best to conceptualise how people interpret risks and choose actions based on such interpretations within the context of natural hazards. This context is defined not just by vulnerability to some physical event, but also by social relationships. Indeed, vulnerability itself is partly a function of such social relationships. The judgements and choices underlying risk interpretation and action, then, are not merely personal, but also interpersonal. However, this is still a work in progress. The literature, while varied and extensive, is not yet well integrated. More research on social and research networks within the field of natural hazards could promote better integration

There is increasing acknowledgement of the role of human behaviour in influencing whether hazard events develop into disasters. However, this acknowledgement is rarely accompanied by a more than superficial analysis of the factors that determine human behaviour and observable differences between individuals and social groups in their feelings, cognitions and actions. This imbalance in research activity and funding, and proposals for research on disasters and risk decisions, is exemplified by the recently released NRC report on U.S. national earthquake resilience. By and large, integrated risk assessments are lacking, and where they do exist, integration with the social and behavioural sciences is weak.

The quality of data available to allow for more integrated risk assessments is also uneven. Data quality issues can stem from lack of monitoring technologies, insufficient funding, or suppression of data or delay (e.g., of disease outbreak information by governments). There have been major advances in earth observation and Geographical Information Systems (GIS). Advances in GIS have been hailed as offering potential means of forecasting a range of natural disasters, including landslides . However, although considerable progress has been made, diffusion of this technology is still hampered by factors such as problems in acquiring appropriate data, the complexity of predictive models and a preference for data that can be acquired at a low cost rather than data that are more relevant and predictive. Even in the (relatively successful) context of Tsunami warning systems, it is only recently that much attention has been paid to what makes warnings effective, and/or to the social milling that happens in disasters . Some attempts have been made to develop a more holistic model for effective warning systems, such as that for volcanoes in New Zealand .

Conclusion

Disasters are inevitable. The fact lies in stating “we must all be prepared to try to survive the current and the forthcoming disasters.” We cannot rule the nature but we can at least be watchful and vigilant. The structured and preplanned preparedness and the healthy response to the disaster will help save the lives. Our success lies in, as is preached by the great people that existed and exist on earth “unity and unanimity devoid of discords.”

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DYNAMIC IMPLEMENTATION OF RECORDS OF HOSPITAL

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ABSTRACT

Many hospitals currently using Electronic Health Records for improving their services and usage of such Electronic Health Records have increased tremendously. The function of an Electronic Health Record is to computerize various day to day activities of Hospital front office and such a system is user friendly simple, fast, and available at a low price. It deals with the collection of patient's information, diagnosis details, medicines etc, earlier it was done manually. The main function of the proposed system is to register, store patient details, doctor details and retrieve these records. Keeping various files and records in system makes retrieval and manipulation easy whenever required. To manipulate these details correctly user provides input such as patient details, diagnosis details and medicine details while system output is details in dynamic or graphical format on the user screen. The data can be retrieved or fetched easily. The data is shown in tabular form in database but in the User Interface as well the graphical representation of the data is been shown so that an overview can easily be estimated. The data are well protected for personal use and makes the data processing very fast.

Keywords: Medical Records, Patient Appointment, Electronic Health Records, Patient Record, Information Retrieval

BACKGROUND

In recent years, Electronic Health Records (EHRs) havebeen implemented by an ever increasing number ofhospitals around the world. There have, for example,been initiatives, often driven by government regulationsor financial stimulations, in the USA [1], the UnitedKingdom [2] and Denmark [3]. EHR implementationinitiatives tend to be driven by the promise of enhancedintegration and availability of patient data [4], by theneed to improve efficiency and cost-effectiveness [5], bya changing doctor-patient relationship toward one wherecare is shared by a team of health care professionals [5],and/or by the need to deal with a more complex andrapidly changing environment [6] Background. In recent years, Electronic Health Records (EHRs) havebeen implemented by an ever increasing number ofhospitals around the world. There have, for example,been initiatives, often driven by government regulationsor financial stimulations, in the USA [1], the UnitedKingdom [2] and Denmark [3]. EHR implementationinitiatives tend to be driven by the promise of enhancedintegration and availability of patient data [4], by theneed to improve efficiency and cost-effectiveness [5], bya changing doctor-patient relationship toward one wherecare is shared by a team of health care professionals [5],and/or by the need to deal with a more complex andrapidly changing environment.

1. INTRODUCTION

Electronic Health Records (EHRs) have been implemented by an ever increasing number of hospitals around the world in recent times. EHR systems have various forms (Anderson,2001), and the term can relate to a broad and wide range of electronic information systems used in health care. EHR systems can be used in individual organizations, as interoperating systems in affiliated health care units, on a regional level, or nationwide .Health care units that use EHRs include hospitals, pharmacies, general practitioner surgeries, and other health care providers. The implementation of hospital-wide EHR systems (Nguyen and Bellucci, 2014),is a complex matter involving a range of organizational and technical factors including human skills, organizational structure, culture, technical infrastructure, financial resources, and coordination(Tiwari and Kumar, 2015). The multiple objectives of hospital are curing, caring for patients, and educating new physicians and nurses.

The project Dynamic Implementation of Records of Hospital in Graph includes registration of patients, storing their details into the system, and also computerized or digital billing in the reception, pharmacy, and labs. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. Search facility has been included to know the current status of each room. User/Admin can search availability of a doctor and the details of a patient using the id. The Dynamic Implementation of Records of Hospital can be entered using credentials i.e. username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast. This System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. This System is designed for multispecialty hospitals, to cover a wide range of hospital administration and management processes. It is an integrated end-to-end Hospital Records Management System that provides relevant information across the hospital to support effective decision making for patient care, hospital administration and critical financial accounting in a seamless flow(Gang &Kralewski, 2005).

2. BACKGROUND

Hospital Records Management System is a software product framed designed to enhance the quality and implementation management of hospital in the areas of clinical process analysis and activity-based costing(Van de Velde, 2000). Hospital Records Management System enables you to develop your organization or product and enhances its effectiveness and quality of work(Kushniruk, 2008). Managing the key processes efficiently is critical to achieve the success of the hospital helps you manage your processes (Singh & Sinha, 2005).

The Lack of immediate retrievals of information is very complicated considering lots of data (O'Brien,2007).The information or data is very difficult to fetch or retrieve and to find particular information like finding out about the patient's history or any other data(Manes,1998); the user has to go through various register processes(Brennan &Leape, 1991). This results in inconvenience and wastage of time. The storage is another problem in such system. The information generated by various transactions takes time and efforts to be stored at right place (Chaudhry & Wang, 2006).Various changes to information like patient details or immunization details of child are difficult to make as paper work is involved. Manual calculations are error prone and take a lot of time this may result in inaccurate information. For example, calculation of patient's bill is based on various treatments. This becomes a difficult task as information is difficult to collect from various register. These are the various jobs that need to be done in a Hospital by the operational staff and Doctors. The activities are described below:-

1) Information about Patients is done by just writing the Patients name, age and gender. Whenever the Patient comes up his information is stored freshly.
2) Bills are generated by analysing price for each facility provided to Patient on a separate sheet and at last they all are summed up.
3) Diagnosis information to patients is generally recorded on the document, which contains information about Patient. It is clipped or resolved after some time period to decrease the paper load in the office.
4) Information about various diseases. Doctors themselves do this job by remembering various medicines.

All this work is done manually by the receptionist and other operational staff and lot of papers are needed to be handled and taken care of. The main problems with doctors is that they have to remember various medicines available for diagnosis and sometimes miss better alternatives as they can’t remember them at that time(Santosh,2009).The entire system mainly consists of five modules and those are admin module, user module (patient), doctor module, pharmacist module and receptionist module.

3. METHODOLOGY

Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the hospital management infrastructure. Often information is incomplete or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores.

3.1 PROPOSED SYSTEM:

The Dynamic Implementation of records of Hospital is designed for any hospital to replace their existing manual paper based system. This new system is used to control the information of patients, room availability, staff, operating room schedules and patient invoices. These services are to be provided in an efficient, cost effective manner, with the goal of reducing the time and resources currently required for such tasks. The user who received the file will do the operations like de embedding, decryption, and decompress in their level of hierarchy etc. The flow is shown in figure 1 and system framework is given in figure 2.

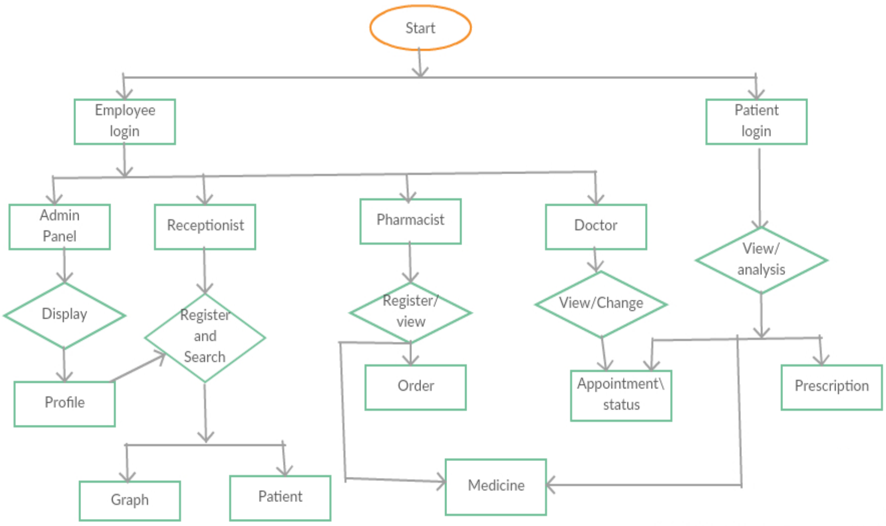


Figure1. Data Flow in Modules

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are economic feasibility, technical feasibility and operational feasibility. This study is carried out to check the economic impact will have on the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products have to be purchased. This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes for the implementing this system.

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

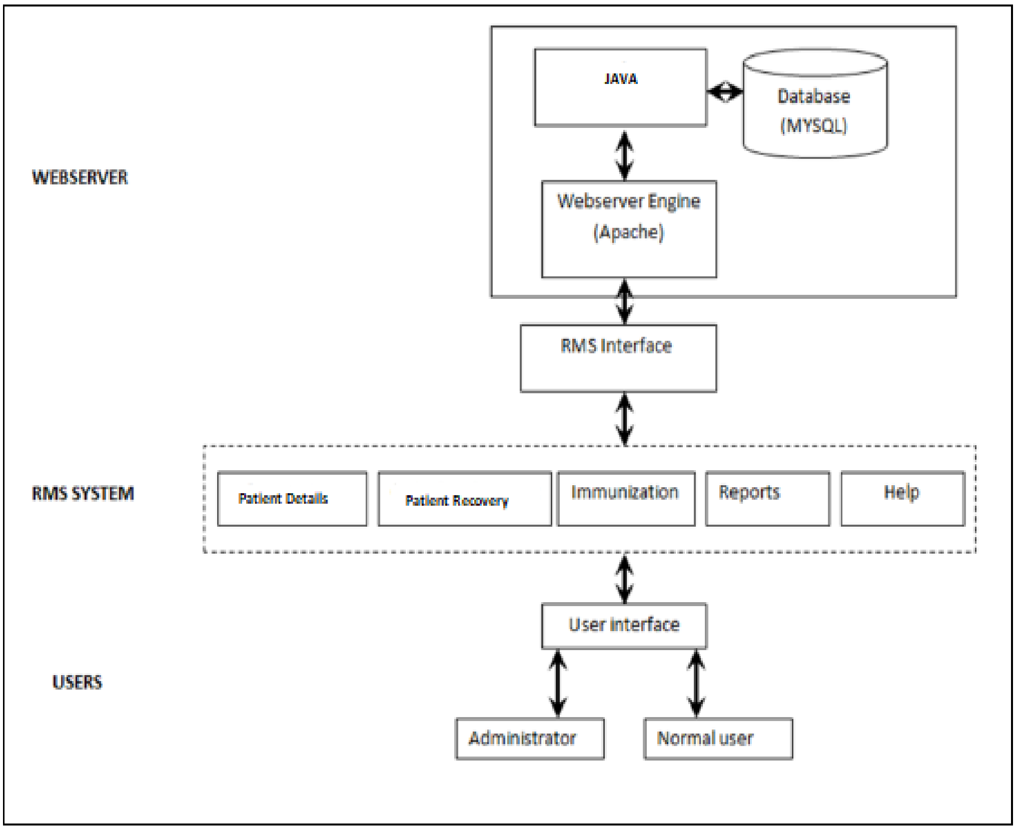


Figure2. System Framework

4. EXPERIMENTAL SETUP

To be used efficiently, all computer software needs certain hardware components or the other software resources to be present on a computer. These pre-requisites are known as system requirements and are often used as a guideline as opposed to an absolute rule. Most software defines two sets of system requirements: minimum and recommended. With increasing demand for higher processing power and resources in newer versions of software, system requirements tend to increase over time. Industry analysts suggest that this trend plays a bigger part in driving upgrades to existing computer systems than technological advancement. We have run our software using Processor Intel Dual Core i3consuming less than 1GB RAMupto80GB Hard Disk. The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. This could be operated in Operating System such as Windows 7/XP/8/10. This is been made by using HTML,CSS, JAVASCRIPT,JSP and Mysql on localhost://phpmyadminas an interface.

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed. Sometimes for some project you might not receive any requirements or documents to work with. But still there are other sources of requirements that you can consider for the requirement or information, so that you can base your software or test design on these requirements.

5. RESULTS

EMPLOYEE LOGIN AND DETAIL PANEL

This is the Main Employee Login Page, in which an Employee can login and perform its various operations (shown in figure 3 and 4). All employees need credentials for signing in the system. The employee such as Administrator, Receptionist, Pharmacist, and Doctor can sign in after creating their regular account.

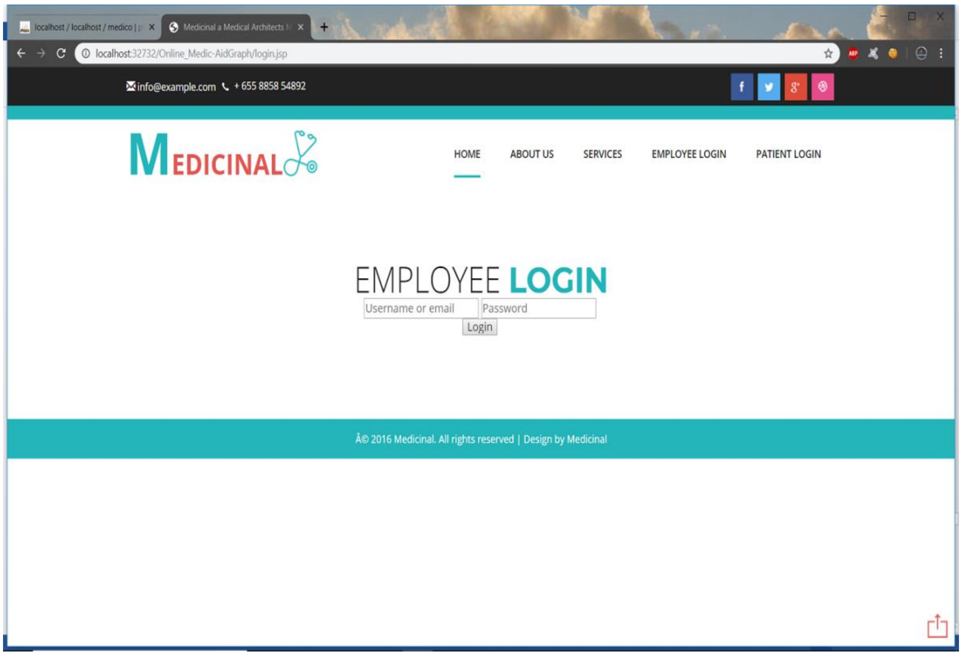


Figure 3

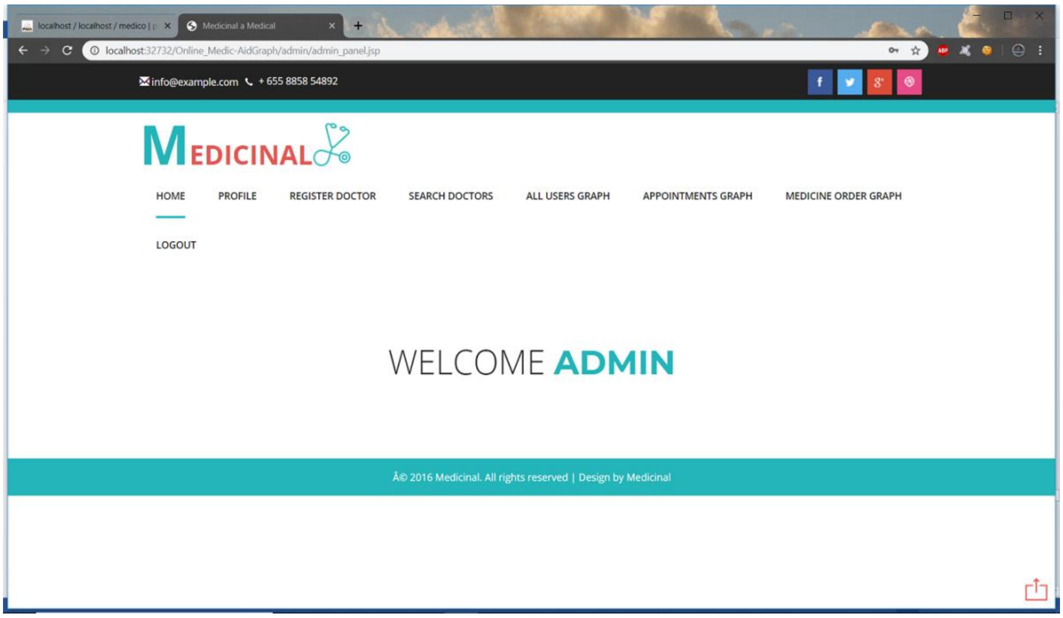


Figure 4

This is the Employee Detail Page, in which an administrator can see the details, register doctor, Search Doctor, and can access all the Graphs such as: All users Graph, Appointments Graph, Medicine Order Graph.

APPOINTMENT GRAPH:

This is the Appointment Graph Page (shown in figure 5), in which all the appointments which were fixed are been in dynamic form both in Pie Chart and Bar Chart. A user can easily analyze by looking at the Pie chart generated.

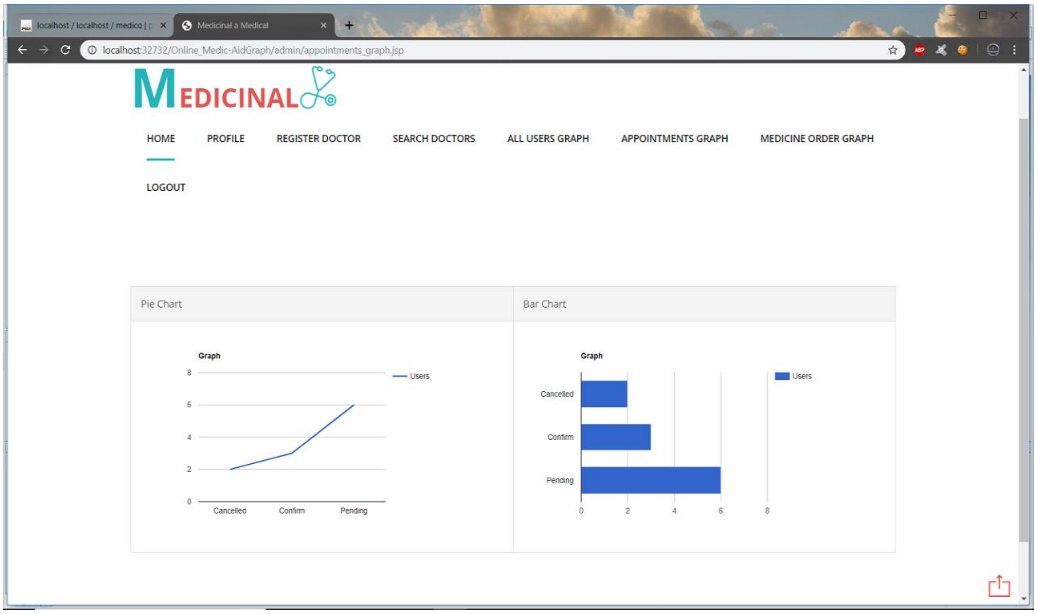


Figure 5.

REGISTER DOCTOR:

This Page is under Administrator Panel in which admin can register new doctor, though it is the registration page to register a new doctor. A registered doctor can retrieve a patient records or any other information related to a patient treatment.

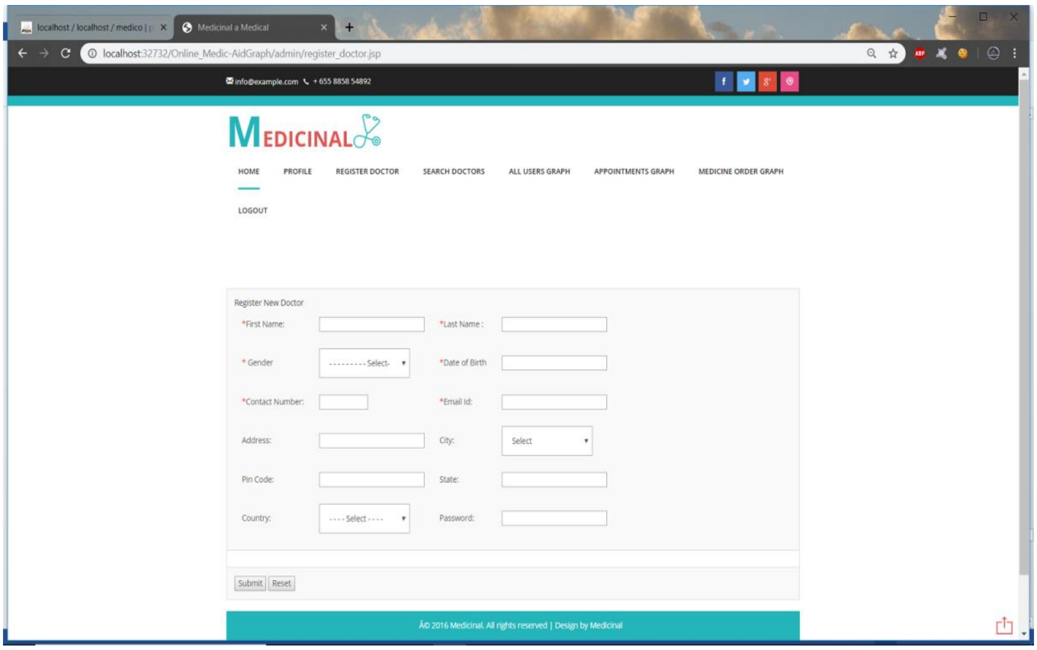
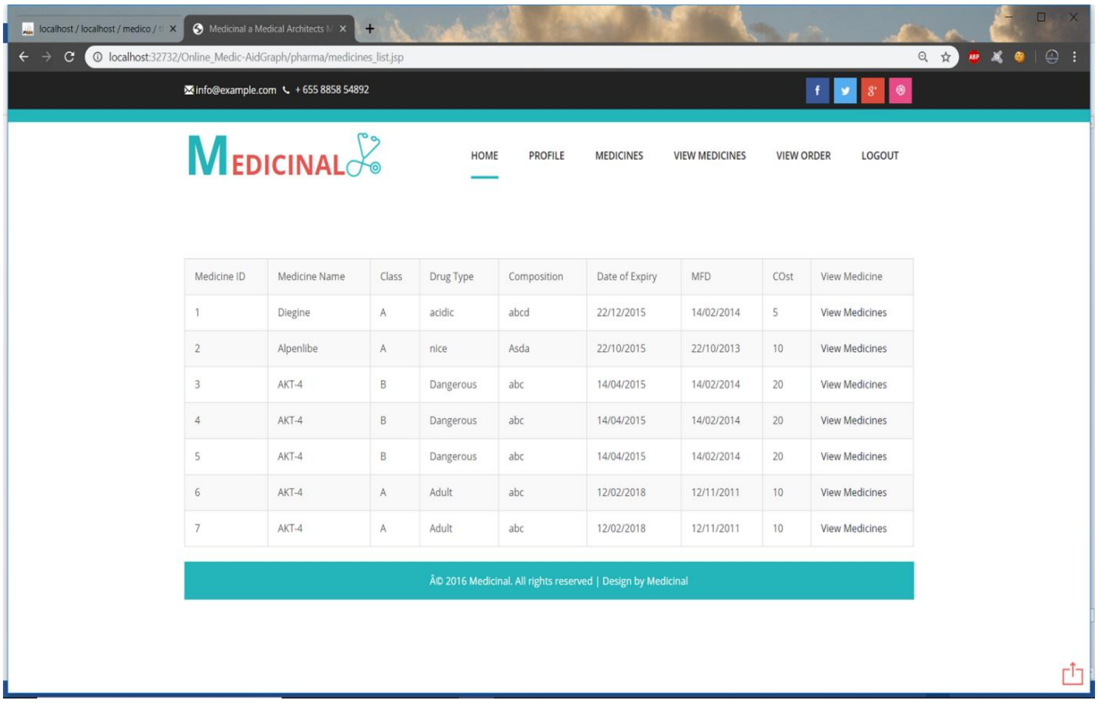


Figure 6.

MEDICINES STATUS

This is the Medicine Status Page, in which all the medicines that are in stock are shown in tabular form with Class, Drug Type, Composition, Expiry Date, Cost,View Medicine.

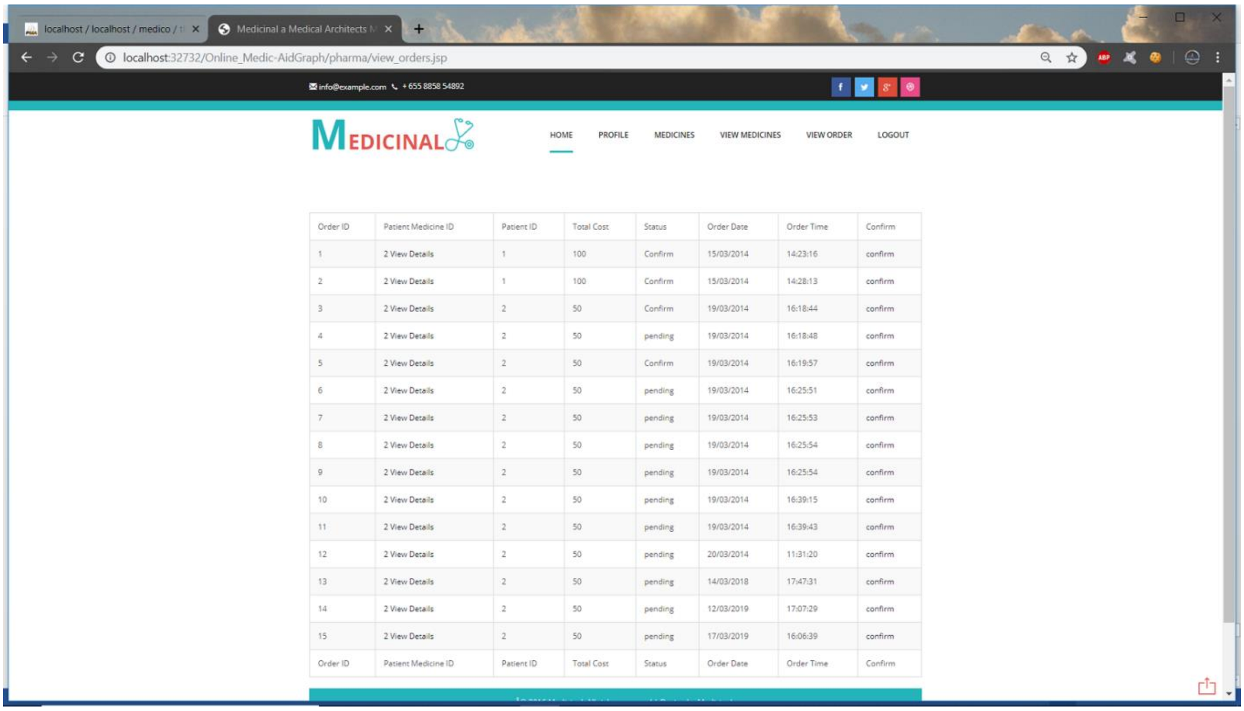


Medicine ID	Medicine Name	Class	Drug Type	Composition	Date of Expiry	MFD	COst	View Medicine
1	Diegine	A	acidic	abcd	22/12/2015	14/02/2014	5	View Medicines
2	Alpenlibe	A	nice	Asda	22/10/2015	22/10/2013	10	View Medicines
3	AKT-4	B	Dangerous	abc	14/04/2015	14/02/2014	20	View Medicines
4	AKT-4	B	Dangerous	abc	14/04/2015	14/02/2014	20	View Medicines
5	AKT-4	B	Dangerous	abc	14/04/2015	14/02/2014	20	View Medicines
6	AKT-4	A	Adult	abc	12/02/2018	12/11/2011	10	View Medicines
7	AKT-4	A	Adult	abc	12/02/2018	12/11/2011	10	View Medicines

Figure 7

MEDICINES ORDER PANEL:

This is Medicine Order Panel in which the Pharmacist can place the order and verify.



Order ID	Patient Medicine ID	Patient ID	Total Cost	Status	Order Date	Order Time	Confirm
1	2 View Details	1	100	Confirm	15/03/2014	14:23:16	confirm
2	2 View Details	1	100	Confirm	15/03/2014	14:28:13	confirm
3	2 View Details	2	50	Confirm	19/03/2014	16:18:44	confirm
4	2 View Details	2	50	pending	19/03/2014	16:18:48	confirm
5	2 View Details	2	50	Confirm	19/03/2014	16:19:57	confirm
6	2 View Details	2	50	pending	19/03/2014	16:25:51	confirm
7	2 View Details	2	50	pending	19/03/2014	16:25:53	confirm
8	2 View Details	2	50	pending	19/03/2014	16:25:54	confirm
9	2 View Details	2	50	pending	19/03/2014	16:25:54	confirm
10	2 View Details	2	50	pending	19/03/2014	16:39:15	confirm
11	2 View Details	2	50	pending	19/03/2014	16:39:43	confirm
12	2 View Details	2	50	pending	20/03/2014	11:31:20	confirm
13	2 View Details	2	50	pending	14/03/2018	17:47:31	confirm
14	2 View Details	2	50	pending	12/03/2019	17:07:29	confirm
15	2 View Details	2	50	pending	17/03/2019	16:06:39	confirm
Order ID	Patient Medicine ID	Patient ID	Total Cost	Status	Order Date	Order Time	Confirm

Figure 8.

PATIENT REGISTRATION PANEL:

This is a Patient Registration panel, in which receptionist can register new patient and can fix the appointment with the respective doctor.

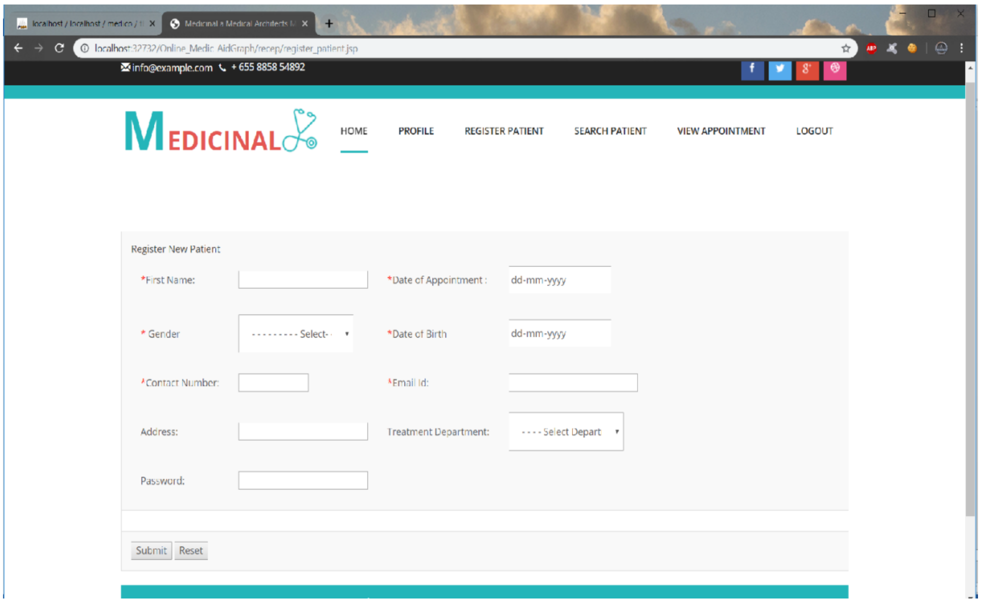


Figure 9.

ALL USERS GRAPH PANEL:

This is the All Users Graph Panel, in which all the users such as Admin, Doctor, Pharmacist, Receptionist data is been shown in a graphical form or dynamically.

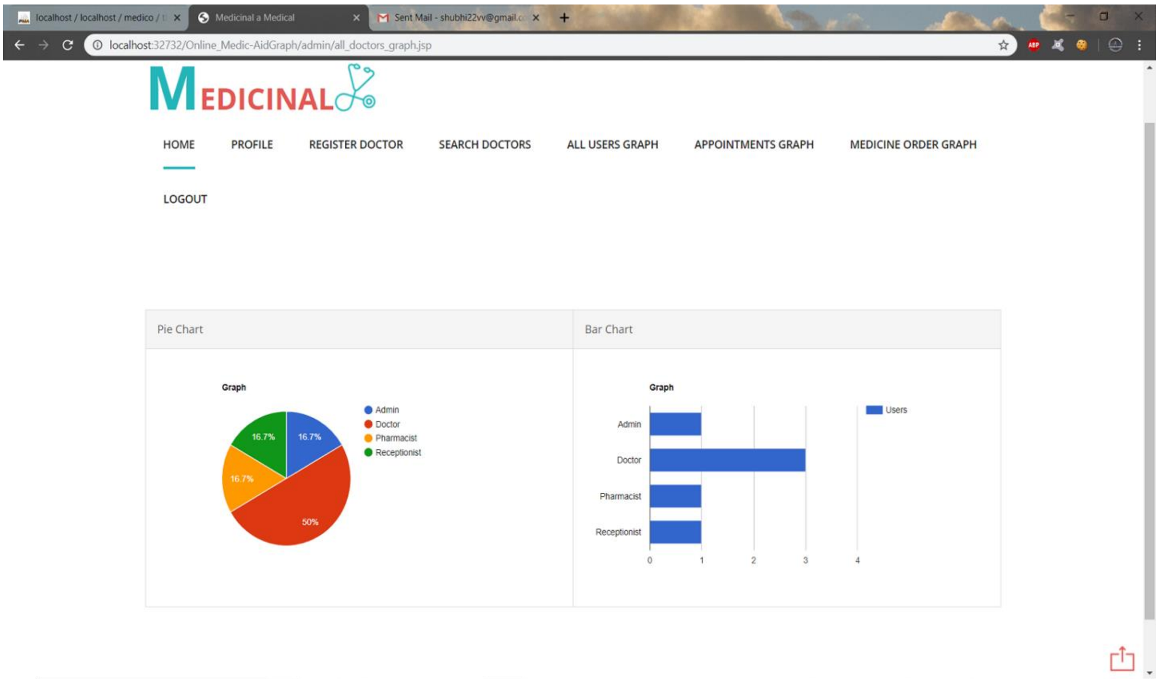


Figure 10.

MEDICINE ORDER GRAPH:

This is the Medicine Order Graph, in which the medicines which are been ordered because of less in stock

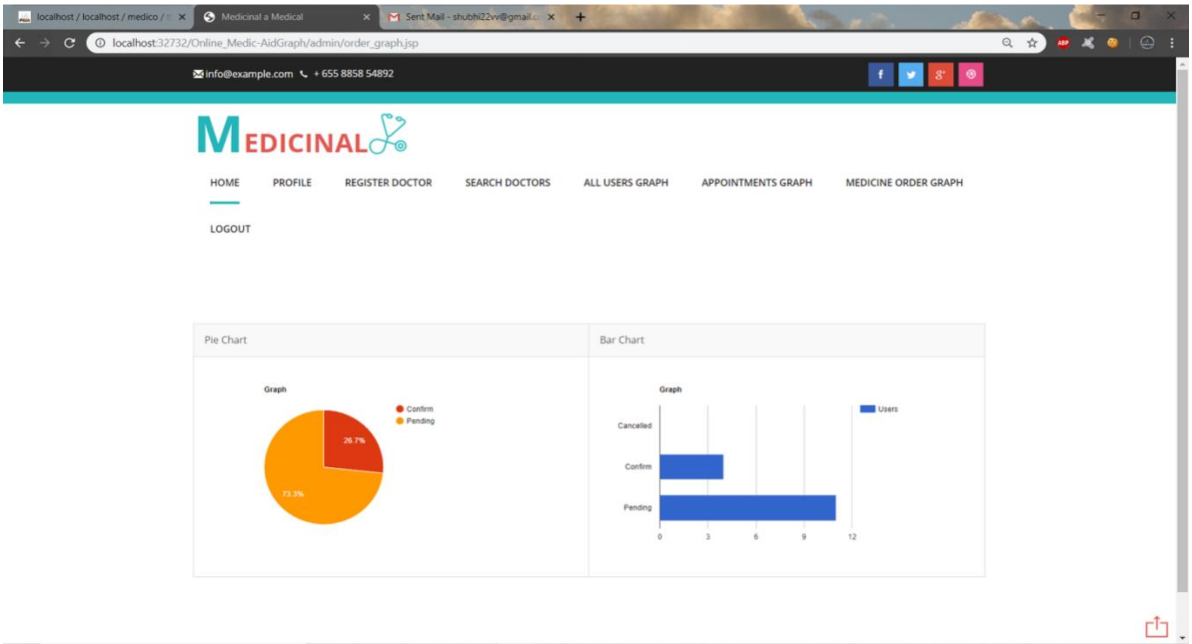


Figure 11.

6. CONCLUSION

Medical records form an important part of a patient management. It is important for the doctor and medical establishment to properly maintain the records of the patient for two important reasons. First one is that it helps in proper evaluation of the patient and to plan treatment protocol. Second is that the legal system relies mainly on documentary evidence in cases of medical negligence. Since we are entering details of the patients electronically in the" Hospital Records Management System", data will be secured and shown up precisely. Using this application we can retrieve patient's history with a single click. Thus processing information will be faster. It guarantees accurate maintenance of Patient details. It easily reduces the book keeping task and thus reduces the human effort and increases accuracy speed.

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E – COMMERCE IN THE CONTEXT OF TRADE, COMPETITION AND CONSUMER PROTECTION IN INDIA

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ABSTRACT

India is rapidly marching towards becoming a digitally empowered society. The push for e-governance, the proliferation of smartphones, increasing Internet access and booming digital payments are fueling the country's journey towards a trillion-dollar digital economy by 2025. The widespread acceptance of Digital is being seen as a catalyst for overall economic growth, and with the combination of favorable demographics and policy reforms, India presents a unique and powerful growth story. In the last decade, the E-commerce sector in India has witnessed an unprecedented growth and if numbers are to be believed then India is the fastest growing market for the E-commerce sector with the e-commerce market expected to grow approximately 1,200 per cent by 2026.

The Indian e-commerce market is expected to grow to US$ 200 billion by 2026 from US$ 38.5 billion as of 2017-18. However, at the same time, there are concerns like privacy of data; online identity theft and sometimes, the products ordered do not conform to their actual description. This calls for introduction of Consumer Protection Bill, 2018 which focuses on mechanisms for information sharing between buyers and sellers, easy dispute resolution mechanisms and protection of sensitive information."

The present paper studies the emerging trends and growth of e-commerce in India. It also studies e-commerce and consumer protection in Indian context. The study exhibits the consumer complaints against e-commerce companies in recent years. It highlights the regulations related to e-commerce specially "The Consumer Protection Bill 2018" with reference to addressing woes of e- customers. The paper, in the end also suggests the measures for the protection of e-consumer in digital era.

Keywords : *Consumer Protection Bill 2019, Digital Era, E-Commerce, E-Consumer*

JEL : D18

1. INTRODUCTION

The internet has provided consumers with a powerful tool for searching for and buying goods and services. Benefits have included increase competition and lower prices, more choice in products and services, and the convenience of shopping for goods and services from the vendors located around the world, from anywhere and at any time. Today e-commerce has become a integral part of everyday life. Accessibility to e-commerce platform is not a privilege but rather a necessity for most people particularly in urban areas. E-commerce is not only a new technology and a new frontier for global business and trade but it is still evolving.

The e-commerce has transformed the way business is done in India. The Indian e-commerce market is expected to grow to US$ 200 billion by 2026 from US$ 38.5 billion as of 2017. Much growth of the industry has been triggered by increasing internet and Smartphone penetration. The ongoing digital transformation in the country is expected to increase India's total internet user base to 829 million by 2021 from 560.01 million as of September 2018. India's internet economy is expected to double from US$125 billion as of April 2017 to US$ 250 billion by 2020, majorly backed by ecommerce. India's E-commerce revenue is expected to jump from US$ 39 bn in 2017 to US$ 120 bn in 2020, growing at an annual rate of 51 per cent, the highest in the world.

Market Size

Driven by increased penetration of smartphones, the launch of 4G networks and increasing consumer wealth, the Indian e-commerce market is projected to grow from US$ 38.5 billion in 2017 to US$ 200 billion by 2026. The sales of e-commerce industry of India increased 40 per cent every year to reach Rs 9,000 crore (US$ 1.5 billion) during the same period, backed by huge deals and discounts offered by the e-commerce giants.

Online retail sales in India are estimated to increase by 31% to reach US$ 32.70 billion, led by Paytm Mall, Amazon and Flipkart. During 2018, electronics is currently the biggest contributor to online retail sales in India with a share of 48%, followed closely by apparel at 29%.

2. OBJECTIVES AND METHODOLOGY

The objectives and the research methodology are as follows:

OBJECTIVES OF STUDY:

The present study has been geared to achieve the following objectives;

1. To study the emerging trends and growth of e-commerce in India
2. To exhibits the consumer complaints against e-commerce companies in recent years
3. To highlights the provisions of Consumer Protection Bill 2019 with reference to e-customer
4. To suggests the measures for the protection of e-consumers.

RESEARCH METHODOLOGY:

Type of Research: Quantitative and Analytical Research

Data Collection Method: This study has been carried out with the help of secondary data only, all the data has been collected from the various sources such as websites & reports and compiled as said by the need of the study.

Sources of Data Collection: The study is based on the published data. For the purpose of present study, the data was extracted from the various newspapers, journals, articles Rajya Sabha & Lok Sabha Proceedings and websites particularly from Department of Consumer Affairs (DCA) under the Ministry of Consumer Affairs, Food & Public Distribution.

3. E-CONSUMER & E-COMMERCE INDUSTRY IN INDIA

When are you an e-commerce consumer

If you order a product/service online you are an e-commerce consumer, irrespective of whether you paid for it online or offline. This includes ordering the product through a website, app or TV shopping show.

Even when one buys from an unregistered entity – like someone selling something on a Facebook page – he is legally an e-commerce consumer or an e-consumer. Products like books, headphones, phones and clothes, and services like booking of tickets, banking services; e-wallet, food delivery, and insurance are commonly sold online. Digital products like online games and software are also sold online and are also given under a usage license — like MS Office. If bought online then these also come under the spectrum of e-commerce.

The e-commerce company you buy from may either have a market-based model or an inventory-based model. In the former, the company does not manufacture the product or directly provides the service while in the later the same company manufactures the product or provides the service, and sells it online. The examples include booking train tickets online on Indian Railways website or online shopping site of the furniture company Pepper fry.

In the market-based model, the e-commerce company provides a marketplace to many companies to sell their products or services online. The website acts as an intermediary which helps in facilitating the transaction. Flipkart and Makemytrip are examples

Basically, three types of E-Commerce model exist. They are:-

1) B2C (business to consumer)

2) B2B (business to business)

3) C2C (consumer to consumer)

Growth of E-Commerce industry in India:

India's e-commerce market has the potential to grow more than four folds to US$ 150 billion by 2022 supported by rising incomes and surge in internet users. Online shoppers in India are expected to reach 120 million in 2018 and eventually 220 million by 2025. Average online retail spending in India was US$ 224 per user in 2017.

E-commerce industry in India witnessed 21 private equity and venture capital deals worth US$ 2.1 billion in 2017 and 40 deals worth US$ 1,129 million in the first half of 2018. E-commerce startups in India received US$ 786.87 million of funding in the first half of 2018. Online retail sales in India are expected to grow by 31 per cent to touch US$ 32.70 billion in 2018, led by Flipkart, Amazon India and Paytm Mall. Online retail is expected to contribute 2.9 per cent of retail market in 2018.

Figure 1: Commerce Industry Advantages in India
Source: India Brand Equity Foundation Report, 2019

Some of Key highlights of Indian E-Commerce Industry are as follows:

- The growth trajectory of e-commerce industry in India has been upward growth. It is anticipated to surpass the US e-commerce industry by 2034 to become the world's second largest e-commerce market
- The e-commerce market is projected to reach US$ 64 billion by 2020 and US$ 200 billion by 2026 from US$ 38.5 billion as of 2017.

Figure 2: Projected Growth of E-Commerce Market

Source: Authors Presentation from data extracted from India Brand Equity Foundation

- With increasing penetration of internet, internet users in India are likely to increase to 829 million by 2021 from 481 million as of December 2017
- Growing internet penetration is likely to result in expansion of e-commerce industry
- India's internet economy is estimated to double from US$125 billion as of April 2017 to US$ 250 billion by 2020, which would be majorly attributed to ecommerce.

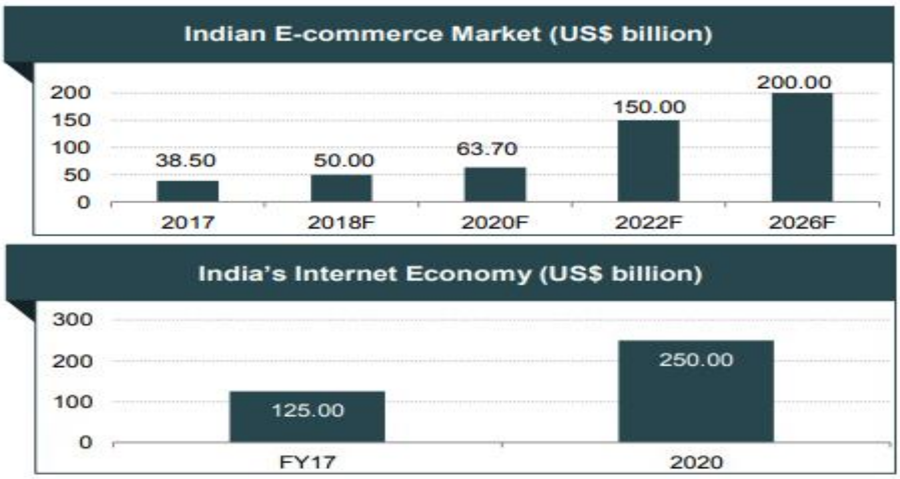

Figure 3: Indian E-Commerce Market Size

Source: Media sources, Aranca Research

A young demographic profile, rising internet penetration and relative better economic performance are the key drivers of this sector. The Government of India's policies and regulatory frameworks such as 100 per cent foreign direct investment (FDI) in B2B e-commerce and 100 per cent FDI under automatic route under the market place model of B2C e-commerce are expected to further propel growth in the sectors. As of August 2018, the government is working on the second draft of e-commerce policy, incorporating inputs from various industry stakeholders. In February 2019, the Government of India released the Draft National e-Commerce Policy which encourages FDI in the marketplace model of e-commerce. Further, it states that the FDI policy for e-commerce sector has been developed to ensure a level playing field for all participants. According to the draft, a registered entity is needed for the e-commerce sites and apps to operate in India.

INTERNET PENETRATION IN INDIA:

- Internet penetration in India increased from just 4 per cent in 2007 to 34.42 per cent in 2017, registering a CAGR of 24 per cent between 2007 and 2017
- As of September 2018, internet penetration was measured at 88.26 per cent in urban areas and 21.76 per cent in the rural areas of India. With growing internet penetration, internet users in India are expected to increase from 445.96 million in 2017 to 829 million by 2021. As of September 2018, internet subscribers in India stood at 560.01 million people, & as of September 2018 the overall internet penetration in India was 46.13 per cent.
- Out of an estimated urban population of 444 million as per 2011 census, 390.91 million are already using the internet as per the data of December 2018
- However, out of an estimated rural population of 906 million as per 2011 census, only 213.30 million are using the internet as per the data of December 2018. Therefore, there is a great opportunity to increase internet penetration in the rural areas
- Internet penetration in rural India is expected to grow as high as 45 per cent by 2021 compared to the current rate of 21.76 per cent.
- Each month, India is adding approximately 10 million daily active internet users to the internet community supporting the e-commerce industry which is the highest rate in the world.
- Number of active internet users in the country is the second highest globally and data usage of 8 GB/subscriber/month is comparable to developed countries.
- Online shoppers in India are expected to reach 220 million by 2025 & Digital transactions are expected to reach US$ 100 billion by 2020.
- If ‘Daily Users’ are studied, then it can be concluded that both in Urban and Rural India, the younger generations make the major part of the internet users
- The e-commerce retail logistics market in India is estimated at US$ 1.35 billion in 2018 and is expected to grow at a 36 per cent CAGR over the next five years.
- Increasing penetration of internet is likely to trigger growth of e-commerce industry in India. Through its ‘Digital India’ campaign the Government of India is aiming to create a trillion dollar online economy by 2025.

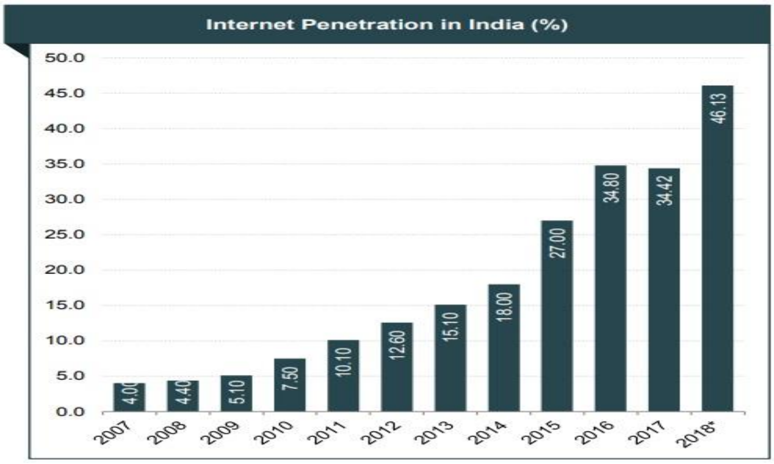

Figure 4: Internet Penetration in India in %
Source: Economic Times, Live Mint, Aranca Research

The total internet user base in India is projected to increase from 560.01 million in September 2018 to 829 million by 2021.

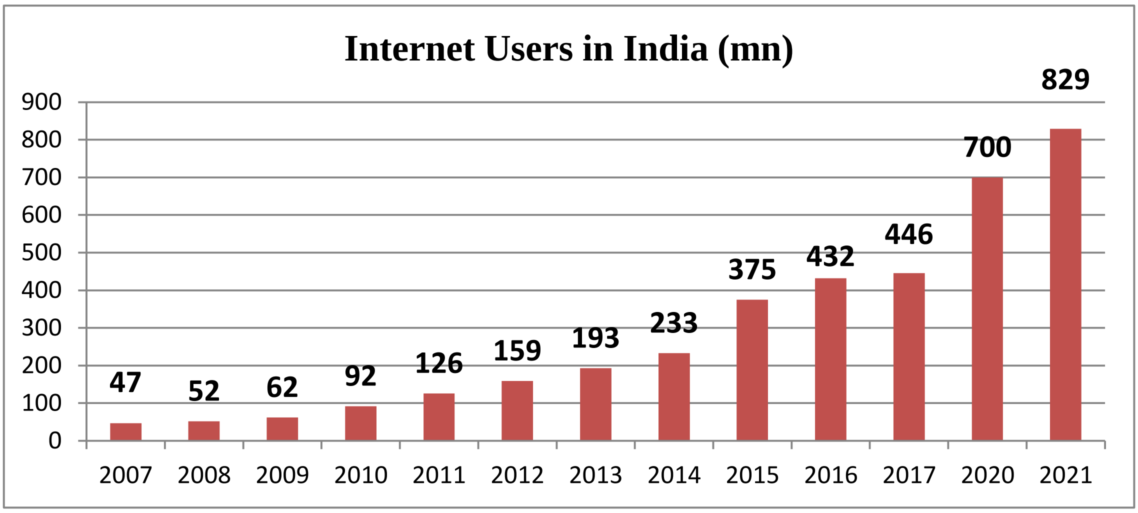

Figure 5: Internet Users in India in mn
Source: F Forecast Research

Sector Composition in 2018:

Currently, there are 1- 1.2 million transactions per day in e-commerce daily.

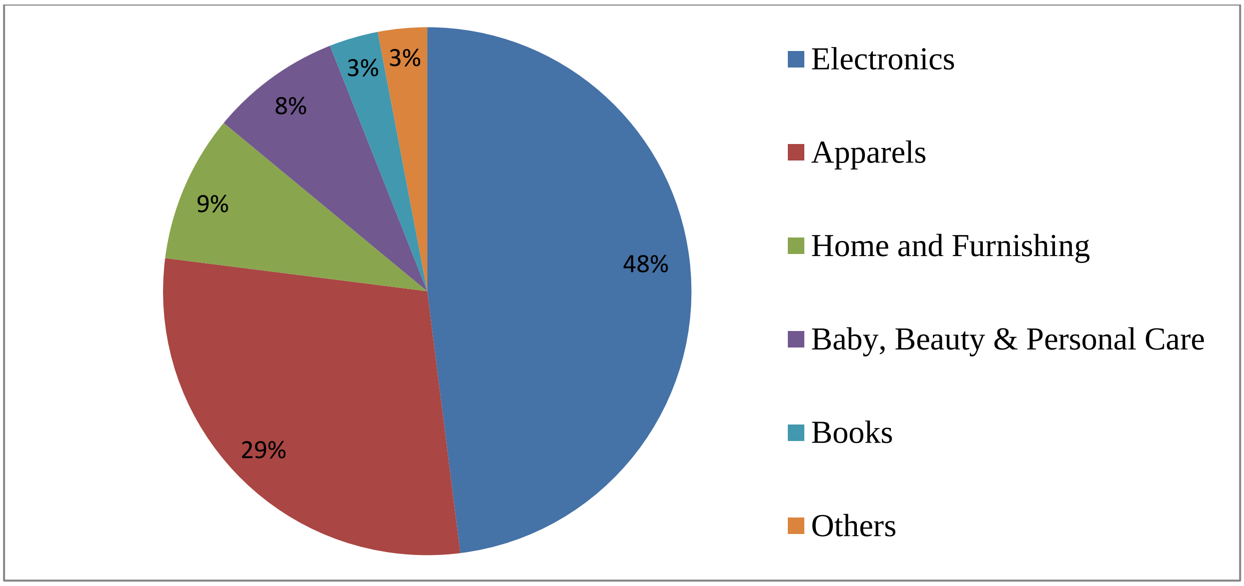

Figure 6: Shares of Various Segments in E-commerce Retail by Value (2018)
Source: KPMG and CII Reports

What laws govern e-commerce

- Consumer Protection Act, 1986
- Information Technology Amendment Act, 2008

- Policies lay down by regulatory bodies like Reserve Bank of India, Indian Medical Association (IMA) etc, depending on the product/service sold. For example, IMA regulations will apply in cases where medicines are sold online.

4. COMPLAINTS AGAINST E-COMMERCE FIRMS RISE 42% IN A YEAR

As the e-commerce industry continues to rise in India, the number of complaints against e-commerce firms has also been on the increase. According to data given in Parliament by the Ministry of Consumer Affairs, Food and Public Distribution, there has been registered a 42% swell in one year and a 15-fold raise in the past four years.

The e-commerce industry has experienced exponential growth in the past few years, almost doubling the value in 2016-17 as compared to the value in 2015-2016. Here's a look at the growth of the e-commerce sector over the years. The valuations are based on the Economic Survey 2017-18, IBEF Report and industry reports.

E-commerce Industry in India (US$ billions)

Propelled by rising Smartphone penetration, the launch of 4G networks and increasing consumer wealth, the Indian E-commerce market is expected to grow to US$ 200 billion by 2027 from US$ 38.5 billion in 2017.

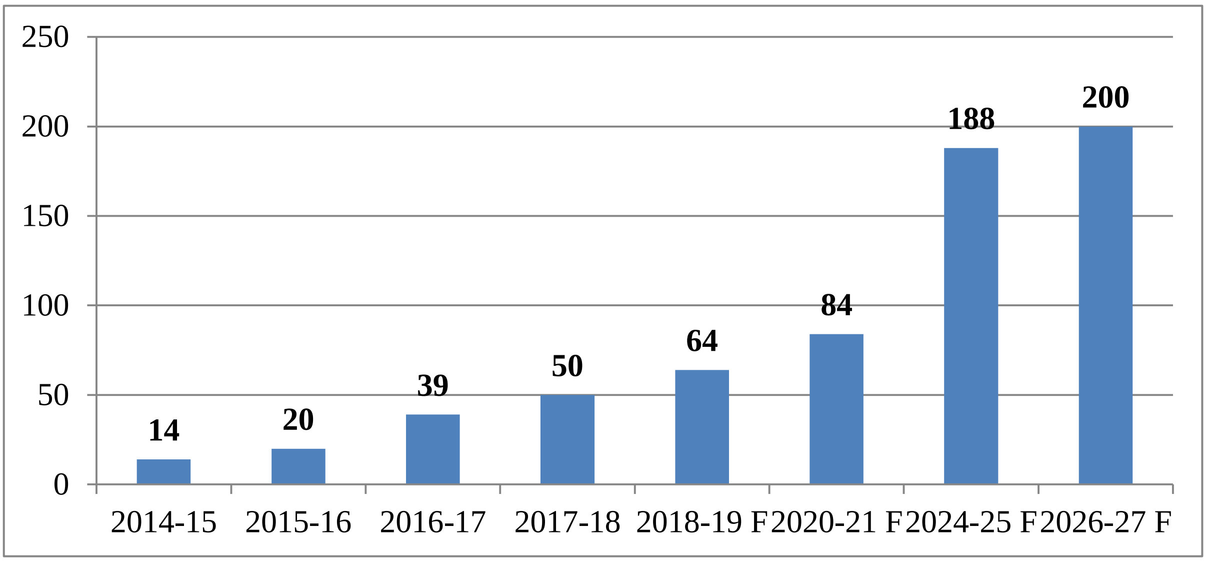

Figure 7: E-commerce Industry in India (US$ billions)

Source: Economic Survey 2017-18, IBEF and industry reports

There has also been registered an increase in the number of complaints registered by the National Consumer Helpline (run by the Department of Consumer Affairs) against e-commerce companies which is in tandem with the rise in the number of online buyers.

The chart below depicts the increase in number of complaints against e-commerce companies and the growth of online buyers (industry estimates from ASSOCHAM and others).

Year	No. of Complaints	No. of Consumers (mn)
2013-14	5204	NA
2014-15	6919	40

2015-16	28331	50
2016-17	54872	69
2017-18	78088	108

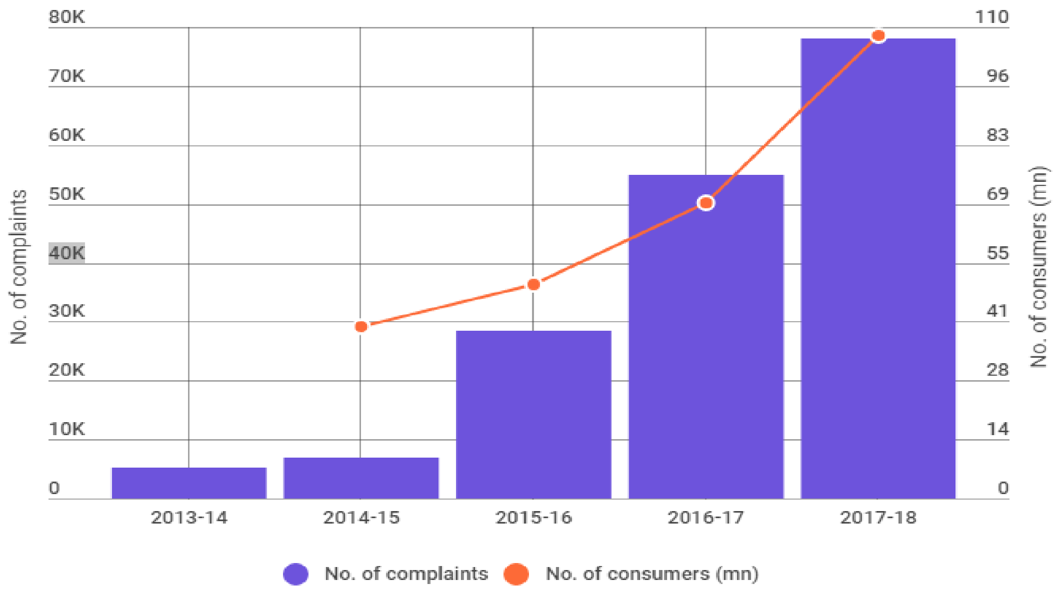

Figure 8:Complaints against E-Commerce companies and the no. of Consumers
Source: Industry estimates from ASSOCHAM and others

The National Consumer Helpline has partnered with 66 e-commerce companies and the complaints received are transferred through the system to these companies for redressed, the reply stated.

According to the written reply in Parliament, consumers will be protected by the Consumer Protection Bill 2019, which will be taken up in the ongoing Monsoon session of the Lok Sabha.

The Bill seeks to constitute a Central authority which would be competent to investigate complaints, provide refunds and compensation to consumers and impose penalties.

5. "THE CONSUMER PROTECTION BILL 2018" NOW CALLED AS "THE CONSUMER PROTECTION BILL 2019" WITH REFERENCE TO ADDRESSING WOES OF E- CUSTOMERS

Globalisation, expansion of trade, introduction of new ways of dealings, supplies and e-commerce has created new opportunities and options for consumers. However, these facilities have also increased the vulnerability of the consumers to new types of unfair and unethical business and trade practices. This called for the need to change and amend the existing framework of protecting the interest and rights of consumers. The Consumer Protection Bill, 2018, which seeks to replace the long existing Consumer Protection Act of 1986, was introduced in the Lok Sabha on 5 January 2018 and was passed by the Lok Sabha on December 20, 2018. The Lok Sabha on July 30, 2019 again passed the Consumer Protection Bill 2019 after due consideration and discussion. The Rajya Sabha on August 6, 2019 passed the Consumer Protection Bill, 2019. The Bill has focused on enforcing the consumer rights along with timely and effective administration of consumer disputes.

Key Highlights of the Bill with reference to E-Commerce:

a) The ambit of the existing Act covers goods and services for consideration excluding free and personal services. The Bill will widen the ambit of the existing Act to cover and regulate goods and services, including telecom and housing construction, and all modes of transactions (online, teleshopping, etc.) for consideration. New concepts such as 'product liability' will address the changing dynamics of the consumer markets.
b) Inclusion of certain new definitions such as **'E-Commerce'**, will broaden the scope of the Act to include the e-commerce sector, which the existing Act does not cover. Interestingly, the explanation attached to the definition of "consumer" has been worded in a way to include the consumers who buys goods or avails services through online platforms such as Airbnb, Quikr and Flipkart.
c) The Bill will govern the consumers of e-commerce platforms along with the traditional consumer who buys or avails goods and services from brick and mortar stores.
d) The Bill provides an option to the complainant to file the complaint electronically and to approach the consumer dispute redressal authorities from the place of his residence or business.
e) The existing Act has no provision in relation to 'product liability'. The Bill introduces the concept of 'product liability' which allows a complainant to make a claim of product liability against a product manufacturer or service provider for any deficiency in a service or defect in the product.
f) The Bill introduces provisions which enable mediation to be an alternate remedy. The resolution of consumer disputes through mediation will substantially reduce the burden on the consumer disputes redressed authorities and will make the dispute resolution process less cumbersome.
g) The Bill contains a provision which imposes penalty on the manufacturer or service provider who causes a false or misleading advertisement to be made which is prejudicial to the interest of the consumers.

6. DRAWBACKS OF E-COMMERCE

We see electronic commerce as a profoundly pro-consumer development. It offers consumers a range and variety of products, and a source of relevant information with which consumers can protect their own interests, that surpasses anything Indians have experienced before. As every coin has a flip side, similarly all drastic economic developments have their potential downsides:

1. The Internet has become a fertile field for fraud. Any fraudulent activity can be carried out easily on internet. It acts as a platform for the promoters of fraud to mimic legitimate business more convincingly, reach potential 'victims' easily, escape detection by being anonymous, and annoy officials of enforcement board by locating (or relocating when discovered) in remote jurisdiction that has no appropriate law or no stern enforcement.

2. The technology of the Internet i.e. its capacity of collecting and sorting vast amount of information, sometimes without the knowledge of the e-consumer is acting as a new and potential threat to traditional values of privacy.

3. Because e-commerce does not acknowledge any borders, and lack of coordination and cooperation in enforcement of international law enforcement, it becomes very important to protect consumers and protect the medium.

4. Finally, there is another aspect which must not be neglected. The e-commerce revolution may lead to widening of the gap between nations, states and the haves and have not's. As we

rejoice the promise of introduction of the digital revolution, we must also acknowledge the threats posed by it to welfare of individuals and to the stability of international order.

Challenges for the e-Commerce”

Certain challenges accompany the exceptional development of the e-Commerce industry. These challenges can be enumerated as follows:

- Absence of e-Commerce laws
- Less barriers to entry resulting in decrease in competitive advantages
- Fast changing business models
- Urban phenomenon
- Shortage of manpower
- Customer loyalty

Opportunities for the e-commerce:

- Decrease in cash transactions in all sectors
- Improvement of Net banking facilities across the country
- Implementation of demonetization policy
- Government policies on banking and financial sectors

7. MEASURES FOR THE PROTECTION OF E-CONSUMERS

In this electronic age, there is a dire need for protecting the interest of the consumers. The following areas are of much importance and such be emphasized upon to protect the e-consumers effectively.

1. Correct Information

An informed consumer is self sufficient to look after her/his own interests than an uninformed consumer. Appropriate and accurate information about the product becomes essential for e-consumers. This information helps them to evaluate the risk and benefit criterion of entering into a particular transaction. If the consumer is already aware of such information, then there will not be unnecessary disappointments; hence subsequent disputes can be avoided.

Appropriate information on the products acts as a substitute for the real-life ‘touch-and-feel’ that occurs during offline transactions. Therefore, legal regulations which require the e-retailers to present complete information about their products, the sales process, etc. are not predominantly strenuous for the e-retailers. The e-retailers must provide complete information about the following aspects:

- **E-Retailer-** The identity, physical location, telephone number, e-mail address, contact details, place of registration etc. must be provide to the e-consumer. This helps the e-consumer to check the reliability of the e-retailer.
- **Product:** E-retailer must provide an accurate, relevant, appropriate and detailed, description of the product, its characteristics, limitations, uses, compatibility, as well as the need for services and maintenance, the price of the product, including applicable taxes and surcharges, all costs itemized, the applicable currency, guarantees and warranties, any after-sales services.

- **Sales Process:** The rules which govern the sales process are very difficult for any consumer to comprehend. E-retailers should provide information about the sales process like the technical steps to be followed to carry out a transaction, about the security measures applied to the transaction, the rights of both the parties to retract, terminate or cancel the order, possibility and policy of exchange and returns, as well as applicable refund, the delivery method and lead time, order tracking system, payment process etc.
- **Terms of the Contract:** Sellers must disclose the terms of the contract to the consumers. These terms and conditions must be stated in simple, unambiguous and clear language.
- **Information about the use of Consumer's Personal Data:** the e-sellers must be required to provide information about the method which the seller uses to collect the data, about the safety of the data, which all will have access to the data etc.
- **Confirmation of the Transaction:** E-retailers must provide consumers with a quick confirmation of the transaction as soon as the order has been placed. The confirmation must include the information regarding the acceptance of the order and expected delivery time. Additionally, the confirmation should be printable and possible to store in electronic form.

2. Fair Contracts

Some consumers do not consider the terms and conditions to be legally binding and most of them are not educated enough to understand the importance and implication of the terms of the contracts they are entering into. Knowingly or unknowingly, they depend upon the legal system for protection against unfair contractual clauses.

Many standard contracts contain complex legal clauses, such as choice of forum clauses and exclusion clauses which may be difficult of the e-consumers to understand completely. As a result, they generally do not read the terms and conditions of the contracts they enter into.

3. Adequate Regulation of Unconscionable Conduct

Satisfactory consumer protection regulations must adequately protect consumers against unconscionable conduct by sellers. An additional concern arises regarding the lack of power in the hands of consumers for negotiating terms.

- It should be ensured that e-sellers do not use sales processes that confuse consumers into accepting unreasonable terms.
- Consumer protection should contain special rules protecting consumers who have limited legal capacity and their guardians.

4. Adequate Regulation of Product Quality and Suitability

The sold products must meet adequate quality and safety standards. If the consumer has mentioned the purpose for which a product has to be used then, e-retailer should only deliver products suitable for the purpose described by the consumer. Also, products provided must correspond with any descriptions provided by the retailer.

5. Cancellation/Return/Refund Policies

Merchants should provide information to consumers about their policies related to cancellation of an order, return of the product, and refund, including the time after which an available cancellation, return, or refund can be done after entering into a binding obligation. If there is no such policy then it must be stated prior to completion of the transaction.

6. Fair Dispute Resolution

A multi-facetted approach is required for ensuring a fair resolution of a dispute between an e-consumer and an e-retailer. Law should provide them with fair, timely, and affordable means of settling disputes and obtaining redress. Therefore, it must endow consumers with a realistic approach to take legal action against the seller or service provider, but with the alternative or prior step of a more appropriate dispute resolution system.

- First, to be effective, a consumer protection scheme must ensure that the consumer, in an e-commerce transaction, must be able to take legal action at her/his place of residence or domicile.
- Second, the consumer in an e-commerce transaction should always be allowed to rely upon the consumer protection provided by their country of residence or domicile.

An adequate access to advice and assistance where they can take legal action is essential for consumers. This requirement can be satisfied by a governmental department or agency working with consumer protection questions. Alternative Dispute Resolution System is becoming popular nowadays. It has been adopted by corporate houses to resolve their disputes outside courts with less strict rules and lower costs. The provision for ADR system should also be encouraged by legislation protection e-consumers right.

FUTURE SCOPE OF THE STUDY:

There is high scope of e-commerce in each aspect of business, at present it is in the embryonic stage but in future e-commerce would be the part of day to day activity of business firms. In future study can be carried out on impact of e-commerce on traditional market and then its overall impact on Indian Economy. Future study may also include how government initiatives like ‘Digital India’, ‘Start-up India’ and ‘Make in India’ have significantly contributing to the growth of the e-commerce?

8. CONCLUSION

The problem of consumer protection with respect to e-commerce has attracted a huge amount of attention both from policy-makers and academicians. The governments as well as inter-governmental organizations have come up with various frameworks to deal with e-commerce and e-consumers.

India is in need of consolidating the law to deal with all problems so that the rights of e-consumer can be protected properly. In view of the changed circumstances, the Consumer Protection Bill of 2019, to replace the existing Act of 1986, was tabled before the Lok Sabha on Friday 5, 2018 and was passed by the Lok Sabha on July 30, 2019 and then The Rajya Sabha on August 6, 2019 passed the Consumer Protection Bill, 2019. E-commerce would be covered under the new Consumer Protection Act. This would provide legal support to aggrieved consumers of the online segment.

A young demographic profile, rising internet penetration and relative better economic performance are the key drivers of this sector. Since 2014, the Government of India has announced various initiatives namely, Digital India, Make in India, Start-up India, Skill India and Innovation Fund. The timely and effective implementation of such programs will likely support the e-commerce growth in the country. The Government of India's policies and regulatory frameworks such as 100 per cent foreign direct investment (FDI) in B2B e-commerce and 100 per cent FDI under automatic route under the market place model of B2C e-commerce are expected to further propel growth in the sectors. In February 2019, the Government of India has also released the Draft National e-Commerce Policy which encourages FDI in the marketplace model of e-commerce.

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EXAMINING THE GROWTH OF SOCIAL ENTREPRENEURSHIP IN INDIA: A REVIEW OF PROCESSES AND INITIATIVES

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ABSTRACT

The philosophy of social entrepreneurship is very much useful as it contributes to environmental sustainability; promotes gender equality; improves health; imparts vocational skills etc. It is connected with CSR that has come a long way in India. From responsive activities to sustainable initiatives, corporate have exhibited their ability to make a significant difference in society and improve the overall quality of life. In the current social situation in India, it is difficult for one single entity to bring about change, as the scale is enormous. Corporate have the expertise, strategic thinking, manpower and money to facilitate extensive social change. Effective partnerships between Corporate, NGOs and the Government will place India's social development on a faster track and this will ultimately prove beneficial for Corporate itself. Today, CSR in India has gone beyond merely charity and donations and is approached in a more organized fashion. It has become an integral part of the corporate strategy. Companies have CSR teams that devise specific policies, strategies and goals for their CSR programs and set aside budgets to support them. Under the social responsibilities of entrepreneurship, the employees become the backbone of these initiatives and volunteer their time and contribute their skills, to implement them. CSR Programs could range from the overall development of a community to supporting specific causes like education, environment, healthcare etc.The objective of this paper is to critically explore processes and initiatives taken for the growth of social entrepreneurship in India and to examine the development of the community through CSR and entrepreneurship.

Keywords: *Entrepreneurship, CSR, Community, Wellbeing*

1. INTRODUCTION

A critical concept that had developed over the years within the field of entrepreneurship is "social entrepreneurship." However, unlike entrepreneurship which is a well-defined concept, the area of social entrepreneurship has not been the core focus of entrepreneurial research. Social entrepreneurship goes beyond the realm of philanthropy and can be studied as a concept which has a deeper impact on social change, particularly in developing countries. Social entrepreneurship can, therefore, be defined as "a process of recognizing and resourcefully pursuing opportunities to create social value for society."[1] It may also be defined as "the recognition of a social problem and the uses of entrepreneurial principles to organize, create and manage a social venture to achieve a desired social change."[2]

In the past, most of the studies carried out in this area were outside the gamut of entrepreneurship and have been done by social scientists and not experts who belong to the field of entrepreneurship. The research focused primarily on case studies and success stories, and not on processes and theorization, but in recent times, there is an ever-increasing interest both among academics and practitioners who have attempted to understand social entrepreneurship as an academic discipline. [3] The area became popular in the 1970s and 1980s but it gained momentum in the West only in the 1990s.

In the context of India, social entrepreneurship has a short history. However, many new social entrepreneurs have made a mark in the field. In this paper, an attempt will be made to understand the development of social entrepreneurship as a niche area and also analyze the processes of social entrepreneurship. The paper will focus on some case studies and explore the ever-growing world of social entrepreneurship in India. It shall also examine the impact of social entrepreneurship on Indian society.

Social entrepreneurship as a phenomenon has received attention from policymakers, opinion leaders and academic researchers in the past. The term 'social entrepreneur' and 'social entrepreneurship' began to be used vaguely in the 1960s and early 1970s, however,it was only in the 1980s and 1990s that the terms gained prominence. A key role in popularizing the concept of social entrepreneurship was played by Bill Drayton, the founder of Ashoka, a leading conglomerate of world entrepreneurs. Charles Leadbeater was another person associated with the institution of social entrepreneurship. Prof. David Gergen described social entrepreneurs as "new engines of reform."

Social entrepreneurship goes beyond the realm of philanthropy and can be studied as a concept which has a deeper impact on social change, particularly in developing countries. It continues to be a significant area of research; however, it has been observed that though a lot of studies have been done in this area, there are many gaps which need to be addressed. The first gap which necessitates further research is the very definition of the word 'social entrepreneurship.' According to Fowler, "social entrepreneurship is the creation of viable socio-economic structures, relations, institutions, organizations, and practices that yield and sustain social benefits."[4]In the opinion of Alvord, Brown and Letts, "social entrepreneurship is a process which creates innovative solutions to immediate social problems and mobilizes the ideas, capacities, resources, and social arrangements required for sustainable social transformations." [5] Mair and Marti have defined social entrepreneurship as "a process involving innovative use and combination of resources to pursue opportunities to catalyze social change and/or address social needs."[6]

After considering the definitions postulated by scholars, it needs to be reiterated that social entrepreneurship means different things to different scholars, depending upon the geographical and cultural contexts. Despite various definitions, a standardized definition of what constitutes the parameters of social entrepreneurship had not developed so far. However, there is a considerable consensus among scholars that the bottom line in social entrepreneurship is achieving social impact, on the other hand, the bottom line in business entrepreneurship is achieving maximum profit. A generic definition of the term would, therefore, not be possible to describe the complexities of the institution per se, however, for purposes of simplification, it may be largely understood as "entrepreneurship with a social purpose." In this paper, the broad definition of social entrepreneurship shall be used as a reference point.

Another gap area concerns the different schools of thought. These schools of thought are restricted to the American and European models and are, therefore, not inclusive in nature.

The figure given below briefly outlines the various schools of thought that have shaped the general understanding of social entrepreneurship.

Innovative School of Thought	•Social Entreprenuers as individuals who tackle social problems •Meet social needs in an innovative manner
Social Enterprise School of Thought	•Main focus in on the enterprise which generates income •This enterprise also has a social mission
EMES* Approach	•Main focus on the growth of social entrepreneurship in Europe •Benefit to the community is a critical component
UK Approach	•Businesses must have social objectives •The aim to maximize profits is secondary

Figure 1: Social Entrepreneurship- School of Thought

An analysis of the approaches given above is adequate to interpret that theorization in the area of social entrepreneurship is largely restricted to America and Europe. Some of the path-breaking social entrepreneurship innovations have happened in the developing world, however, the theoretical narrative has largely been restricted to the western models. This paper aims to focus on the growth of social entrepreneurship in India and identify the processes that drive social entrepreneurship in a developing country like India. The paper also aims to look at the institution from a specifically Indian perspective and analyze some best practices. There is also a need to study the impact of social entrepreneurship incubators in the Indian context, and this paper shall attempt to analyze their social impact. The number of young social entrepreneurs in India are increasing at a rapid pace, therefore, it is essential to study the footprints of their work. In this paper, a brief analysis of the work of some budding social entrepreneurs shall also be made.

2. LITERATURE REVIEW

Social entrepreneurship may have developed as a distinct area of entrepreneurship only in the 1980s, however, in the context of India, it has a long history. The Swadeshi movement started by Mahatma Gandhi as a protest against foreign-made goods spearheaded the rejuvenation of cottage industries. The clarion call for Swadeshi was a way to dissuade people from using British-made goods. The British strategy of flooding the Indian markets with their goods and using India as a supplier of raw materials suffered a great setback as a result of the Swadeshi movement. This movement also aimed at protecting and safeguarding India's ancient wisdom. It also promoted the skills of Indian craftsmen and, thereby, helped in enhancing their creativity and productivity. The movement was unique in many ways and helped in creating a sustainable economy in rural areas. The Swadeshi movement can, therefore, be called the first step towards social entrepreneurship in India. In most of the cases, entrepreneurship leads to fulfilling the legal Responsibilities, Ethical Responsibilities, Philanthropic Responsibilities etc. India`s new Companies Act 2013 (Companies Act) has introduced several new provisions which change the face of Indian corporate business" Companies Act 2013 (Companies Act) has introduced several new provisions which change the face of Indian corporate business. One of such new provisions is Corporate Social Responsibility (CSR). The concept of CSR rests on the ideology of giving and take. Companies take resources in the form of raw materials, human resources etc from society. By performing the task of CSR activities, the companies are giving something back to society. The Ministry of Corporate

Affairs has recently notified Section 135 and Schedule VII of the Companies Act as well as the provisions of the Companies (Corporate Social Responsibility Policy) Rules, 2014 (CRS Rules) which has come into effect from 1 April 2014.

Shri VinobaBhave, the founder of the Bhudan movement, is also considered to be a social entrepreneur. An advocate of non-violence and human rights, Acharya VinobaBhave is credited to have started the Bhudan movement in 1951 from the Nalgonda district of present-day Telangana. During this movement, many acres of land were taken away from the rich landowners and distributed among the poor peasants who were free to cultivate the land in the manner in which they deemed fit. Later, Bhave also started Gramdan in which entire villages were donated to the landless peasants. Acharya VinobaBhave'sexemplary efforts in uplifting the poor peasants can, therefore, be categorized as social entrepreneurship.

The establishment of Anand Milk Union Ltd (Amul) in 1946 was a historic step. Spearheaded by Dr. VergheseKurien, it is considered to be one of the finest models of the co-operative industry in India. Apart from spurring the White Revolution and making India the largest producer of milk and milk products in the world, Amul also played a key role in the development of rural economy in an around Anand in Gujarat. Amul can, therefore, be considered as a landmark in the history of social entrepreneurship in India.

It would be pertinent to note that Ashoka: Innovators for the Public had listed 2145 social entrepreneurs in the world in 2010. Out of this, 238 social entrepreneurs were from India. The first social entrepreneur to be listed was Dr. Sudarshan, founder of Karuna Trust. He was nominated to the list in the year 1982. With such a large number of social entrepreneurs, India becomes a hub for promoting social entrepreneurial activities in various fields.

Key Areas of Social Investment in India

To understand the processes of social entrepreneurship in India, it is imperative to understand the key areas of social investment in India. The figure given below shows the four key areas in which social entrepreneurs invest their funds.

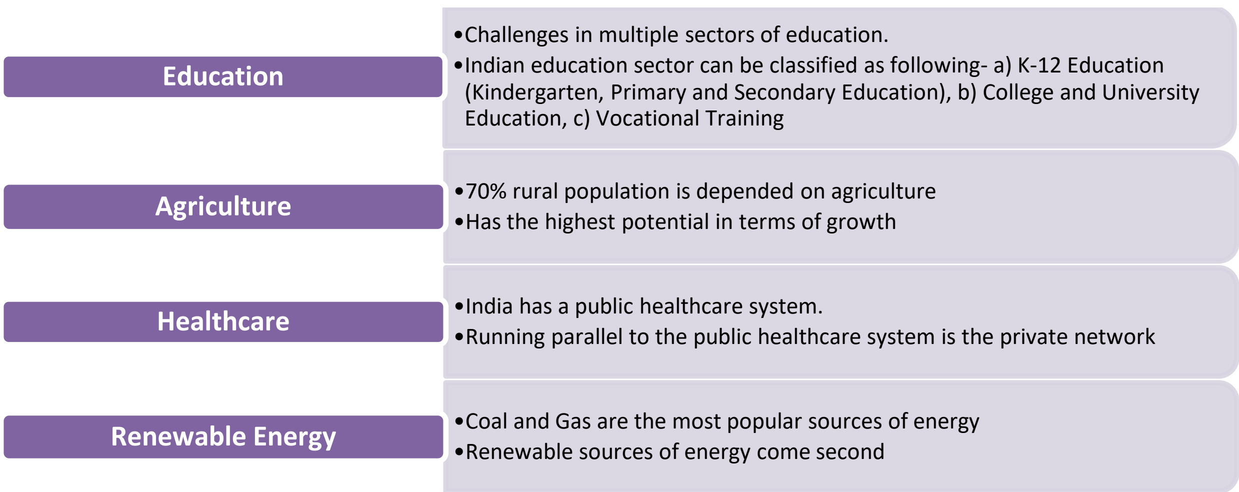

Figure 2: Social Entrepreneurship- Key Areas

Many social entrepreneurs are engaged in extending education to rural areas. A case in point is Urvashi Sahni. Founder of Study Hall Education Foundation, Urvashi Sahni has dedicated her life to providing education to underprivileged girls in India. To take her mission forward she has collaborated with almost 1000 schools and has directly and indirectly impacted the lives of over 3 lakh girls all across the country.

The renewable energy sector has also seen a significant rise in investments from social entrepreneurs. CEO and Founder of Selco, Harish Hande is considered to be a pioneer in the field of social entrepreneurship in India. His company provides sustainable energy solutions in rural areas. Another example is Ajaita Shah, the founder and CEO of Frontier Markets which supplies solar energy solutions to rural India. The company aims at providing solar lighting to the remotest parts of India.

In terms of healthcare, the contribution of JerooBillmoria in the area of child healthcare is considerable. A renowned social entrepreneur, JerooBillmoria is the founder of Childline, an organization which provides healthcare and police assistance to street children.

Social Incubators Facilitating Social Entrepreneurship

UnLtd India: It is a launch pad for individuals who want to translate their ideas into long-term goals for solving India's socio-economic problems. The mission of UnLtd India is to find and nurture new social entrepreneurs who can, in the long run, build high-impact organizations and serves as catalysts of change. The company incubates social entrepreneurship in varied sectors- education, livelihoods, agriculture, healthcare, sports, environment, gender equality, renewable energy, water and sanitation, inclusive development, housing, and financial inclusion.

The figure given below maps the impact of UnLtd India in terms of its efforts in incubating social entrepreneurship.

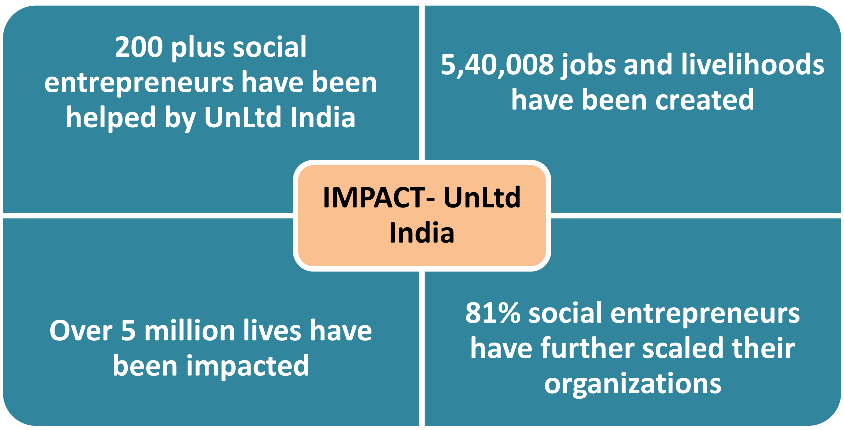

Figure 3: Impact of UnLtd India

Villgro: It is one of India's largest and oldest social enterprise incubators.It is a technology business incubator approved by the Government of India.It incubates early –stage social enterprises in the areas of health, education, agriculture, energy sector, among others. The impact of Villgro India is given in the figure below.

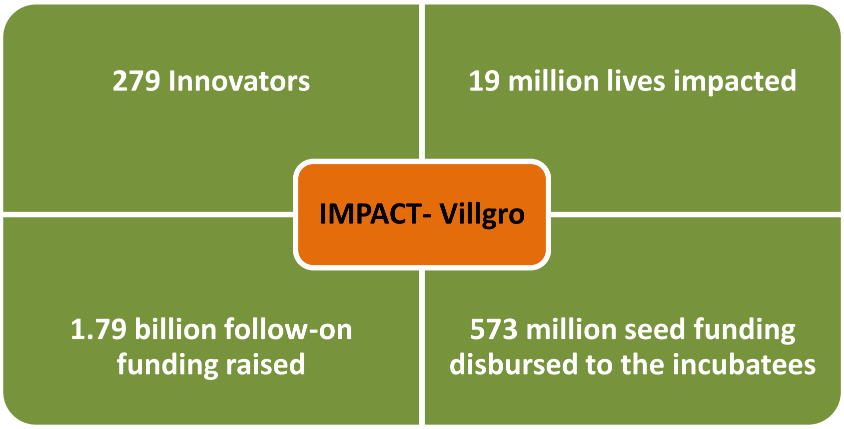

Figure 4: Impact of Villgro

Action for India: Established in 2012, Action for India aims at achieving a high level of social impact. It supports social entrepreneurs to identify and achieve key targets in the areas of affordable and quality education, access to water and sanitation facilities, improved agricultural practices, access to quality healthcare, and creation of employment through effective skill development.

Upaya Social Ventures: This organization works in the field of poverty alleviation for the poorest of the poor. Their mission is to build scalable businesses with investment and support for impacting the lives poor particularly in rural areas. Till date, Upaya has been able to successfully created 13,000 jobs for the poor.

Dasra: Established in 1999, Dasra has incubated many successful social impact ventures, including Magic Bus. The main aim of the organization is to act as a catalyst by focusing on collaborative action to accelerate social change. The organization, therefore, focuses on collaborations to nurture competence, foster a trust-based network of stakeholders, lead a philanthropy movement, and deepen its social impact.

Rural Technology and Business Incubator: Developed by IIT Madras in 2006, the RTBI is a not-for-profit society with a mission to incubate start-ups which focus on rural development. RTBI follows a two-pronged model as far as social enterprise incubation is concerned—a) identify ways and means to strengthen social entrepreneurs with effective business models to innovate low-cost and relevant products and services; b) develop an understanding of the underserved segments of society via grass root trials in areas such as education, healthcare, livelihood, agriculture, and financial inclusion.

The Brigade of Young Social Entrepreneurs

1. **Sharad VivekSagar**: Founder of Dexterity Global, Sharad VivekSagar is a budding social entrepreneur with a mission to uplift children from the most remote parts of the country. He started at the age of 16 and within a span of ten years, he has been able to provide the best opportunities to over 1.2 million children.

2. **Ria Sharma**: The founder of Make Love Not Scars, Ria Sharma, runs a crowd-funded organization to support acid attack victims. Her organization also helps in the economic upliftment of these victims and pleads different organizations to hire them.

3. **KarthikNaralasetty**: He started a social venture called social blood, an organization which connects blood donors through social media. Social blood has partnered with several blood banks and has served lakhs of people.

4. **AarushiBatra**: Founder of the Robinhood Army, AarushiBatra, started with the aim to feed as many mouths as possible. Spread across 60 cities, the foundation feeds the underprivileged with surplus food. The volunteers associated with the foundation collect surplus food from restaurants, weddings, canteens, etc, package it hygienically and redistribute is among the poor and needy.

5. **Nivesh Raj**: He is the founder of Step Up For Healthy India., an organization which invests in providing better health and sanitation facilities to the underprivileged.

3. CONCLUSION

Social entrepreneurship is well-established in India and many entrepreneurs are engaged in creating social impact through responsible investment. The sector has seen a tremendous rise in the past couple of years with incubators successfully incubating the business models of many social entrepreneurs. The incubatees have also benefitted tremendously from the help rendered by the incubators who have played a critical role in promoting social entrepreneurship in India. Some young social entrepreneurs have taken up causes meaningful causes and have also scaled up their organizations to contribute effectively to socio-economic regeneration. Social entrepreneurship in India, therefore, presents a successful case.

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FOCUS ON DISASTER MANAGEMENT A NECESSITY FOR SUSTAINABLE ECONOMIC GROWTH : A CASE OF INDIA

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ABSTRACT

India is one of the world's major theatres of disasters both natural and human made types. Floods, droughts cyclones, and earthquakes are the part of every year headlines. Conflicts, Fires epidemics, communal riots and other disasters aggravate the problem of our country. The economical and social progress achieved over the years by us, and advancement in infrastructural development, are significantly affected and degraded by disasters. Urbanization, industrialization, globalization and liberalization of economy all have influenced human life. People continue to live in disaster–prone areas due to limitation of land resource, high prices of land and construction of buildings, poverty, migration and non-regulation of urban housing constructions. Even, the natural protection measures are neglected to pave the way for economic development. The government of India through various stake–holding agencies are doing their best efforts to meet the pinches as an outcome of natural disasters. It is, however, felt that all these efforts and eventuality plans focuses on the post disaster situation. A half–backed approach is adopted for preventing the occurrence of disasters. There is need for fundamental change in national disaster policy itself.

The hill areas are more prone to severe earthquakes, landslides. In addition, various states of country are also affected by disaster like floods, epidemics, fire, hailstorm, lightening, road accidents, etc. Some states are highly vulnerable to multi–hazards viz. earthquake, landslides, flash–floods, avalanches, Dam Burst, drought. It is with this background in mind, the present paper purports to analyze major threats which the country is suffering from the will also focus on the areas of concern where a lot can be done to improve the situation.

Keywords : *Disasters, Urbanization, industrialization, government policies.*

1. INTRODUCTION

The term disaster owns its origin to the French World '*Desastre*" which refers to great loss and misfortune. A disaster can be defined as “a serious disturbance in the functioning of the mankind or the whole society resulting into widespread economic, material, environmental or social losses which crosses the limit and the ability of the affected people to cope up using its own resources and manpower”. A combined effect of hazard, vulnerability and insufficient capacity or measures to reduce the potential changes of risk results into disaster. India is one of the world's major theatres of disasters and both natural and human made. Floods, droughts cyclones, and earthquakes are the part of every year headlines. Conflicts, fires, epidemics, communal riots and other disasters intensify the chronic troubles of our country. The efforts made to achieve social and economic development over period of time, and approaching towards physical development, can be significantly wasted and damaged by disasters. Urbanization, industrialization, globalization and liberalization of economy all have influenced human life. People continue to live in disaster–prone areas due to limitation of land resource, high prices of land and construction of buildings, poverty, migration and non-regulation of urban housing constructions. Even, the natural protection measures are neglected to pave the way for economic development. Indian government with the help of various stake-holding authorities has been making all their efforts to minimize the losses as arisen by natural disasters. However, it is experienced that all the efforts made and plans for contingencies roam around the post disaster situation. A half–backed approach is adopted for preventing the occurrence of disasters. There is need for fundamental change in national disaster policy itself. The community needs to be plan and implement the disaster management programmes associated at all levels. The Indian sub-continent rests between the Indian plate which is moving northward and clashes with the Eurasian Plate. Due to this collision, the Himalayas are brought forth in the process. This is the major causal effect of earthquakes from Himalaya regions to the Arakan Yoma. Due to the same process, it results in earthquakes in Andaman and Nicobar Islands. Sometimes earthquakes of different magnitudes occur within the Indian Plate. As per the latest seismic zoning map of India, the country is divided into four Seismic Zones. Zone V marked in red shows the area of very high risk zone, Zone IV marked in orange shows the area of high risk zone, Zone III marked in yellow shows the region of moderate risk zone and Zone II marked in blue shows the region of low risk zone. Zone V is the most endangered to earthquakes, where we have witnessed some of the most powerful shocks of the country has occurred. As per India's Seismic Vulnerability Atlas, 58 cities of India fall within seismic vulnerability Zones. Out of which 13 cities are located in Zone V, 16 Cities in Zone IV and 29 cities are situated in Zone III. Geographically, Zone V includes the Andaman and Nicobar Islands, all parts of North Eastern India, parts of north western Bihar, eastern parts of Uttaranchal, Kangra Valley in Himachal Pradesh, Srinagar area in Jammu and Kashmir and Rann of Kutchh in Gujarat. Earthquakes with magnitudes in excess of 7.0 have occurred in these areas. Most of the earthquakes which occurred were rated at 5-6 scale (60 per cent) while more than one third earthquakes were in between 6-7 Richter scale. Again, about half of the earthquakes have occurred in North East India alone. During the earthquakes, majority of losses is due to collapse of buildings and damage to infrastructure. More than half of the houses are built with stone walls and 35 per cent have burnt brick units which are highly vulnerable to sustain damage of seismic intensities namely VII, VIII and IX.

Tsunami tragedy in the Indian Ocean was one of the biggest natural disasters in recent times. More than 200,000 individuals died and more than 1.5 million individuals lost their shelters and their bread and butter. If the earthquake is under water and land movement is near the coast then tsunami may strike suddenly and if the earth movement is far in the sea then it may take few minutes to hours before striking the coast. The onset is extensive and often very destructive. The general causes of tsunamis are geological movements. Cyclonic disturbances of varying intensities originate in the Bay of Bengal and the Arabian Sea mainly during the April–December period. A scrutiny of cyclones in nearly 100 years (1891-1989) reveals that a few districts were hit by cyclones more often than other districts. The cyclone of 1977 caused death toll of over 14000 while recent cyclone in December 2000 severely hit three districts of Tamil Nadu. The plantation at the coastal belt (green belt plantation along the coastal line using a scientific interweaving method) can minimize the adverse impact of hazards of cyclone, tsunami, and flood. However, the frequent cutting of plants, trees and clearance of forest and mangroves, the cyclone and tsunami waves trend freely in land. The deficiency of protective forest cover allows water to immediate in a bigger areas and cause devastation. Thus, community–based mitigation strategies are to be introduced. Floods are a recurring phenomenon in chronically flood prone regions in India. Floods affect around 7.56 million hectares of area (2.30 per cent of country's area) and 3.3 million hectares of crop lands every year (4 per cent of the cropped area). Eastern India, comprising Uttar Pradesh, Bihar, West Bengal, Assam, and Orissa account for about 70 per cent of the flood impacts in the country.

A programme including every aspects of earthquake have been taken up in order to mitigate the risk of earthquake. The construction of buildings in urban and sub–urban areas is highly regulated and controlled by Town and Country Planning Acts and Building Regulations. A National Core Group for Earthquake Risk Mitigation has been constituted consisting of experts in earthquake engineering and administration. Review of Building byelaws and Adoption is being insured by various state Governments. A National Programme for Capacity Building of Engineers and Architects in Earthquake Risk Mitigation has been implemented by the Central Government. Training for rural masons for construction of earthquake resistance buildings and houses is being provided under UNDP – Government of India, Disaster Management Programme in various States. Retrofitting of lifeline buildings is also been insured by the State Governments. An Earthquake Mitigation Project has been drawn with an estimated cost of Rs. 1132 crores. The programme includes training of masons in earthquake resistance constructions and adopting techno-legal regimes by state governments. Accelerated Urban Earthquake Vulnerability Reduction Programme has been taken in 38 cities in Seismic Zone III, IV and V in a population of half a million and above. Training Programmes have been organized for engineers and architects to impart knowledge about seismically safe construction and implementation of Bureau of Indian Standards Norms. A National Cyclone Mitigation Project with cost of Rs. 1050 crores have been drawn up in the states where cyclone hits more. The project recommends the construction of cyclone shelters, plantation in coastal shelter belt, making warning systems more effective, and providing education and training to the people about it etc. A Disaster Risk Management Programme has been taken in 169 districts in 17 multi hazards state prone with assistance from UNDP, USAID and European Union. Importantly, Disaster Management Faculties have already been created in Administrative Training Institutes located in 28 districts. Disaster Management as a subject in social sciences has been introduced in school curriculum for classes VIII and IX. Besides, 8 battalions of Disaster Risk Response have been created for providing prompt response during disasters. In order to provide training and knowledge for prevention, mitigation, response of disaster as well as rehabilitation and reconstruction of affected persons and areas, academic institutions have been established with financial assistance from government. However, disaster management required multi–disciplinary and pro–active approach.

2. REVIEW OF LITERATURE

Ever since, Yokohama Convention in May 1994, there has been complete shift in the designing the strategy for disaster management and mitigation. The earthquake in Gujarat in 2001 called for involvement and participation of local governments in mitigation and response of disaster risk and therefore, a few studies have been conducted which highlight the various dimensions and perspectives of disaster management mainly related with planning for mitigation, response, rehabilitation and reconstruction. However, there is paucity of empirical data and literature on the role of local government in disaster mitigation and management.

Kapur, et al. (2005), in their book on “Disasters in India” presented the grim realities in the context of natural disasters in India. They maintained that disasters freely roam and reign in India. Goel & Kumar (2001) in their edited volume on “Disaster Management” maintained that natural disasters are a part of the environment in which we live. Sahu & Mahapatra (2004) in their book on “Post-Disaster Management of Super Cyclone” brought out to the fore the suffering and agony of the people of Orissa living in coastal belts after the super cyclone. Murthy (2007) in his book on “Disaster Management” has attempted to bridge the gap in the availability of information on disasters. It spelt out the need for better disaster management that would bring relief immediately to the victims of the tragedy. Swain, et. al. (2006) in their book on "Disaster & Gender" concluded that continuing absence of gender focus in disaster management, especially in relief interventions, reinforces gender and class biases. At the same time, disasters sometimes not only produces disruptive and disorganizing effects but also generates reconstructive and regenerative human responses, which help in creating a more equitable society. Hence, there is need to create gender awareness among policy makers, civil society organizations, donor agencies and those working to protect people from the effects of disasters to understand women's vulnerability and use disaster management efforts to enhance their capabilities to establish a gender equal society. Taori (2005) in his book on "Disaster Management Through Panchayati Raj" has attempted to examine the role of Panchayati Raj in disaster management with special reference to India. Based on a study under the aegis of Indian Institute of Public Administration, New Delhi, he discussed at length the challenges of disaster management and alternatives for sustainable human development. Singh (2006) in his edited volume on "Natural Hazards & Disaster Management" has mentioned that with the mass construction of human settlements in disaster prone areas due to rapid population growth, the majority of these people with their homes have become vulnerable to the natural hazards. There is an increasing recognition of the fact that relief, rehabilitation and other disaster mitigation actions should be coupled with interventions aimed at development. Husain (2006) in his book on "Natural Disaster" said that floods are act of God but acts of man cause flood damage; it is natural for a river to overflow its banks in the event of heavy rain fall in the upper catchments and spill into the floods plains which are basically its domain. It is therefore, necessary to suitably manage the floods with a view to reduce the damage potential and properties, and minimize losses to lives of human and livestock. Gandhi (2007), in his edited volume has remarked disaster management calls forth a fresh approach to disaster and calamity. Sharma & Sharma (2005) in their edited volume maintained that communities face several problems whenever disaster hits. The existing administrative setup is required to swing into relief operations of a magnitude which is not equipped to handle. Arya (2004) in his article examined the role of engineering in earthquake disaster reduction in India. He also analyzed the statistics pertaining to earthquake vulnerability and disasters in Indian sub-continent. Ministry of Home Affairs (2002) prepared a report on disaster management in development perspective. The report examined the current status of natural disasters and their management. Jain (2004) in his article discussed the planning perspective of natural disasters in India. Parsuraman and Unnikrishnan (2000) edited a volume on disasters. Rai & Singh (2006) in their paper on disaster response talked about Tsunami disaster and presented an analysis of reconstruction and rehabilitation of victims and Tsunami effected areas in India. Singh & Singh (2004) in their paper on natural disaster presented an analysis of natural disasters in Indian context and suggested strategies for mitigation of natural disasters. UNDP (2005) presented a recovery framework in support of Government of India for a post-Tsunami rehabilitation and programme.

The above literature reviews simply demonstrate that there is a paucity of pertinent literature and empirical data on function and responsibility of local bodies in natural calamity mitigation and response. In the context of decentralized governance, the role of local governments in disaster management has to be examined and strengthened in order to aware, sensitize and prepare communities for disaster mitigation and response. Thus, the proposed study is expected the fill up the academic gap and will provide an academic interest to the policy makers and administrators for understanding the dynamics of natural disasters and enhancing the role of local government in mitigation and response of natural disasters.

3. OBJECTIVES OF PAPER

The main objectives kept in mind for this paper are listed below

- To review the status, situation, dimensions and trends and the impact of natural disasters on development in India;
- To examine the role of government agencies, NGOs and community–based organizations in disaster mitigation and response;
- To examine the role local governments in natural disaster mitigation and response;
- To suggest policy measures for effective administration of disaster risk mitigation programmes, enhancing role of local governments in disaster mitigation and response, and enhancing their role in disaster management.

4. HAZARDS AND DISASTERS

Hazard may be conceptualized as a dangerous events or conditions that endanger or have the potential for making harm to life or damage to environment or the property. They can be broadly recognized in various ways but, they are basically categorized in two broad heads :

- Natural Hazards (hazards with geological, meteorological, or even biological origin).
- Unnatural Hazards (hazards caused by human beings or because of technological development).

It is also important to know that natural processes are extreme climatologically, geological or hydrological, processes that do not cause any threat to the property or persons. A massive disaster (like earthquake) in an area where there is no population is a natural phenomenon, *not a hazard*. It is when these natural phenomena interact with the man–made environment or fragile areas which causes widespread damage.

Hazards may be classified into two main categories, viz. manmade hazards and natural hazards. Natural hazards are one which are stimulated because of natural phenomenon. Earthquake, tsunamis, volcanic eruption and cyclones are purely of natural origin. Manmade hazards are hazards which mainly occur due to human interference. Manmade hazards are associated with energy generation installations, manufacturing units or include explosions, pollution, dam failure, wars or civil strife, leakage of toxic waste etc. There may be another category which includes floods, drought, fires, landslides are socio–natural hazards since they are caused because of both the factors i.e. manmade and natural.

A disaster is the outcome of a hazard such as flood or wind–storm, earthquake, coinciding with a dangerous situation which might include cities, villages or communities. A disaster happens when hazard impose on the vulnerable population and causes damage, casualties and disruption. It can be said that disaster cannot occur without vulnerability or hazard. A disaster is a combination of hazards and vulnerability. Hence, we can say that hazard, is a dangerous condition that has the potential for causing damage to life or to property or the environment.

There has been increase in the number of natural disasters over the past years, on account of urbanization and population growth; as a result, impact of natural disasters is now felt to a larger extent. According to the United Nations, natural disasters of medium to high range caused at least 1.2 million deaths around the world over last 20 years, and economic losses of around $2.245 trillion. The natural disasters are not bound by political boundaries and have no social or economic considerations. They are borderless as they affect both developing and developed countries. Since 1991, two third of the victims of natural disasters were from developing countries, while just 2 per cent were from highly developed nations. Those living in developing countries and especially those with limited resources tend to be more adversely affected. The continent of Asia is particularly vulnerable to disaster strikes.

There are several important characteristics that make disasters different from accidents. The loss of a sole income earner in a car crash may be a disaster to a family, but only an accident to the community. Variables such as causes, frequency, and duration of the impact, speed of onset, and scope of the impact, destructive potential, and human vulnerability etc. determine the difference.

5. NATURAL DISASTERS IN INDIA

Disasters are defined by the United Nations and the World Bank as a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of affected society to cope on its own resources. All crises or emergency situations are not disasters. The larger ones causing serious disruptions requiring special measures are classified as a distinct category. There has been increased frequency, intensity, magnitude and impact of natural as well as human induced disasters with immense economic and human lives loss. In the second half of the 20th century, about 250 great natural catastrophes have claimed the lives of about 1.4 million people, most of who succumbed to wind–storms or floods. The 1990s alone had 4 times more disasters than in the 1950s and a 15-fold increase in economic losses during the same period (Munich Re Group, 2000). Most of the world worst disasters occur between the tropics of Cancer and Capricorn. Asia being the most affected continent with 39 per cent of the total disasters reported from 1992-2001, accounting for 74.5 per cent of total casualties (IFRC, 2002). India is one of the worst affected natural and human induced disasters. The Indian subcontinent is vulnerable to droughts, floods, cyclones and earthquakes. Landslides, avalanche and forest fires also occur frequently (Table – 1).

Table – 1 : Major Disasters in India Since 1970

S. No.	Disaster	Impact
	Cyclone	
1.	29 October 1971, Orissa	Cyclone and tidal waves killed 10,000 people
2.	19 November 1977 Andhra Pradesh	Cyclone and tidal waves killed 20,000 people
3.	29 and 30 October 1999 Orissa	Cyclone and tidal waves killed 9,000 and 18 million people were affected
	Earthquake	
4.	20 October 1991 Uttarkashi	An earthquake of magnitude 6.6 killed 723 people
5.	30 September 1993 Latur	Approximately 8000 people died and there was a heavy loss to infrastructure
6.	22 May 1997 Jabalpur	39 people dead
7.	29 March 1997, Chamoli	100 people dead
8.	20 January 2001, Bhuj, Gujarat	More than 10,000 dead and heavy loss to infrastructure
	Landslide	

9.	July 1991, Assam	300 people killed, heavy loss to roads and infrastructure
10.	August 1993, Nagaland	500 killed and more than 200 houses destroyed and about 5 kms. Road damaged
11.	18 August 1998, Malpa, Uttarakhand	210 people killed. Villages were washed away
Floods		
12.	1978 Floods in North East India	3,800 people killed and heavy loss to property
13.	1994 Floods in Assam, Arunachal Pradesh, Jammu and Kashmir, Himachal Pradesh, Punjab, Uttar Pradesh, Goa, Kerala and Gujarat	More than 2000 people killed and thousands affected
14.	2004 Tsunami, Coastal areas of Tamil Nadu, Andhra Pradesh, Andaman Nicobar Islands and Pondicherry.	More than 10,000 people were killed and damage of $1068 million to properties.

Source: Natural Hazards and Disaster Management, Text Book in Geography for Class XI CBSC, Delhi.

6. GOVERNMENT POLICY FOR DISASTER MANAGEMENT

Over the past two decades, there has been an increase in disaster occurrences costing human and economic losses. This is due to the ever–increasing vulnerabilities of people to natural disasters. The need is felt to reduce disaster risks by improving capabilities of people and ensuring preparedness, mitigation and response planning processes at various levels. The objective is to look at the entire cycle of disaster management in reducing risk and linking it to developmental planning process. In the past, disasters were viewed as isolated events, responded to by the Governments and various agencies without taking into account the social and economic causes and long–term implication of these events. In short, disasters were considered as emergencies.

The recent disasters and its socio–economic impact on the country at large, and in particular the communities have underscored the need to adopt a multi–dimensional approach involving diverse scientific, engineering, financial and social processes to reduce vulnerability in multi-hazard prone areas. in view of this, the Government of India has brought about a paradigm shift in its approach to disaster management. The change is from "relief and emergency response" to a balanced approach covering all phases of the Disaster Management Cycle. The approach acknowledges disaster management as a part of the development process, and investments in mitigation are perceived to be much more cost effective than relief and rehabilitation expenditure. In this regard, Government of India has taken various initiatives in area of disaster preparedness, mitigation and response through networking of various institutions, institutional capacity building, and policy interventions at all levels.

Community participation and community ownership risk reduction is one of the key factors in reducing vulnerabilities of people and minimizing the loss. The Government of India's focus Community Based Disaster Preparedness (CBDP) approach promotes community involvement and strengthening of their capacities for vulnerability reduction through decentralized planning process. This document deals with the concept, component and some of the best practices in India.

Disaster Management is the responsibility of the states, with the Central Government playing a supportive role. The basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of natural disasters is that of the state governments concern, particularly the district administration. The role of Central Government is supportive in terms of supplementing physical and financial resources and complementary measures in sectors such as warning, transport and inter-state movement of staple foods. Ministry of Home Affairs, Government of India is responsible for coordinating relief operations during natural disasters. The Ministry receives early warnings and forecast from the Indian Meteorological Department and Central Water Commission on a continuing basis. Other Ministries, Departments and Organizations, with primary and secondary functions for disaster management, constitute a Crisis Management Group. A Nodal Officer, nominated from each Ministry or Department, is responsible for preparing a sectoral action plan or emergency support function plan for disaster management. Table – 2 illustrates the disaster management set up at National Level.

Table – 2 : Ministries Responsive For Various Disasters

Disaster Type	**Nodal Ministry**
Natural Disaster & Management (Other than Drought)	Ministry of Home Affairs
Drought Relief	Ministry of Agriculture
Air Accidents	Ministry of Civil Aviation
Railway Accidents	Ministry of Railways
Chemical Disasters	Ministry of Environment & Forests
Biological Disasters	Ministry of Health
Nuclear Disasters	Department of Atomic Energy

The responsibility to cope with natural disasters is essentially that of the state Government. The Chief Secretary of the state heads a state level Committee which is in overall charge of the relief operations in the state and the Relief Commissioners who are in charge of the relief and rehabilitation measures in the wake of natural disasters in their states function under the overall direction and control of the state level Committee. In many states, Secretary, Department of Revenue is also in charge of relief. The district administration is the focal point for implementation of all governmental plans and activities. The administration of relief is the responsibility of the Collector /District Magistrate who exercises coordinating and supervising powers over all departments at the district level.

7. CONCLUSION AND SUGGESTIONS

The Government of India and State Governments through various agencies have been making efforts to meet the exigencies as arisen by natural and manmade disasters. It is, however, experienced that all these efforts and contingency plans concentrate on the post disaster. Thus, it is imperative to prevent and mitigate the disasters, and, also prepare the community and other stakeholders for disaster response, rehabilitation and reconstruction of disasters affected victims and areas. For this purpose few suggestions are listed below which can be taken seriously for mitigating the risk of disaster :

- There should be comprehensive training manuals, handbooks, disaster management plans and other materials encompassing situational analysis of disasters, preventive and risk reduction measures, resources and other vital information in order to provide capacity building to the manpower and representatives of local bodies/civil societies and other stakeholder agencies

- Cultural Eco-Sensitive Zones need to be demarcated and established throughout the hilly regions to ensure the conservation of the rich bio-diversity that the hills are endowed with.
- Well defined policies around disaster mitigation measures, preparedness for a possible disaster, disaster management planning, and active response during the time of disaster are much needed.
- Safest ways of road construction, Micro HEPs, ecology conservation plans, afforestation, irrigation and water requirements – all must be addressed with good policies in hand. Alternative and less destructive ways for these activities should always be searched and invented.
- The major powers should go to village and nagar *panchayats.* This act also gives the chance for local participatory planning and implementation by the people.
- Policies where the locals can be engaged as much as possible have to be planned and implemented. Local generation of energy with alternative energy methods like that of micro-hydel, pine needles, biomass etc. can be a very good step forward.
- Policies encouraging entrepreneurship in the communities must be planned and implemented. Small scale cottage industries of different kind can be a beginning. Water sources can be used to set up various units (eg: water milling, wood carving, wool cleaning, saw milling, wood shaping etc.), which will make them owners of their land and give tremendous job opportunities.
- Policies to train the locals for eco–tourism and adventure guides etc. will also help increase the aspect of service industry. The local training centres can be formed with representations from civil members in order to enroll more and more trainees and ensure smooth functioning.
- There is a need to carry out credible environmental-impact assessment of infrastructure projects like dams, tunnels, blasting, powerhouse, muck disposal, mining, deforestation etc. in these highly ecologically sensitive areas of the country in a scientific manner.
- Disaster prevention, mitigation, preparedness and relief measures along with environmental protection policies are imperative for implementation of sustainable developmental process.
- Technology must be optimally leveraged for a holistic management of disaster in a pro–active manner. These include setting up of robust real time communication network, installation of Early Warning Systems like Automatic Danger Level, Overflow Alarm System using intelligent sensors, especially in areas where flash floods are frequent; Remote Sensing, GPS linked Geographic Information Systems, Virtual Simulations of flood scenarios and use of Social Media.
- Effective implementation of building byelaws be ensured by the state government and the role of local bodies in construction of buildings and infrastructure should be strengthened in order to promote earthquake resistant design and construction of buildings as well as to reduce risk.
- Modern technology coupled with information technology may be adopted for measurement of rainfall and run off data, flood forecasting, warning system and remote sensing. Information technology may be used for dissemination of information on floods to various levels for flood management involving flood mitigation, evacuation and relief measures. A district–wise management information system is a vital necessity.

- Disaster management plans should be developed for cities in vulnerable areas. Separate city plans may be prepared for hazard-prone cities, indicative guidelines and coordination mechanisms need to be incorporated into the respective plans.

To conclude, we understand that politico–administrative will for adopting sustainable development practices which ensure people centred and decentralized development paradigms. There should be inter–state arrangements for sharing of resources for mitigating, preventing and disaster preparedness. For the overall goal of risk reduction, it is useful to divide the communication strategies into three phases: (1) Public awareness (pre-event), (2) Public warning (during the event), (3) Informing and advising the public (immediately following and long-term post-event). In all three phases the media is vital to the communication strategies of disaster agencies and media channels (newspapers, television, radio and increasingly internet or cell phones), providing easy access to a large public.

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IMPLEMENTATION OF BS-VI NORMS: CHALLENGES AND OPPORTUNITIES FOR INDIA'S AUTO INDUSTRY

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ABSTRACT

The greatest market for vehicle manufacturers is in India. But research says that Indian cities rank among the top when it comes to poor quality of air. Some of the other developing countries have already implemented the Euro V emission standards whereas India is still lagging behind in implementing stricter norms when it comes to air pollution. To catch up with the global emission standards, India is expected to come up with BS V emission standards by April 2020.

Considering the negative effects of air pollution on the environment and human health, Implementation of BS VI standards has certainly increased the input cost for vehicle manufacturers as they now have to use better, fuel efficient technology that minimizes the ill effects of air pollutants on the environment.

Every person has a right to a decent environment in India which has been held to be a fundamental right under Article 21 of the Constitution of India, 1950 as amended thereof by the Supreme Court in *Shantistar Builders v. Narayan Khimalal Totame, 1990.*

Therefore, in view of a larger public interest, i.e., the health of citizens of India, the Supreme Court herein has refused to give any extension of the Deadline to comply with BSVI norms and prohibited companies from selling or registering BS-IV compliant vehicles after 01.04.2020.

Automotive vehicles emit several exhaust gases (N2O, CO2, CO etc.) and pollutants (Hydrocarbon HC, Oxides of Sulphur etc.). Emission Standard in India were formulated in 1991, has reached today to direct conversion to BS VI from BS IV norms. Due to less sulphur content in fuel in BS VI is critically analyzed with Bharat stages norms. This decision to leapfrog fuel standards has managed to disrupt Automobile Industry.

This research paper highlights certain norms behind bringing down the levels of pollution in the country and the need of the hour is to implementation of BS VI norms. In this paper, challenges faced by Automobile industries for this conversion based on technical understanding are also discussed with judicial interpretations.

I. INTRODUCTION

The Bharat Stage Emission Standards (BSES) are emission norms instituted by the Indian Government to regulate the emission of air pollutants from motor vehicles. The emission standards under BSES are established by the CPCB (Central pollution Control Board) under the Ministry of Environment & Forests and climate change.

The BSES norms were first introduced in 2000. The Bharat Stage IV norms were enforced in the entire country in April 2017. All vehicles manufactured and sold after April 2017 must be compliant with the BS IV standards.

Though the newly introduced norms can help in bringing down the levels of pollution in the country, the cost of vehicles has seen a slight rise due to use of improved technology and hike in fuel prices. Consequently, it will help people save on the health costs due to lesser volume of harmful pollutants in the air. After the implementation of BS IV norms, the vehicle registering authorities have also been prohibited from registering any vehicle that does not meet the current standards.

The first Indian emission regulations were in active emission limits which became effective in 1989. These in active emission regulations were soon replaced by mass emission limits for both gasoline (1991) and diesel (1992) vehicles, which were gradually tightened during the 1990s.

The emission standards in India discussed in two reports from the Indian Planning Commission in 2000. The National Auto Fuel Policy, initiated on October 6, 2003, envisioned a phased program for introducing Euro 2-4 emission and fuel regulations by 2010. In order to establish limits beyond Bharat Stage IV, the Indian Planning Commission established an Expert Committee in 2013 to draft an updated Auto Fuel Policy, *Auto Fuel Vision and Policy 2025*, that was published in May 2014. While legislators are not required to adhere strictly to the recommendations contained in these reports, they serve as a starting point for subsequent legislative action to establish the implementation schedule and other details of automotive emission standards.

The National Auto Fuel Policy 2003 introduced certain emission requirements for interstate buses with routes originating or terminating in Delhi or the other mentioned cities.

II. HISTORY OF BS / EMISSION NORMS

The BS or Bharat Stage emission norms or standards framed by Indian government to control the levels of air pollutants. In 1991, emission norms were introduced in India, which were further upgraded in 1996. Due to this, most of the vehicle manufacturers had to incorporate technology upgrades like catalytic converters to cut exhaust emissions.

Taking environment into consideration fuel specifications were notified in April 1996 which were to be enforced by year 2000 known by the name of BIS 2000 standards. In 1999, on the orders of Supreme Court BS-I and BS-II were notified by the Indian Government. These standards were nearly equivalent to Euro I and Euro II norms and followed in NCR.

BS-II and BS-III fuel quality norms came into force for 13 major cities in India, and for the rest of the country respectively in April 2005. These action plans were in line with the Auto fuel policy 2013. Thereafter BS-III and BS-IV fuel quality norms came into existence from April 2010 in 13 major cities and the rest of India respectively.

Due to continuous increase of air pollution and a major risk for people life, Government took a decision that the country will switch over directly from BS-IV to BS-VI fuel standards [14, 15] by April 1, 2020. The decision was taken after due consultation with Ministry of Petroleum and National Gas, Department of Heavy industry and Ministry of Environment and Forest.

For skipping BS V and shifting directly to BS VI, both of the emissions reduced technologies. It is a time consuming and money consuming process, but have environmental benefits associated with it. Shifting directly to BS-VI within the specified time limit is a great challenge for the automobile industries in India.[1] Sulphur content is very much lower in BS IV and BS VI as compared to BS III.

Environmental benefits, technology up gradation, its validation and assimilation of the technology by customers are some of the major issues faced by the auto sector. An investment of Rs. 1.5 lakh crore by automotive industry has to be made for up gradation to BS VI by 2020. BS-VI will therefore help in reducing the emission of harmful contents to the atmosphere.

III. JUDICIAL ORDERS

Stricter fuel standards mean lesser air pollution and BS-VI fuel is cleaner and kinder to the environment.

In 2015, severe air pollution in Delhi-NCR leads to a number of Supreme Court rulings that would have significant impacts on the automotive industry.

1) One ruling in late 2015 was that banned the sale of diesel cars in the NCR with engine displacements greater than 2.0 L from January 1 to April 1, 2016.

2) Another ruling in early Jan, 2016 was that the government to advance the implementation of BS VI emission standards from those contained in the November 2015 proposals. The government responded by withdrawing its November 2015 BS V/VI proposal and announcing that they would move the implementation date for BS VI to April 1, 2020 for all models and skip over BS V standards. A new draft proposal was published in February, 2016 and finalized in Sept 2016.

Order of the Supreme Court of India in the case of ***M. C. Mehta Vs Union of India & Others dated 29/03/2017***. The Apex Court in its Order noted that the seminal issue in these applications is whether the sale and registration and therefore the commercial interests of manufacturers and dealers of such vehicles that do not meet the Bharat Stage-IV emission standards as on 1st April, 2017 takes primacy "over the health hazard due to increased air pollution of millions of our country men and women." The controversy relates to the sale and registration (on and after 1st April, 2017) of such vehicles lying in stock with the manufacturers and dealers that meet the Bharat Stage III emission standards but do not meet the BS-IV emission standards.

Order of the Supreme Court of India in the case of *M. C. Mehta Vs Union of India & Others* dated 01/05/2018 regarding BS VI fuel availability in India. No Bharat Stage IV (BS-IV) – compliant vehicles should be permitted to be sold in India after 31.03.2020 (Deadline). The Central government informed the Supreme Court that BS-VI fuel will be made available by 1st April 2019, in 17 out of 23 districts in the National Capital Region.

[1] BS-IV to BS-VI- 5 things to know, Somnath Chatterjee, 03-04-2018**,** https://www.msn.com/en-in/autos/news/bs-iv-to-bs-vi-5-things-to-know/ar-AAvo3YG

The Judgment stated that all automobile industries in India have to dispose of the vehicles which conform to BS-IV norms and have to adopt BS-VI norms, which provide improved and eco friendly technological changes, in manufacturing automobiles.

In this regard the automobile industries had requested the Apex Court for extension of the Deadline as it may take longer period of time to sell the stocks of non- BS-VI compliant vehicles and to manufacture BS-VI compliant vehicles, as the BS-VI fuel would be available in India only with effect from 01.04.2020.

The Supreme Court made the following observations in the said Judgment:

> “According to the Report of the Parliamentary Standing Committee dated 07.08.2018, the problem of air and vehicular pollution has had a cascading effect on the health of people residing in various parts of the country including the National Capital Region (NCR) of Delhi.
>
> As according to the World Health Organization (WHO), Indian cities of Gwalior, Allahabad, Raipur, Delhi, Ludhiana, Khanna, Varanasi and Patna are amongst the most polluted cities in the world. Thus, there is an urgent need to ensure compliance of BS-VI norms with effect from 01.04.2020 by automobile manufacturers in India.”

Further, the Union Government of India has spent approximately Rs. 30,000 Crores to make BS-VI fuel available in various parts of India. Moreover, BS-VI fuel has already been made available in the NCR of Delhi since 01.04.2018. Thus, there is no need for extension of Deadline as there is availability of BS-VI fuel in India for manufacturing automobiles.

Moreover, manufacture of BSVI compliant vehicles has already begun in India by a number of automobile companies including M/s. Hero MotoCorp, and is expected to be finished before the Deadline. Other automobile manufacturers can also put in efforts to comply with BSVI norms before the Deadline.

Further, a number of automobile vehicle companies are engaged in manufacturing hydrogen cell, fuel vehicles along with hybrid, electric and compressed natural gas vehicles, which are technologically far more advanced than BSVI compliant vehicles. So, there should not be any difficulty for other automobile manufacturers in adopting BSVI norms in manufacturing automobiles before the Deadline.

Most importantly, every person has a right to a decent environment in India which has been held to be a fundamental right under Article 21 of the Constitution of India, 1950 as amended thereof by the Supreme Court in *Shantistar Builders v. Narayan Khimalal Totame, 1990.*

Therefore, in view of a larger public interest, i.e. the health of citizens of India, the Supreme Court herein has refused to give any extension of the deadline to comply with BS-VI norms and prohibited companies from selling or registering BS-IV compliant vehicles after 01.04.2020.

IV. IMPACT ON SOCIETY

The National Green Tribunal considers clean air as one of the fundamental rights of citizens of India. Vehicles that comply with the BS IV standards are equipped with fuel efficient engines that release lesser toxic gases compared to the older vehicles. The Government of India is also planning to implement a ‘cash-for-clunkers’ scheme to encourage vehicle owners to switch from older vehicles to fuel efficient BS IV compliant vehicles by giving them considerable subsidies.

V. CONCLUSION AND SUGGESTIONS

Mahindra & Mahindra (M&M) is rethinking launching six products under Furio platform in the Bharat Stage IV regime after the Supreme Court banned the sale of vehicles under the emission norms after April 1, 2020. The company is considering shifting at least a couple of products to the BS-VI regime.

Furio, a platform of 21 products, was introduced by M&M in July 2018 for its new range of Intermediate Commercial Vehicles (ICVs) and designed by its Italy-based subsidiary Pininfarina. Furio has been developed with an investment of Rs 600 crore. The company had then announced its plans to launch six trucks in the current fiscal while the rest will come straight in the BS VI era.

Implementation of BS IV standards has certainly increased the input cost for vehicle manufacturers as they now have to use better, fuel efficient technology that minimizes the ill effects of air pollutants on the environment. The same cost will be passed down to the vehicle buyers. Concurrently, oil refineries in India are also working on producing superior quality fuel that will again raise the fuel cost in the country. However, considering the negative effects of air pollution on the environment and human health, the increased cost of vehicles and fuel will lead to a long-term saving due to lower health and medical cost.

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WI-FI ENABLED AUTOMATED LANDMINES DETECTION ROBOT

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ABSTRACT

Land mine detection is most critical during ware fare moving armed vehicle drive in the enemy territory. These armed vehicle or Main battle tanks are used to follow the path of pilot tank operated manually to avoid damage/distraction of the battle tank and defence causalities of defence area. In addition post articles fare the mines sown during war can be detected and diffused by using a mine detection robot, which can save civilian life to avoid human loss.. This research work suggested to have a proto type model of a land-mine detection robot (LDR), which can be executed remotely using Wi-fi. technology. The safety of humans was marked and designed robot with special range sensors employed to avoid obstacles. Invention of this project prototype was done using lightweight temperature resistant metal. Path planning, obstacle detection . The robot system is inserted with metal detector capable of sensing the landmine and buzzer from producing a warning alarm to the nearby personnel in that area. The robot is carried out by the DC motor. Robot can identify the position of the landmines.

INTRODUCTION

National security is of prime importance in today's weapon studded world and therefore the need to consider safety of the army personnel and people living in war prone areas becomes very vital. A Landmine is basically an explosive device hidden underground by the enemy and explodes when any personnel or vehicle steps or drives over it. The Pressure created by the personnel or the vehicle on the ground below which the mine is laid acts as the detonator for the mine explosion. The damage caused by the Landmine explosion is fatal and hence detecting landmines becomes necessary before the army personnel or vehicle accidentally steps over it. The major challenge is detecting these landmines without causing any explosion and diffusing them once they are detected. The process of detecting landmines is technically termed as minesweeping and process of removing or defusing the mines is known as demining or mine clearance. Minesweeping was earlier done using trained animals like dogs and rats but modern methods includes metal detectors and various tooled attached to the vehicles. But any manual intervention of a human is always dangerous. Robots are used for various applications in industrial area. Robot performs various activities and is becoming more advanced. That's the reason nowadays Landmine Detection Robotic Vehicles and unmanned robots are used to detect the landmines. Robots are always reliable in terms of perfection in detection and no human life is endangered in the process.

BRIEF LITERATURE SURVEY

According to paper added InTech-Mine/followed by IEEE 2014, the robot is equipped with special range sensors that help in avoiding the obstacles in the field While many techniques have been developed for military use, the military problems is quite distinct from that of humanitarian demining. The military is concerned mainly with minefield breaching. Rapidly clearing a route thought a minefield, leaving most of the mines in place. To achieve these ends, military systems tend to rely on high – troubled operation. This is clearly insufficient for humanitarian use as even the fear of the presence of landmines will result in land remaining uninhibited.

Minefield surveys are typically classified into three levels. Level 1st surveys are designed to identify the general location of mined or suspected mines areas. A Level II surveys is designed to reduce the large areas identify in level 1st surveys. Level III surveys are conducted during the actual clearance of the areas identified in the level II to surveys and involves the accurate recording of the areas cleared.

Now, this project allows us to taking a brief literature surveys from the various journals, scholars, papers, thesis on automated metal detection robot. i.e.

1) According to paper added to IEEE xplore on 6 March 2017, Demining or mine clearing is the process of detecting and removing land mine from an area. Uncleared landmines represent a major humanitarian and economic threat in over 70 countries. Its victims suffer from permanent disability if not killed and require horrific expensive care. Also, the cost of the land, roads, and underground resources that remains useless. Clearing mines is very dangerous work. The majority of demining work is still carried out manually using metal detectors and prodders. For every 5,000 mines that are removed, one person is killed and two people are injured. Over the years there has been considerable interest within the scientific and engineering communities in the application of advanced technologies to improve the safety and efficiency of this work. In this paper a motion-planning algorithm to enable landmine detection and clearing robots to systematically scan a minefield, detect landmines and clear it is presented. The algorithm works on two steps;
   (1) generate the driving tracks that can be used to scan the minefield area.
   (2) connect these tracks using Dubins' path in order to generate a continues and complete trajectory which can be used for the robot's navigation.

   2.According to paper added to IJETTCS on July -August 2014 there are many Countries affected by landmines which present a major threat to lives and cause economic problems. Landmines are harmful because of their unknown positions and often difficult to detect. The development of new demining technologies is difficult because of the wide variety of landmines. Currently, more than 100 million anti -personnel mines are under the ground all over the World. It also injures or kill more than 2000 people over a month as a result, the removal of landmines as become a global emergency. The current method of removal mines manually is costly and dangerous.

   3.by specifically detecting the position of obstacles. For the fabrication of the project, a special type of prototype made of lightweight temperature resistant metal is used to carry all objects. In this project we are using a liquid with colour which makes a spot on the position where the mines is being detected. A wireless camera is added to the robot, which captures and broadcasts the present location of the robot. Microcontroller commands the robot. This technique has the practical benefit of reducing the number of casualties, after the implementation of the technique, the robot can be controlled efficiently and it robustly determines the position of the obstacle.

4.According to the book “Mine Detection Robot and Related Technologies for Humanitarian Demining” by Kenzo Nonami, (Chiba university of Japan), Currently, more than 100 million anti -personnel mines are under the ground all over the World. It also injures or kill more than 2000 people over a month as a result, the removal of landmines as become a global emergency. The current method of removal mines manually is costly and dangerous. This project demonstrates the problem and effects of landmines in defence fields.

OBJECTIVE

To get the robot all set to not blow itself into tiny little chunks, the team at Coimbra added sensors for navigation and localization (GPS, stereo vision, and a laser), as well as a customized two-degrees-of-freedom arm equipped with both a metal detector and a ground penetrating radar system.To make a good security for army soldiers. The proposed work should consist of following features :-

Landmine Clearance

A land mine detection robot needs to be designed to be employed in peacekeeping operations and evacuation of contaminated areas. In order to protect the wireless control operator, the designed robot must be able to operate remotely, it is equipped with wireless data transmission capabilities.

Low cost and high reliability

Robots can be constructed with a high cost and a low complex, highly reliable structure. Millions of landmines are still buried in various countries around the world. Unfortunately, landmines make it very difficult to accurately detect human organization. Huskies do not come into stock with the ability to locate mines. Or rather they can explore only one mine at a time.

By mistake

To not fly the robot itself (or anyone else) into tiny pieces, the team at Combra added sensors for navigation and localization (GPS, stereo vision and a laser), as well as (more importantly) a customized one. Two degree-of-freedom arm, equipped with metal detector and ground penetrating radar system.

The reason why you want the robot to find the mine is quite clear:

If the robot becomes absorbent, you can just buy another one. But the rationale for autonomous systems is also one of sheer volume: there are some like 110,000,000 active landmines right now, just waiting for people to do bad stuff. And they are terrifically effective at it, killing and injuring thousands of people every year. In full blast, humans (and rats) are cleaning about 100,000 mines every year, about a thousand years before we are able to clean them all. So we need robots. Smart robot. Inexpensive robot. And lots of them. To that end, the project has been transformed into Tiramisu, a delicious dessert and human demolition project in Europe. But locating the mines requires only half the work: they still have to be dealt with somehow. We suggest that one of these monasteries beat those landmines in an explosive submission to Crossbreda with a grizzly.

Block Diagram:

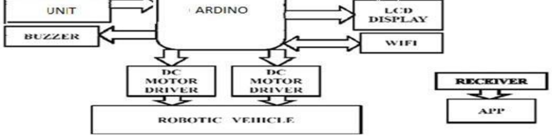

Figure 1: Block diagram of landmine detection

The ESP8266 arduino compatible module is a low-cost Wi-Fi chip with full TCP/IP capability, and the amazing thing is that this little board has a MCU (Micro Controller Unit) integrated which gives the possibility to control I/O digital pins via simple and almost pseudo-code like programming language. This little module allows the MCU to connect to WiFi network and create simple TCP/IP connections.

Bluetooth modules like HC-05 and HC-06 area unit simple to set-up and use with the Arduino IDE, however they need their own limits like high power consumption and work on older Bluetooth V2.0. Also, recently I even have given myself a brand new ESP32 DEV kit, these modules have options like in-built Wi-Fi and Bluetooth, adequate ADC and DAC pins, audio support, Coyote State card support, deep sleep mode and a lot of.ESP32 is currently formally supported by the Arduino IDE. So, I launched my Arduino IDE and have become absolutely alert to BLE programs.

A power offer could be a part that provides energy to a minimum of one power load. Generally, it converts one variety of power into another, however it will convert a special variety of energy, like star, mechanical or chemical, into power. the ability offer provides electrically operated components. The term sometimes refers to the instrumentality connected to the half being operated. as an example, a laptop power offer converts AC current to DC current, and typically has a minimum of one fan behind the pc case. an influence offer is additionally known as an influence offer unit, electrical brick, or power adapter. It includes these components as an influence offer unit for ATMEGA and drivers;

A metal locator is an electronic instrument which perceives the closeness of metal close by. Metal pointers are valuable for discovering metal thoughts inside articles, or metal things verified underground. They reliably contain a handheld unit with a sensor test which can be cleared over the ground or different articles. In the event that the sensor inclines toward to a bit of metal this is appeared by a changing tone in headphones, or a needle proceeding ahead a marker. Normally the gadget offers some trace of parcel; the closer the metal is, the higher the tone in the headphone or the higher the needle goes. Another ordinary sort are stationary "stroll around" metal locators utilized for security screening at courses in control workplaces, town hallways, and air terminals to see verified metal weapons on an individual's body.

In this paper, we have explored land mines that demonstrate the problem and impacts of landmines in defense areas. We are proposing a robot that has the capability to detect buried mines and allow the user to control it wirelessly to avoid human causes. The robot is equipped with special wheels controlled by the driver module, allowing it to move in all possible directions. In this project, we focus on the protection of humans and robots; The robot is equipped with special range sensors that help to avoid obstacles in the area, especially by detecting the position of obstacles. For the construction of the project, a special type of prototype made of lightweight temperature resistant metal is used to carry all the items. In this, we are using a liquid with color that creates a spot at the position where the mines are being detected.

RESULT

As we know that landmines crisis, many countries affected by landmines which present a great threat to life and cause economic problems. Landmines are harmful due to their unknown conditions and are often difficult to detect. The development of new degradation technologies is difficult due to the wide variety of landmines. Currently, more than 100 million anti-mines are under the ground all over the world. It injures or kills more than 2000 people a month, resulting in the removal of landmines as a global emergency. The current method of manually removing mines is expensive and dangerous.

Therefore, we create a fully "micro controller based automated landmines dotainment robot". We easily guarded the army officers and removed the potential possibility of casualties and detected landmines. In this project, we focus on the protection of humans and robots; The robot is equipped with special range sensors that help to avoid obstacles in the area, especially by detecting the position of obstacles. For the construction of the project, a special type of prototype made of lightweight temperature resistant metal is used to carry all the items. In this paper we are using a liquid with color that creates a spot on the position where the mines are being detected.

CONCLUSION

Nothing should be more many cases of fatalities and injuries due to explosion of landmines. Till date a lot of research and development has been done important than the lives and safety of our country's army men who risk their lives for our safety from external enemies. There have beenand different types of landmine detection robots have been developed each having its own advantages and disadvantages. The variation in these robots is based on the controller or processor used, sensor interfaced.

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WOMEN ENTREPRENEURSHIP IN INDIA: CHALLENGES AND GOVERNMENT INITIATIVES

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Women today are no more restricted to homes, rather they are skilled, literate, innovative component of the total population possessing the ability to create and run successful enterprises. Although the number of women entrepreneurs is tiny , it is motivating to know that women no longer hold to the stereotype that only men can be the true wage earners in the society. In India, women empowerment via entrepreneurship plays a very vital role in overall development of country. Today we can see women everywhere from family to factory. The growth of service sector in particular has given a momentum to women entrepreneurs. Entrepreneurial spirit exists in each and every woman, however there are certain obstacles that stop women from realizing their full potential. The paper gives an insight of challenges faced by women entrepreneurs and government initiatives in this regard.

RESEARCH METHODOLOGY:

The research is based on secondary data.It is a descriptive study.The data is collected from review of past researches.The paper throws a light on types of women entrepreneurs,challenges faced by them,reasons for women becoming entrepreneurs,various examples of shining women entrepreneurs of India,government initiatives for promoting women entrepreneurship etc.

OBJECTIVES:

1. To know the status of women entrepreneurs in India.

2. To know the challenges faced by women entrepreneurs in India

3. To know the government efforts towards promoting women entrepreneurship in India.

REASONS FOR WOMEN BECOMING ENTREPRENEURS:

Many researches tell that women begin businesses for significantly different reasons than their male counterparts. While men start businesses primarily for growth achievements and profit motive, women indulge in businesses in order to meet their personal goals such as need of achievement and accomplishment,recognition etc.

The following are the different reasons for women becoming entrepreneurs:

- New challenges and opportunities for self fulfillment

- Employment generation

 Freedom to take own decision and be independent

 Need for additional income

 Bright future of their wards

 Success stories of friends and relatives

 Support of family members

 Self identity and social status

Women entrepreneurs in India are basically classified into the following stratas:

1. Affluent entrepreneurs
2. Pull factors
3. Push
4. Self-employed entrepreneurs
5. Rural entrepreneurs

1. Affluent Entrepreneurs:

Affluent women entrepreneurs are those women entrepreneurs who come from rich business families. They are the daughters, daughter-in laws, sisters, sister-in-laws and wives of wealthy people in the society. Most of them are engaged in interior decoration, book publishing, film distribution etc.

2. Pull Factors:

Women in towns and cities get into entrepreneurship so as to do something new and to be financially independent. These are coming under the category of pull factors. They belong to educated women who generally lake up small and medium industries where risk is low. Under this category, women usually start service centres,schools, food catering centres, restaurants, grocery shops etc.

3. Push Factors:

There are some women entrepreneurs who accepts entrepreneurial activities to overcome financial difficulties. The family situation forces them either to develop the existing family business or to start new ventures to improve the economic conditions of the family. Such categories of entrepreneurs are termed as push factors.

4. Self-employed Entrepreneur:

Poor and very poor women in villages and town rely heavily on their own efforts for sustenance. They start small and tiny businesses like brooms making, wax candle making, providing tea and coffee to offices, ironing of clothes, knitting work, tailoring etc. Such women are called self-employed entrepreneurs.

5. Rural Entrepreneurs:

Women in rural areas/villages start enterprises which need least organising skill and less risk. They mainly engage in production of Dairy products, pickles, fruit juices, pappads and jagger making .

FALGUNI NAYYAR
CEO, Nykaa
Falguni Nayyar after a greatly successful career in financial services of over 25 years took the entrepreneurial jump and launched Nykaa.com, a beauty and wellness ecommerce, premier platform for women. This IIM Ahmedabad graduate launched her website in the latter end of 2012 and soon enough Nykaa started boasting of retail partnerships with the world's top notch personal care corporations like Unilever, P&G, L'Oreal, Beiersdorf, Johnson & Johnson . Clearly an inspiring woman of the working sphere that has shined in every venture.

GURLEEN KAUR
CEO, Hareepatti
Gurleen Kaur is the CEO of Hareepatti.Its a firm which deals in financial advisory providing its customers financial intelligence, investment solutions, short term and long term monetary goals and the like. Her splendid work experience and command over the English language enabled her to give financial literacy and freedom to more than a thousand people in the recent years.

NEHA BEHANI
Co-Founder, Moojic
The co-founder and one of two minds behind innovative digital jukebox service – Moojic, Neha Behani is an entrepreneur who's inspirational story includes her bravely quitting her job and following her dream. Along with her co-founder, Kumaran Mahendran, Neha came up with the idea of Moojic which is a radio/jukebox like service for restaurants, cafes, bars, salons, gyms and other retail outlets. Where it stands apart is, Moojic allows customers that frequent such joints to alter and customize playlists according to what they want to listen to. Moojic thus works on the "customer knows best" motto which symbiotically (and ever so intelligently!) works for the music providing service as well as the venue it's being played at.

PANKHURI SHRIVASTAVA
Co-founder & CMO, GrabHouse
Pankhuri Shrivastava is reader, dancer and the co-founder of the nation's first free roommate search engine, Grabhouse.com. She has completed a two year fellowship at Teach for India after getting a degree in Computer Science Engineering at Bhopal University. Pankhuri came up with the idea for beginning a real estate venture when she moved to Mumbai in 2010 and realized that one had to spend excessive amounts on brokerage while dealing with the struggle of shifting flats about five times. Grabhouse.com has now scaled its service to Pune, making house hunting a simpler task and saving brokerage fees for this city comprising of students finding a place to stay!

RADHIKA GHAI AGGARWAL
Co-Founder & CMO, ShopClues.com
Having a lont term marketing experience in various spheres like retail, ecommerce, fashion & lifestyle, advertising & public relations, Radhika Ghai Aggarwal co-founded Shopclues.com.

It was launched in Silicon Valley in 2011.Previously, she ran a fashion blog based out of the Silicon Valley, USA. She has also previously worked with Nordstrom at its corporate headquarters in strategy planning and with Goldman Sachs in its Wealth Management group in New York and Menlo Park, USA. She has an MBA degree from Washington University and also holds a post graduate degree in Advertising and Public Relations.

RASHI CHOUDHARY
Co-Founder, LocalBanya.com
Rashi Choudhary is the co-founder at LocalBanya, Mumbai's first online grocery store that aspires to make the shopping experience more flexible and light on pocket. She started off her career as a management trainee at Ernst & Young and then she worked in retail for Raymond Ltd. and Rashi Peripherals. This victorious woman entrepreneur presently handles all processes starting from the customer placing an order till the time of delivery and after sales service. This includes logistics, customer service, data management, sourcing & pricing of products, quality check, web content etc. Presently, LocalBanya gets an average of six hundred orders a day from Mumbai, Thane and Navi Mumbai. Also they are known to have 98% punctuality with respect to order fulfilment.

TITHIYA SHARMA
Founder & CEO, HopeMonkey
HopeMonkey is a non for profit organization that gives everyday people like you and I an opportunity to be philanthropists. You can go to the HopeMonkey website and select the cause you want to contribute to, it can range from providing electricity to slums or midday meals to children, basically you would have the previlige of changing somebody's life for the better.

PARI CHAUDHARY
Founder, Bunaai
Bunaai" is an organic clothing label under the fashion house White Official - styled, designed and created by Pari Choudhary, Jaipur. It seeks to delight customers with apparels that they love, beautiful kurtis,block prointed sarees,stylish designs at affordable prices, allowing them to shine through.

RICHA SINGH
Founder,YourDost
YourDOST is an establishment of a unique kind which aspires to establish a distinctive platform for healthy mental state and emotional hold. The startup joins experts to people wish to discuss any kind of emotional concerns, while providing them required anonymity. Founded by Richa Singh, an IIT Guwahati alumnus, it aims to create awareness regarding mental wellness in our society. Richa is confident that technology combined with empathy and right kind of experts will go a long way in helping people going through various emotional and mental challenges and equipping them to better deal with it.

ADITI GUPTA

Founder, Menstrupedia

Aditi Gupta is continuously teaching the society regarding menstrual health and hygeine via her website.

SHILPA SHARMA
Cofounder, Jaypore
Jaypore is an e-commerce portal that has the objective to take Indian made products to the world. It brings together the creativity of various artisans and craftmen from all over India. It offers clothing, jewellery, gifts, accessories and much more.

A large number of women are taking up entrepreneurship in some form or the other. The drive to pursue entrepreneurship is due to the immense passion. However, the hurdles they face are also immense with the kind of competition entrepreneurs face these days.
Here are some of the problems women entrepreneurs face:

Raising the funds
Investment plays an important role in business. A lot of women struggle in raising of funds while setting up their businesses. It may seem simple but getting the right amount and investors is one tough job. Especially when you are a woman**,** people think twice before investing simply because of the misbelief that women aren't as proficient as men in terms of business and family is the first consideration for them.

Work life balance
Women struggle to balance their lives. Managing between their family and the enterprise becomes a significantly burdensome task for them. They tend to believe that their work life is different from their social life. Instead, women need to focus on consciously blending the two aspects which will help ease the struggle of the difficult act. This could help them focus more on their careers.

Male dominated society
Today's women have scaled the corporate life pretty well. In a world that is observing an increase in the number of women entrepreneurs, male supremacy still subsists. This constrains women from entering into business ventures.

Lack of family support
In the early years of business, one needs immense support from his or her dear ones. Most of the family member back out when a woman is in need of significant encouragement and motivation. A continuous fear of failure in doing justice to their venture and at the same time managing a family with identical sincerity and dedication frequently puts huge pressure on women entrepreneurs thereby adversely affecting their devotion to perform.

STATISTICS ON WOMEN ENTREPRENEURSHIP:

The sixth economic census released by ministry of statistics and programme implementation, presented the status of women entrepreneurs in the country.

- The survey shows that women constitute only 13.76% of the total entrepreneurs, i.e., 8.05 million out of the 58.5 million entrepreneurs.
- These establishments in total, owned by females, provide employment to 13.45 million people.

- Another revelation is that out of these entrepreneurs, 2.76 million women (34.3% of the total entrepreneurs) work in agriculture sector whereas 5.29 million females (65.7% of the total entrepreneurs) work in non-agricultural sectors.
- In the agriculture, livestock dominates (with a share of 31.6 %) among all other farming activities.
- Among the non-agricultural activities owned by women entrepreneurs, manufacturing and retail trade are dominant ones with corresponding percentages being 29.8% and 17.8% respectively.

GOVERNMENT SCHEMES FOR PROMOTING WOMEN ENTREPRENEURSHIP:

1. Annapurna Scheme

This scheme is offered by the State Bank of Mysore for those women entrepreneurs who are setting up food catering industry in order to sell packed meals, snacks, etc. The amount granted as a loan under this scheme can be used to fulfill the working capital needs of the business like buying utensils and other kitchen tools and equipment.

Under this loan, a guarantor is required along with the assets of the business being pledged as collateral security. Further, the maximum amount of money that is granted is ₹50,000 which has to re-paid in monthly installments for 36 months, however, after the loan is sanctioned, the lender doesn’t have to pay the EMI for the first month. The interest rate is determined depending upon the market rate.

2. Stree Shakti Package For Women Entrepreneurs

This scheme is offered by most of the SBI branches to women who have 50% share in the ownership of a firm or business and have taken part in the state agencies run Entrepreneurship Development Programmes (EDP).
The scheme also offers a discounted rate of interest by 0.50% in case the amount of loan is more than ₹2 lakhs.

3. Bharatiya Mahila Bank Business Loan

This loan is a support system for budding women entrepreneurs looking to start new ventures in the fields of the retail sector, loan against property, MICRO loans, and SME loans. The maximum loan amount under this loan goes up to ₹20 crores in case of manufacturing industries and also a concession is available to the extent of 0.25% on the interest rate and interest rates usually range from 10.15% and higher.
Additionally, under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE), there is no requirement of collateral security for a loan of up to ₹1 crore.

4. Dena Shakti Scheme

This scheme is provided by Dena bank to those women entrepreneurs in the fields of agriculture, manufacturing, micro-credit, retail stores, or small enterprises; who are in need of financial assistance. The interest rate is also decreased by 0.25% along with the maximum loan amount being ₹20 lakhs for retail trade; education and housing whereas ₹50,000 under the microcredit.

5. Udyogini Scheme

This scheme is offered by Punjab and Sind Bank so as to provide women entrepreneurs involved in Agriculture, retail and small business enterprises to get loans for business at flexible terms and concessional interest rates. The maximum amount of loan under this scheme for women between the age bracket of 18-45 years is ₹1 lakhs but your family income is also taken into consideration and is set at ₹45,000 per annum for SC/ST women.

6. Cent Kalyani Scheme

Ths scheme is offered by the Central Bank of India with the aim of supporting women in starting a new venture or expanding or modifying an existing enterprise. This loan can be availed by women who are involved in village and cottage industries, micro, small and medium enterprises, self-employed women, agriculture and allied activities, retail trade, and government-sponsored programs.

This scheme requires no collateral security or guarantor and charges no processing fees. And the maximum amount that can be granted under the scheme is Rs. 100 lakhs.

7. Mahila Udyam Nidhi Scheme

This scheme is launched by Punjab National Bank and aims at supporting the women entrepreneurs involved in the small scale industries by granting them soft loans that can be repaid over a period of 10 years. Under this scheme there are different plans for beauty parlors, day care centres, purchase of auto rickshaws, two-wheelers, cars, etc. the maximum amount granted under this scheme is ₹10 lakhs and the interest depends upon the market rates.

8. Mudra Yojana Scheme For Women

This scheme has been launched by the Govt. of India for individual women wanting to start small new enterprises and businesses like beauty parlors, tailoring units, tuition centres, etc. as well as a group of women wanting to start a venture together. The loan doesn't require any collateral security and can be availed as per 3 schemes –

i. Shishu – loan amount is limited to ₹50,000 and can be availed by those businesses that are in their initial stages.

ii. Kishor – loan amount ranges between ₹50,000 and ₹5 lakhs and can be availed by those who have a well-established enterprise.

iii. Tarun – loan amount is ₹10 lakhs and can be availed by those businesses that are well established but require further funds for the purpose of expansion.

If the loan is granted, a Mudra card will be given to you which functions the same way as a credit card however the funds available are limited to 10% of the loan amount granted to you.

The percentage of loan amount disbursed under Pradhan Mantri Mudra Yojana (PMMY) to women entrepreneurs in India was 47.53%, out of the total amount disbursed under PMMY of Rs. 132954.73 crores in India as on 31.03.2016. The top 10 states in terms of the percentage of loan amount disbursed under PMMY to women entrepreneurs were: Odisha, Tamil Nadu, Madhya Pradesh, West Bengal, Karnataka, Bihar, Maharashtra, Sikkim, Puducherry and Uttar Pradesh as on 31.03.2016.

9. Orient Mahila Vikas Yojana Scheme

This scheme is provided by Oriental Bank of Commerce to those women who hold a 51% share capital individually or jointly in a proprietary concern. No collateral security is required for loans of ₹10 lakhs up to ₹25 lakhs in case of small-scale industries and the period of repayment is 7 years. A concession on the interest rate of up to 2% is given.

10. Stand Up India Scheme

The Stand up India scheme aims at promoting entrepreneurship among women and scheduled castes and tribes. The scheme is anchored by Department of Financial Services (DFS), Ministry of Finance, Government of India.
Stand-Up India Scheme facilitates bank loans between Rs 10 lakh and Rs 1 Crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise. This enterprise may be in manufacturing, services or the trading sector. In case of non-individual enterprises at least 51% of the shareholding and controlling stake should be held by either an SC/ST or woman entrepreneur.

CONCLUSION

Women are active everywhere be it in families, in education sector, or in hotels, factories etc. Today, females are bold, have willingness to take risks, and learn from their mistakes. From having a social influence to opening up new ventures, women are the pillars of nation’s strength today. Government has implemented so many schemes for the upliftment of women entrepreneurs in both rural and urban areas but many of these women are still not aware of these schemes, so steps should be taken to make them aware of these schemes. Also families should educate girls so that they have awareness, are self independent,can make decisions on their own and live a bright life.

GREEN HRM: A NEW TREND FOR ORGANIZATIONAL SUSTAINABILITY

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ABSTRACT

The digitalization is booming across the globe, and the results are clearly visible that we are moving rapidly towards industrialization. This has further resulted into increased business activities, production and advancement of technology. Although such technological advancement increases the human satisfaction and convenience, provide them ease and comfort but on the other hand also causes ecological disbalance and fatal hazards which is a big threat for living beings on our planet. It's high time to implement and use green practices in order to save our environment. It is very important for any organization to ensure that, today's business needs and goals are met without compromising on the needs of the future generations. To adhere to the same, green HRM is emerging as a great plan, which targets to achieve and promote environment friendly HR practices. Implementing the green HRM practices will not only improve the environmental conditions but will also improve the quality of life on our planet. This paper focuses on an attempt to reflect the concept of green HRM in a simplified way. It is a great concept which helps us to plan for sustainable environment. The paper just focuses upon the basics of green HRM, various practices of green human resource process for going green, importance of HRM and finally the challenges, social impact and implications of green HRM.

Keywords- *Green HRM, Green Environmental Management, Green HRM practices.*

INTRODUCTION

We are currently in a time zone of green economy- one in which consumers and employee expectations and drastic environmental changes will require business to focus on "green" issues in their organizations. In rapidly changing globalized business world, the organization needs to focus on organizational sustainability in relation to economic, ecological and social sustainability. In order to develop sustainable culture in the organization, human resource department plays a very important role.

Green HRM is basically a contribution of HR policies to protect the natural resources. Green HRM means all those HR practices which are intended towards making environment green which will further result in sustainable environment. It basically creates a platform where workforce experiences high level of job satisfaction and this will ultimately result in high productivity (Nijhawan, 2014). The responsibility of human resource department is not only restricted to management, development or training of employees but also to recruit right person at right job, train them and polish them as per requirement and current trends in industry.

Green HRM targets to achieve the reduction of carbon footprints of every employee. The industries should prioritize to build green sense among the employees. They can achieve this by making employees conscious about preserving environment along with creating a sense of responsibility in them towards the environment. This can help in reducing the carbon footprints and will ultimately result in lower cost and better efficiency. Main focus of green HRM is to minimize the waste and optimize the use of resources, there are two vital elements of green HRM: Preservation of knowledge capital and environment friendly HR practices.

Due to global warming, climatic conditions have been affected and this has become an issue of great concern for government, public and organization (Arulrajah, 2014). Therefore, the implementation of green HRM practices in the organization is very important.

Literature Review

Everyday human activities have affected environment drastically. Because of this the need to go green has expanded from individuals to the organizations. Organizations are now more interested in volunteering in order to operate in more environment friendly ways. Government is also actively taking part in this go green initiative. The local municipalities are encouraging organizations and local people to become greener by offering them incentives. The ongoing research on green HRM confirms the need of racial balance between environment management and human resource management. It is assertive that different green HRM practices can build willingness, inspiration and commitment among employees and as a result they can contribute their efforts, ideas and knowledge to the greening of their organizations.

Recent studies which are closely related to green HRM practices and sustainability is briefly reviewed below in chronological order as follows:

1. Suhaim Sudin and Zuliawati Mohamed Saad (2018), did a study on Green HRM and its practices. There study explored the link between Environmental Management System, Green HRM and Corporate Environmental Behaviour. Through this study it was found out that green HRM practices are very closely related to the Management of environment. The data for the study was collected through questionnaire and it was conducted in Malaysia. He used regression analysis in history.
2. Sasmita Nayak and Vikashita Mohanthly (2017), focused their study on Green HRM for sustainability of business. Their study stated, that the Green HRM practices like green selection, recruitment, induction, performance appraisals, compensation and reward system are helping in making the employees eco- friendly which will ultimately result into sustainability of business.
3. Arvind S and Mohanamanoj K (2017), in his paper he studied about Green HRM and stated that it is a novel approach for the sustainability of environment, he explained concept related to Green HRM and its practices. It also explains the way to sustainable environment is only and only possible through adapting Green HRM practices.
4. Md. Maminullah (2017), perform his research study regarding the integration of environmental sustainability with human resource management. Aim of his study was to Set Up the Analysis of the Green HRM Concept, Importance, Implementation. Through his study he found out that the efficiency is expanding and there is economical utilization of resources, less wastage, improved work/private life if the Green HRM practices are followed.
5. Winnie Achiengowino and Joseph Kwasira (2016), did his study regarding the Green HRM and its contribution towards building a sustainable environment. He coined his study in a way of finding out whether Green HRM is helpful or not. The objectives were to find out the impact of Green HRM practices on Sustainability of Environment. He did this study at Menengai Oil Refinery, Keniya. The sample sample size was 163 employees. The data he collected was descriptive and inferential

statistics. He concluded the study by saying that green performance management do impact environmental sustainability.

6. Haridas P. K. et al (2016), studied Green Human Resource Management and Sustainability. Objective of his study is to find out the effect of Green Human Resource Management practices on the sustainability of the environment. His study was done by the primary data that he collected from the IT professionals with the help of questionnaire. Result of his study showed that Green HRM practices significantly influence the sustainability of environment. This study was conducted in Kerala.
7. Saher Sayed (2015), also gave a complete detail of Green HRM and Sustainability in his study which was based on secondary data and the objectives of the study were also based on secondary data. His study stated that Green HRM plays a very important role in promoting environmental sustainability by adopting and following Green HRM policies and practices.
8. Mousumi Sengupta and Nilanjan Sengupta (2015), studied Green HRM based on both primary and secondary data. Their study implied/explained that the Green HRM practices encourage employees to involve themselves in Green HRM activities that ultimately will play a role in improving organizational environmental performance.
9. Geethu Nijhawan (2014), made a study on Green HRM. His study revealed that the Green HRM practices like green recruitment, training, development etc. are showing significant effect on long-term organization and environmental sustainability.
10. K. Kiruthigaa and Miniviswanathan (2014), also studied about the Green Recruitment Awareness Among the Corporate. The study he made was on both primary and secondary data. The sample size of his study was 100. he concluded that Green practices are showing impact on sustainable development of business.

Research Methodology

Research is not possible without a proper well defined and organized research plan. Therefore, research methodology is called as the backbone of any research. This research paper is based mainly and primarily on data collected from various secondary sources on Green HRM practices and Sustainability: website, article, journal, books, research paper and various other publications. The main purpose of this research was to study and provide the basic idea regarding the green HRM practices followed in various industries and to understand link between Green HRM and Environmental Sustainability and . Secondary data was collected in order to get different view from other researchers and authors. This data is collected for the broad study of the research topic. It contains recent development and studies which are done for improving and understanding the Green HRM practices and their importance.

The data was collected to broadly define the environmental problems that we are currently facing and to throw some light on how different organizations are working towards finding the solution of these problems. It also includes how companies incorporate the green HRM process in their organizations.

Given below are some of the concepts of different authors related to Green HRM practices:

The research papers and articles were collected first and then reviewed.

In this study, the research methodology involved two steps:

- ✓ Material collection
- ✓ Descriptive data analysis

Material collection: In this part, collection of data was done. The papers were collected from various sources of database like www.ijstm.com ; www.rrjournals.com ; research review journal ; www.indusidu.org ; www.rspublication.com ; www.iosjournals.org and others which includes The International Journal of Science, Technology and Management (IJSTM) ; International Journal of Advanced Scientific and Technical Research ; Research Review International Journal of Multidisciplinay (RRJ).

All the papers were collected on the basis of performing an attempt to study "Green HRM" and also on the availability of all the volumes and the publication issued between 2014-2018.

Descriptive data analysis: The purpose of this study is an attempt to analyse papers on "Green HRM and it's influence on Environmental Sustainability" from the collected data. Maximum papers reviewed were from 2016, 2017, 2018.

The journals distributions where few selected papers were published shows the interest of the journals in the Green HRM practices and it's influence on environment sustainability.

The papers selected were purely based on theme. There were many research paper published in various journals but very few set up or study the link between the Green HRM practices and Environmental Sustainability.

Detailed Data Analysis

The research papers review have been discussed and analysed in this section to construct a holistic view on Green HRM. The objective of the paper is being divided into sub-objectives and are further framed into questions which answer whether Green HRM is really practiced in the corporates or not; whether it is influencing the environmental availabilities; are different industries following Green HRM practices; are these practices really helping the corporates in organizational sustainability.

Sample Size: 5 types of various industries like IT, manufacturing, auto, automation etc were selected.

Duration: All the information is based on recent developments from 2014-2018.

Type of research: Descriptive

Data Analysis: Based on reviewing and studying various research papers and companies journals.

Ques. Is there awareness about Green HRM concept among employees?

Ans. It has been observed that very less (less than half) of employees in the organization are completely aware about the term Green HRM while rest of the employees also just have a little bit of knowledge related to Green HRM practices.

Question-1. Are offices are using recycled paper?

Conclusion: Very few industries usually use recycled paper (i.e. PCR paper) in the office but more than half of the organizations are still not using the recycled paper.

Question-2. Do companies have plastic free zone in their campus?

Conclusion: It was found out that companies are not conscious enough to reduce plastic waste.

Question-3. Can Green HRM practices improve environment?

Conclusion: HR policies plays a big role in the organization and if they make them as a Green theme for work it can improve environment but implementing these policies fully in firm every level is very difficult.

Question-4. What are some best practices for going Green?

Conclusion: These are eliminating excessive use of paper, computerized training, vehicle sharing, green printing, recycling, flexi work, e-filing, online training, teleconference.

Question-5. Why should Green HRM be adopted?

Conclusion: These practices are very necessary to be implemented in each and every firm but most of the firms don't know how to take first step towards it. They know it's high time to take a step towards it but don't know how exactly they can do it.

Question-6. How much are Indian organizations promoting Green HRM?

Conclusion: Some have taken first step towards it and also there are very few who are actually concerned with environmental sustainability. Moreover, employees at every level need to be open towards green policies as things if individual level are accepted than bigger impact can be created.

Question-7. Is there inclusion of environment awareness criteria in the recruitment process policy?

Conclusion: Only few organizations have included it and most are not even aware of it.

Question-8. Are training sessions conducted to generate awareness about environmental issues?

Conclusion: Only some selected organization organize session to educate about current environment issues and ways to protect the environment.

Question-9. Does firms encourage their employees to attend conferences, seminars on environment sustainability?

Conclusion: Organizations are still lacking in encouraging employees for attending conferences, seminars on various aspects of environment sustainability. Also they are not promoting eco-friendly ways properly. Very few organizations are creating and modifying new process that are environment friendly.

OBJECTIVES

The objectives of this research paper are:

- Green practices in HRM
- Green HRM Management
- To examine the nature and extend of green HR initiatives undertaken
- The review of literature on the HR aspect on environmental management
- Examine the HR activities role
- Process model of HR issues involved in Green HRM and to know the working of green HRM model
- Green HR initiatives.

RECENT ENVIRONMENTAL PROBLEMS

Reducing the carbon footprints: According to one of the studies of Hindu Times on global emission it is concluded that India is the fourth highest emitter of carbon dioxide in the world, accounting to 7 per cent of global emissions in 2017. The top four emitters in 2017, which covered 58 per cent of global emissions, were China (27 per cent), the US (15 per cent), the European Union (10 per cent) and India (7 per cent), according to projection by Global Carbon Project. The rest of the world contributed 41 percent. It stated India's emissions look set to continue their strong growth by an average of 6.3 per cent in 2018 with growth across all fuels-coal, oil and gas by 7.1, 2.9 and 6.0 per cent.

The carbon emission in PSPD at 1.6t/ of board is the lowest in the country but it's commitment towards maximizing the usage of energy generated from renewable sources has led to installation of 'Green' Boiler designed to use internally generated bio-mass. By using bio-fuels in place of coal the carbon dioxide emission is reduced by about 2.0 lacs t/year and the usage of coal by about 1.0 lac t/year. To accomplish this, a producer gas plant has also been installed that generated producer gas from solid waste and helps reduce the existing boiler's demand in fossil fuels, and encourages reuse of process waste.

Water Conservation: With the growing population the demand for water is also increasing and this is leading to the need for its sustainable use and conservation so that it is available to the future generations too. For water conservation, recycling of back water is significant for a decrease in consumption of the fresh water. For accomplishment of this goal filter with advanced technology is installed that prevents clogging of filter cloth in Unit Kovai. As a result of this, the recycling of additional 2000 m3/day of back water by the units was possible which ultimately reduced the usage of fresh water.

Conservation of Energy: Technologies used for this purpose are: Variable Frequency Drive for flow control apart from valves, AC drives in place of DC motors, more energy efficient instead of old equipment, coating for smooth internal surface of pump casings, upgrading of steam and condensate system, installing solar water heating and lighting system and replacing incandescent lamps with high efficiency lamps/CFLs.

SMEs and Environmental growth: Climate changes affect the environment as well as businesses. Thus, this appears to be one of the concern of businesses. According to Yacob, et al. with the increase in awareness demand for environment friendly business has emerged to great extent and SMEs can be part of business community to implement the green concept as main focus on products, services and the method of production. Environment issues needs attention from all the societal factors. Business needs to know how to carry activities in a green way to maintain environment and buildup culture that concern about environment. As per the mentioning of Chendo, sustainability is the stepping stones for economic development and growth at same time can prevent environment degradation, biodiversity collapse and unsustainable use of natural resource. Moreover, this is a high need to start revolution to reduce pollution by the business that will ultimately result in profit generation.

Green HRM Practices by Business firm

Some of the common practices nowadays are: use of telephones and video-calling features for pre interview to pre screen candidates for reducing travelling, use of e-mail and other internet facilities for day to day office operations to reduce the printing of the paper.

For being ecological, economical and practical some of the green practices that a business firms use as environment friendly solutions to stay green are: green printing, green manufacturing and disposal of employees id, job sharing(sharing a job between two full time employees), teleconferencing and virtual interviews, recycling, telecommuting, online training, reduce employee carbon footprints by the likes of electronic filling, Green HR involves reducing carbon footprint(via less printing of paper, video conferencing, interviews etc), energy efficient office spaces, green payroll, car pooling, public or company transport, flexi work, e-filing, waste disposal, using non toxic and recyclable material, efficient use of water and its recycling, use of renewable energy, indoor air quality for human safety and comfort, effective control and building management system. These practices are believed as one of the most helpful source for the success, goodwill, effectiveness and efficiency with profit attainment by the business firm in the modern era.

Some GHRM Functions by Business Firms

Table 1.1

HRM Function	Green Policies, Procedures, or Practices
Job Analysis	Making environmental dimension as duty in Job Description and Green competencies as special component in Job Specification
Recruitment	Setting environmental criteria in recruitment messages and communicating employer concern about Greening through recruitment efforts
Selection	Selecting applicants aware of Greening and who are engage in it in their private life
Induction	Making new employees familiar with firm Greening efforts and developing induction program showing Green citizenship behavior of current employees
Training	Imparting knowledge and skills about Greening in employees through exclusively designed Greening program and doing training need analysis to identify Green training needs of employees
Performance Evaluation	Evaluating performance according to Green criteria and including separate component for Greening progress in performance feedback interview
Rewards Management	Providing financial incentives to employees for good Green performance of job and non-financial rewards for Greening
Discipline Management	Formulate and publish rules of conduct regarding Greening and develop disciplinary system to punish employees violating rules of Green conduct

Source: Shweta & Shruti (2018)

Research Linking Specific HRM Functions and Environmental Management

Table 1.2

Author	Specific HRM Functions	Findings
Wehrmeyer (1996)	Recruitment	Environmental management in effective way by recruitment practices as it ensure new recruits understand organization’s environment culture and share its environment values
Stringer (2009)	Recruitment	Graduates and other job applicants pay attention to the environmental management practices and performance of companies and use such information when deciding where to apply
Phillips (2007)	Recruitment	Firms are beginning to recognize that a reputation as a Green employer is an effective way to attract new talent
Ramus (2002)	Training	By environmental training and establishing a culture in where employees feel accountable for environmental outcomes were the most salient HRM practices for achieving environmental goals
Milliman & Clair (1996)	Incentives Management	Tying incentive pay to attainment of environmental goals help focus managers attention and invigorate efforts aimed ate achieving them
Ramus (2002)	Incentives Management	Recognitions and financial incentives can be effective in motivating employees to generate eco-incentives

Source: Adapted from Jackson, et al (2011)

Green HRM Model/Process

The HRM takes number of actions related to green practices. Green HRM model consists of following main components:

Input from environment i.e employees;

HR functions i.e recruitment, training and development, performance management and appraisals, employee relations, pay and rewards etc;

Goal attainment with environment sustainability.

Thus, a process model has been created as a model of Green HRM where in the first step is been taken by the employees. The employees are observing many problems and imbalances in the environment so they can take steps to make certain changes in their workplace so they can contribute a little for the maintenance of environment. So for continuing same thing HR department have taken steps towards the same goal and have made certain changes in HR functions. Green inputs by employees in form of green competencies and attitude results in green performance of job by employees with the help of their green behaviour ultimately results in green performance and fulfillment of corporate social responsibility.

Thus, green HR requires: green employee having knowledge and skills about greening to attain its environment objectives ; green attitude with cognitive aspect(believing in greening), affective aspect(feeling positive about greening) and behaviour aspect(intent to behave in positive manner); green behaviour as green organizational citizenship behaviour, green interpersonal citizenship behaviour and green official behaviour; green results as green innovations and outcomes.Four roles of green employee: preserve, conserve, make or generate and non-pollute.

FINDINGS

It is very evidently seen that the awareness regarding the green HRM is spreading widely. This step towards greener environment are taken by many organizations around the globe. Companies might take environment friendly measures in the name of corporate social responsibility these days as well. It is seen that the employees from manufacturing industries know more about green HRM than IT industries. IT industries are more cognizant about saving electricity, online leave record, plastic free-zone, E- HRM, video conferencing, electrically record keeping. Recycled papers are nowadays used in various industries. Industries are also conducting exclusively designed training programs for employees which imparts right knowledge and skills about greening.

Companies Going Green

Table 1.3

2010	2012	2018	2020
UK took the initiative of launching the London carbon trading exchange.	US took a step to sign Kyoto agreement and become a leading advocate for actions to reduce the rate of global warming.	India becomes a key player in the CSR agenda with a focus on preserving the Indian culture and heritage.	Hybrid or fully electric cars will be in more demand in future and might dominate the petrol cars.

Source: PWC Report: Managing Tomorrow’s People

The companies are now focusing to develop a powerful social conscience and green sense of responsibility in the employees as the consumers today demand ethics and environmental credential as atop priority. The alignment of social and business agenda is seen. In today’s global business environment, the companies are facing increased competition and pressure. Along with this there is a pressure to work towards environmental sustainability as it is the need of the hour.

All this require the strategies and policies to be designed in such a way that it reduces the environmental impacts caused by the products and services offered. Clem(2008) adds that going green is the reflection of social consciousness around. Which can help in saving and preserving natural resources for the sake of smooth running of future generations. Nowadays customers are aware of environmental issues, hence there is an increase in the demand of ecological products. Gilbert (2007) identifies the green business activities as an activity that ensures less negative ecological impact or activities that are intended to directly impact that natural environment in some positive way. More business.com (2009) describe a green business as using less natural resources to complete the business tasks. Rather using sustainable methods and material such as recycling (paper, plastic, electronics, glass and aluminium) and using sustainable products (recycled, plant-based or organically grown).

With rapidly increasing environmental issues the role of HR has transformed into Green HRM. It is now dominating the future of corporations, big or small. There is now a growing need for integration of environmental management into human resource management. Some of the researchers have concluded in their research that the green HRM practices should be included in the HRM from entry-to-exist (Recruitment to Exist).

In the study by Renwich et.al (2008), the authors mapped a new process model and research agenda in green HRM. All the critical functions of HRM: recruitment, performance management, training and development, employees retention, pay and reward and exist have been taken here to propose how each of them can go green, which indicate the huge scope of HRM in contributing to the green strategy of the organization.

Nowadays green work-life balance is a new concept discussed, although the full potential of green HRM in theory and practice has not been realized yet. There is a need to acknowledge that environment relevant attitude and behaviour. Some actions that company can take to go green: Conducting an energy audit, recycle, reuse, reduce, telecommuting, buying green, implement green manufacturing process, implementing green policies.

Summary of Entry to Exist HR process

Table 1.4

RECRUITMENT
-Green Job description for employees (and green goals included into managerial job description) -Graduate perception of green practices (applicants can use green criteria) -Green job candidates -recruitment of employees who are “green aware” become part of the interview schedule. -Green employer branding (green employer of choice). -Green aspects introduced to the induction process (familiarization). -Becoming a green employer may produce other HR benefits, like increased staff motivation and/or engagement, reduction in labour turnover and increasing work force health.
PERFORMANCE MANAGEMENT
-Setting green performance indicators into performance management system and appraisals. - communication of green schemes to all levels of staff throw PMA scheme, establishing form- wide.

-Managers are set green targets, goals and responsibilities -Managers roles in achieving green outcomes should included in appraisals. -writing and integrating green criteria in appraisal.
TRAINING AND DEVELOPMENT
-Introduce training on EM, and processes/ material use. -Integrating training on instructions and generation of eco-values. -Employee skills should be developed and competence should be build in EM. -Train staff to produce green analysis of workspace. -Job rotation should be done to train green managers of the future. -Establish development of green personal skills -Staff losing jobs in relevant polluter industries should be re-trained
EMPLOYEMENT REALATION
-Staff should be made independent to form and experiment with green ideas. -Integrate staff EI and P into maintenance. -Employee health- line for guidance in green matters. -Tailor green EI scheme to industry/ company standards. -Increase line/ supervisory support and behaviour in EM. -Unions Negotiating green workplace agreements -Training of union representative in EM. -Green elements into the health and safety process.
PAY AND REWARD
-Green pay/ reward system. -Tailor packages to reward green skills acquisition. -Use of monitory based EM rewards. -Use of non- monitory based EM rewards. - Use of recognition-based EM rewards. -Develop negative reinforcement in EM. -Develop positive rewards in EM. -Establish PRP for all to gain green stewardship.
EXIST
-De/ briefing Of staff in EM in cases of dismissal. -Managers should ask whether green issues are reasons for resignations. -Role to exist interviews to gauge perceptions of from greenness. -Whistle – blowers accounts on start of form greenness. -Legal protection for green whistle-blowers.

Source: Renwick et al, 2008

Contemporary Green HR Practices in Selected Companies

There are many companies that took the initiative of looking into that matter of environmental concerns and integrating them with their business strategies, Google is one out of such companies. Google is now practicing the green HRM like other emerging green companies Google has hired a director who integrates the corporate environmental efforts, S.C. Johnson, Goldman sacks, Starbucks, Patagonia, Timberland have successfully used their environment friendly policies to sell their product and gain the attention of media. In India, green movement and green HR is still in a nascent stage with few companies following green agenda. Public pledge is taken by green Toyota that it would do business only with those concerns that are certified “Green”.

The Tata Groups also followed Green policies and made a list vendors and suppliers who deals with business without releasing toxic emissions that could harm environment. The companies are implementing Corporate Social Responsibility initiative which have green projects. IBM over past few years has undergone significant transformation, turning a strong multinational business into globally integrated enterprise.

Table 1.5

Author	HRM functions	Objectives	Data type	Findings
Sarkaris et al. (2010)	Training and development	Stakeholder pressure impact on environmental management principles.	Primary- survey approach	Employees presented with better training have better perception of environmental management system.
Jabbar et al. (2010)	Training, recruitment, rewards	Impact of Green HRM practices on team work , organizational culture	Primary-case study	Human dimensions impact implementation of green management principles.
Teixeira et al. (2012)	Training and development	Impact of Green HRM practices on team work , organizational culture	Primary- case study	Employees with better training is vital to promote a good environmental management system in any organization and build an effective organizational culture.
Grolleau et al. (2012)	Recruitment	Impact of environmental principles on recruitment.	Primary- survey	Professionals were concern with the environmental stance of a company.
Jabbar et al. (2012)	Employee empowerment, rewards and recognition and feedback.	Impact of HRM and environmental management on organizational	Primary - survey	Human dimension impact organizational performance as

		performance of the company		well as mediates environmental management system implementation
Daily et al. (2012)	Training and development	Impact of training and development related to environmental management on performance of employees	Primary- survey	All other facets of HRM related to implementations of green management principles are directly associated with good training.

Source: Cherian and Jacob (2012)

CONCLUSION

The aim of this paper is to provide a knowledge of how green HRM works and how can it effect the employees and organization practices and behaviour against environment. Green HRM has great importance in current scenario, because of degrading condition of environment. Employees in various education are conscious to save but are not well familiarized with the term Green HRM. The data collected from various sources made clear that, companies have been implementing numbers of green HRM initiatives. However, the approach should be made more seriously. It should be communicated well to the employees, encourage the employees to stick to such initiatives. The study computes that, employee participation and involvement would play a pivotal role in performing green HRM and will help in improving organizational environmental performance by focusing on waste management, recycling, maintaining health and safety standards etc.

The green human resource management is typically a result of green movement, it is related to the protection and preservation of the environment in order to save the climate from future disasters. Green ideas and concepts area beginning to gather pace with the HR space. There are several areas where companies and incorporate more environment conscious strategies like: Use of internet or teleconferencing to cut down on business travel and practicing through employee manuals, policies or other company information online to reduce printing. The companies can also promote the reduction of paper usage and should more on storing paper-work electronically. Some of the benefits that the employees and organization can attain by implementing green HRM in the organization include: Improvement rate of retention in employees, improved public image, improvement in productivity, improvement in attracting better employees, reduced utility cost, reduction of practices that caused degradation of environment.

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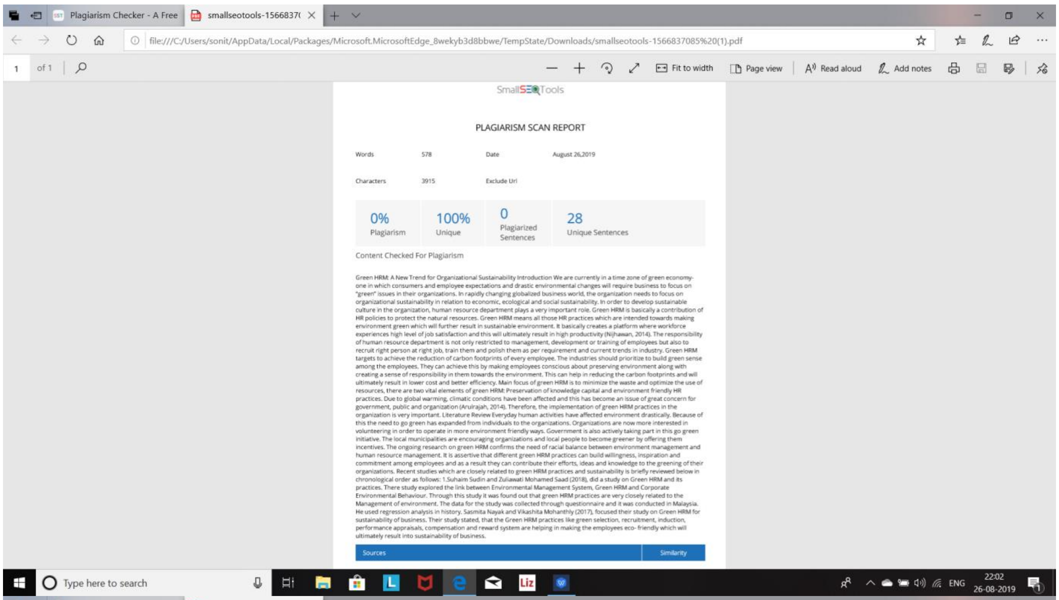

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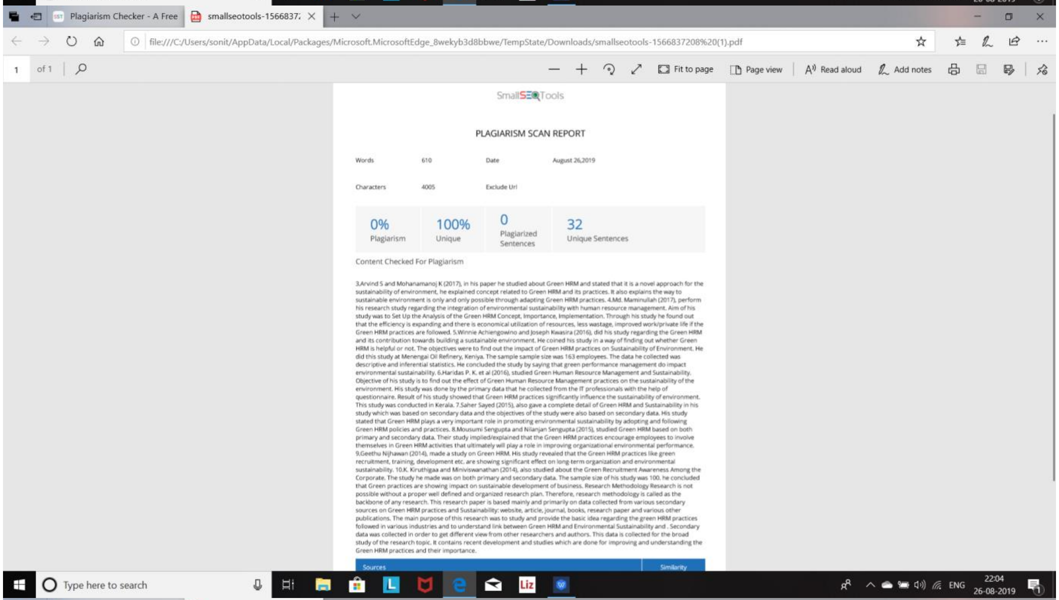

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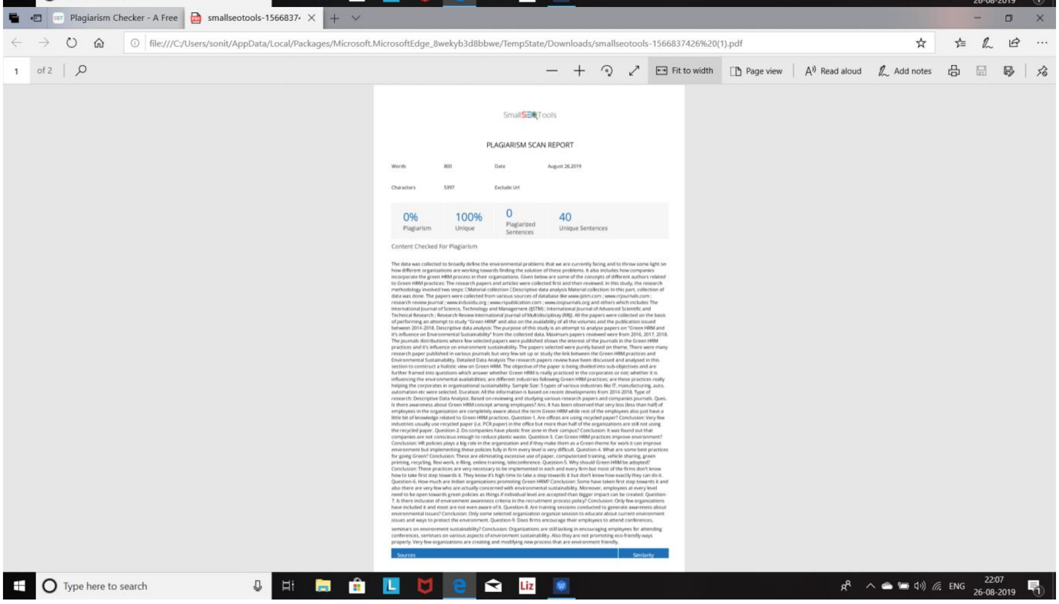

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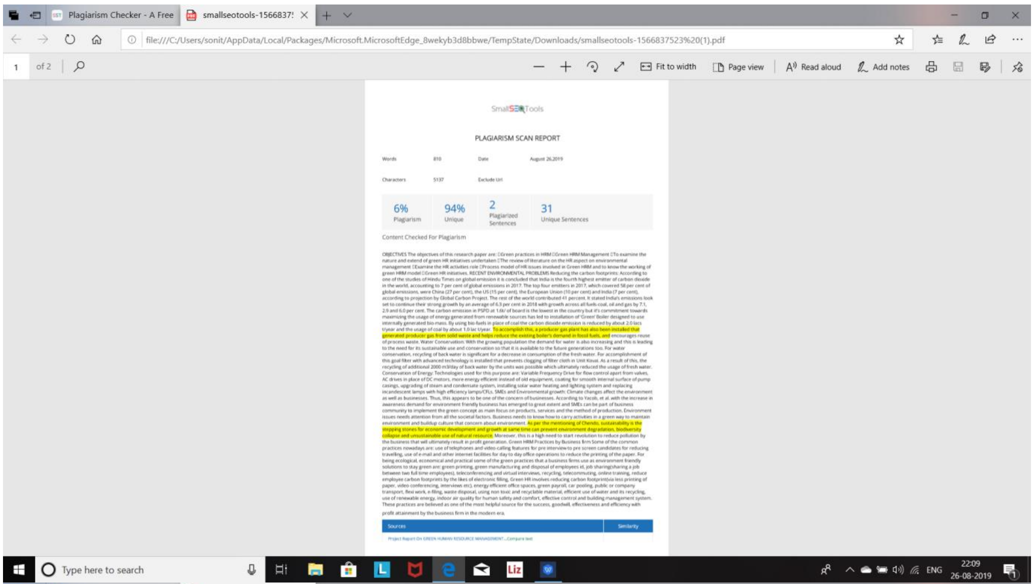
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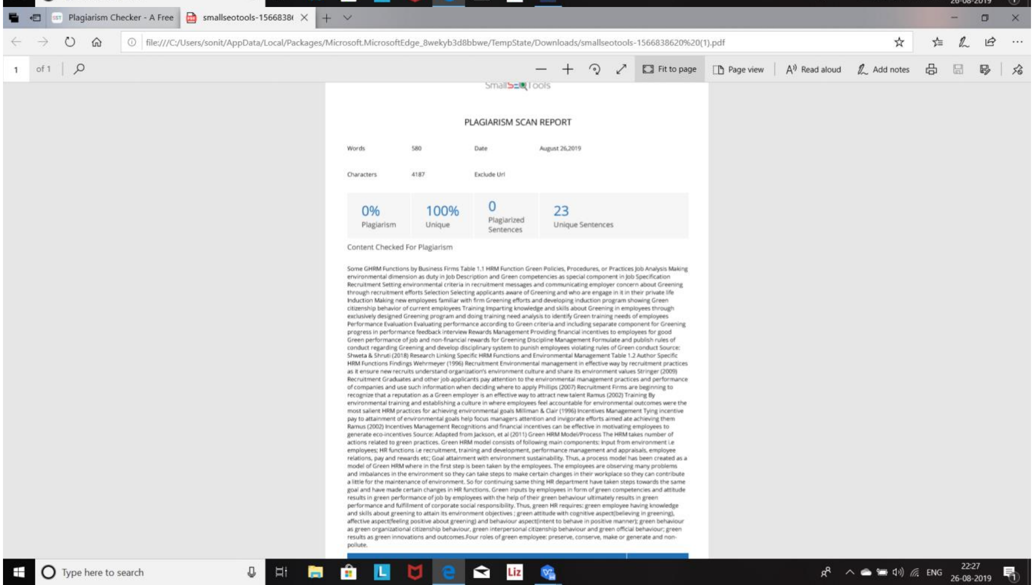
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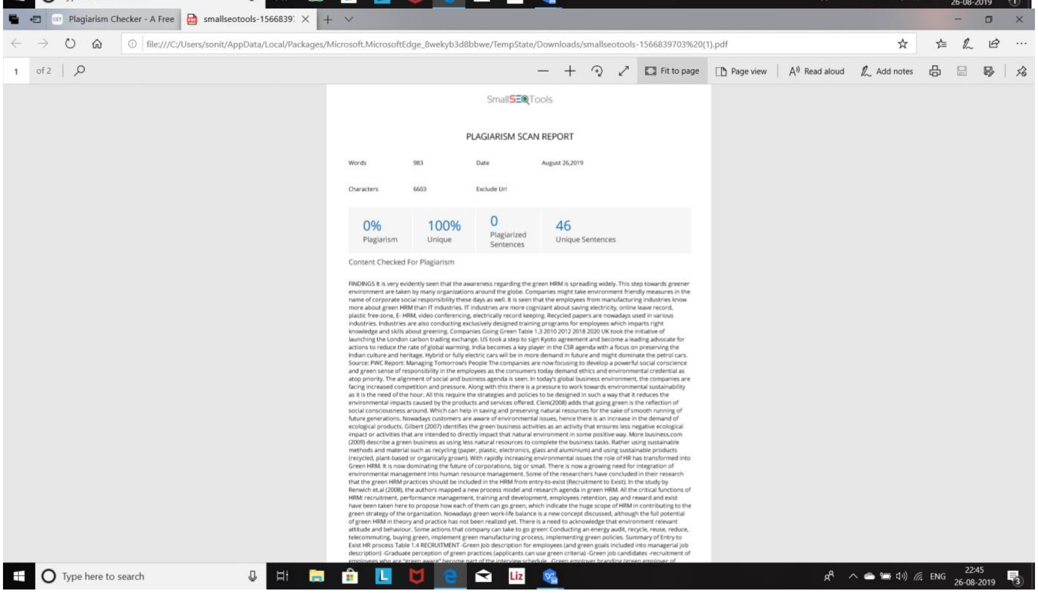
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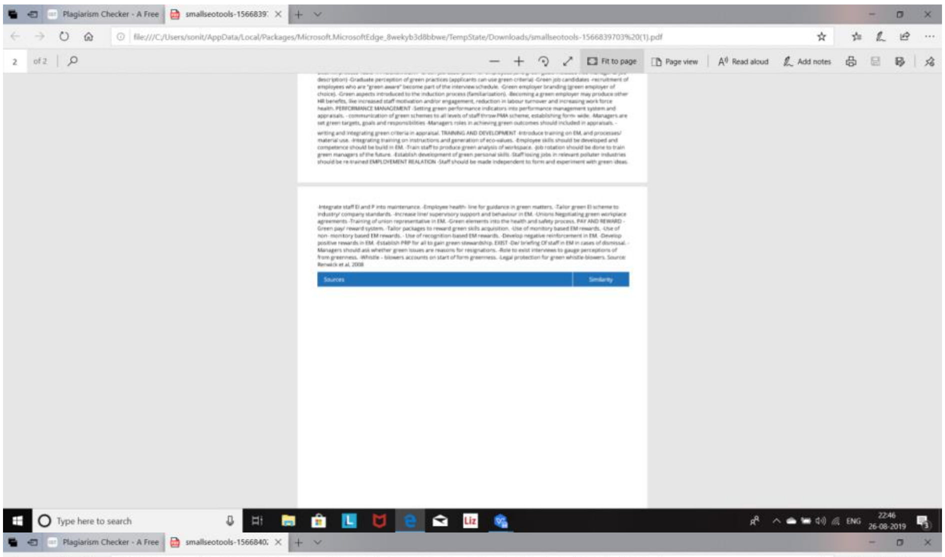
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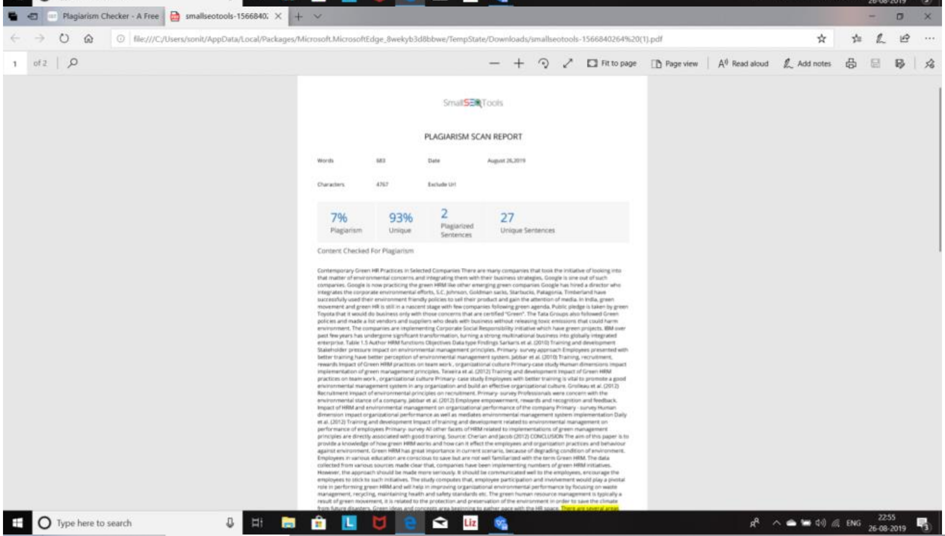
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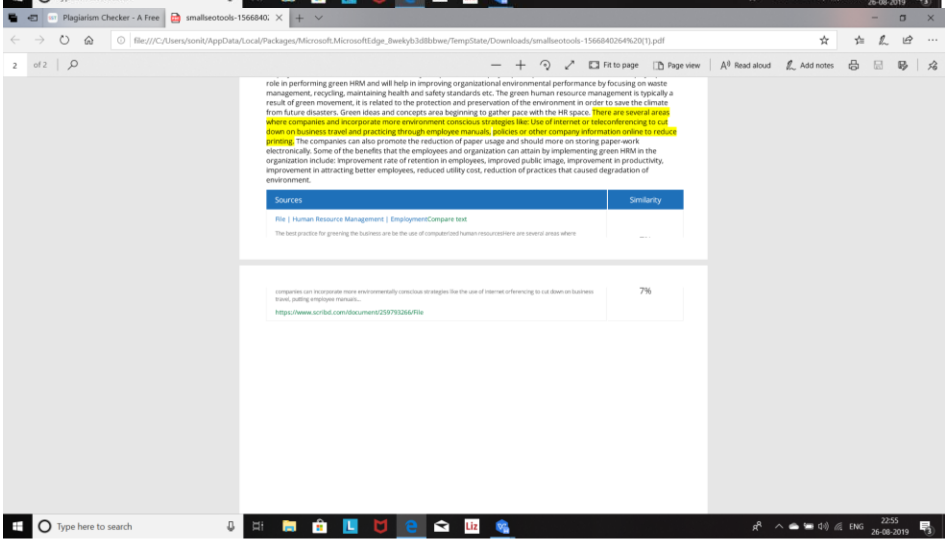
role in performing green HRM and will help in improving organizational environmental performance by focusing on waste management, recycling, maintaining health and safety standards etc. The green human resource management is typically a result of green movement, it is related to the protection and preservation of the environment in order to save the climate from future disasters. Green ideas and concepts area beginning to gather pace with the HR space. There are several areas where companies and incorporate more environment conscious strategies like: Use of internet or teleconferencing to cut down on business travel and practicing through employee manuals, policies or other company information online to reduce printing. The companies can also promote the reduction of paper usage and should more on storing paper-work electronically. Some of the benefits that the employees and organization can attain by implementing green HRM in the organization include: Improvement rate of retention in employees, improved public image, improvement in productivity, improvement in attracting better employees, reduced utility cost, reduction of practices that caused degradation of environment.
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