International Conference on

DIGITAL TRANSFORMATION FOR SUSTAINABLE GROWTH (DTSG 2022)

21st and 22nd Sept 2022

BBIT

Budge Budge Institute of Technology

Kripa Drishti Publications, Pune.

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PREFACE

Digital Transformation is the innovative approach to do business by utilizing Digital Technologies through Artificial Intelligence, Big Data, Cloud, IOT, etc to bring Operational Efficiencies to the multiple stakeholders –starting from Customers, Employees, Shareholders, Society, different Government bodies with the objective of sustainable growth. Thus Digital Transformation and Sustainability both are now integral part of an organization's strategy. We congratulate the initiative taken by the institute to organize the International conference on such an exciting and insightful topic, wherein various Academicians, Research Scholars, Under Graduate and Post Graduate students presented their research papers as well as exchanged their views on **"DIGITAL TRANSFORMATION IN SUSTAINABLE GROWTH".** We are really thankful to all the Academicians, Research scholars, Faculty members of BBIT, International Speakers and Session Chairs for their contribution to this Two Day International Conference on **"DIGITAL TRANSFORMATION IN SUSTAINABLE GROWTH"**. The conference was jointly organized by the MBA & CSE department of BBIT. The Conference dates were **21st and 22nd September 2022** respectively through **online mode**.

The Objective of the Conference was

1. To combine the opportunities offered by digitization with the goals of sustainability.
2. Provided a platform to exchange of information and an objective and differentiated discussion on sustainable digitisation. The transfer of knowledge and technology between different stakeholders was possible through this.
3. Further, to promote awareness and enhance research aiming in developing solutions.

As a result we received total 47 papers from Marketing, Finance, HR, Computer Science, Economics, and Social Sciences from different parts of the country as well as from the abroad. Participants were from **MDI (M), Tripura University, Aliah University, Lucknow University, Vidyasagar University, St. Xavier's, ICFAI, University of Burdwan, B. C. Roy, Symbiosis, Calcutta Business School, GIET University, IEM, NSHM, University of Rajasthan, Panjab University, Swami Vivekananda University**, **Chandigarh University** etc. Even Students from CSE & MBA departments presented their papers at this conference. Professor Jayanta Basak and Dr. Himadri Biswas guided B.Tech students from CSE Department. Dr. Prabal Chakraborty presented 6 case studies at this conference along with his students .Without the support of all the faculty members of CSE, MBA this could not have been possible. It was only possible because of sheer determination, focus on minute details, and dedication of the faculty members of both these departments. Specifically, Avijit Sir, Himadri Sir, Jayanta Sir, BKD Sir, Moumita Madam, Suparna Madam and Dr. Prabal Chakraborty were really active from the beginning. At the same time we are also thankful to our non teaching staff also.

The organizing committee was thankful to Dr. Subhangi Gupta (Executive Director of BBIT), Vice-Chairman Sir, Chairman Sir for continuous support and encouragement for this academic endeavour.

The inaugural program started at 10 am on 21.09.2022 with the speech of Dean MBA. The valedictory session started at 5.30 pm on 22.11.2022 and ended at 6 pm with vote of thanks. The best paper award was announced from each session as well as few bright young students was also got recognition from the session chair.

Out of total 47 papers with few rounds of review only 15 full papers were accepted for the final publications as an edited book.

Budge Budge Institute of Technology (BBIT), Kolkata (NAAC Accredited, UGC-2f recognized) also Approved by (AICTE, New Delhi, affiliated to Maulana Abul Kalam Azad University of Technology & West Bengal State Council of Technical & Vocational Education and Skill Development) organized an International Conference on **"DIGITAL TRANSFORMATION IN SUSTAINABLE GROWTH"**. The conference was organized by the MBA & CSE department of BBIT.

BBIT offers B.Tech disciplines of ECE, EE, CSE, ME and CE as well as in the MBA program. It is also worth mentioning BBIT has also been running Diploma programs in five disciplines like CE, CST, ETCE, ME, and EE. In the academic year 2018-19, CSE and EE will start M.Tech programs as well. It is a matter of pride to mention that BBIT has been accredited by the **National Assessment and Accreditation Council (NAAC)** and four existing B. Tech programs **(ECE, CSE, EE, and ME)** of the Institute have been accredited by the **National Board of Accreditation (NBA)**.

Vision

To realize the full potential of knowledge through universal education and research so as to foster a new era of development and growth through innovations.

Mission

To open new horizons of knowledge and to promote academic growth by offering state-of-the-art undergraduate, postgraduate and research programmes.

To keep pace with regional, national and global needs.

To play a pioneering role in shaping future generations through collaboration between academia and industry as well as between different national and international institutions.

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Marco Valeri is a Senior Lecturer in Organizational Behavior (Master Degree and Doctoral Course), Faculty of Economics, Niccolò Cusano University, Rome (Italy). His research areas include: strategy implementation, knowledge management, family business, crisis management, information technology and developing countries, network analysis. He serves on the Editorial Boards of several academic journals covering tourism and hospitality management. He is member of several editorial board of international journals. He received the award as Outstanding Reviewer in the 2021 Emerald Literati Awards, selected by the editorial team of Journal of Family Business Management (Emerald Publishing). He is Series Book Editor on New Perspectives in Tourism and Hospitality Management (Emerald Publishing).

Muhammad Kashif Assistant Professor, GIFT University Pakistan.
Total teaching experience: 17 years, full-time.
Publications: 63 (to include, journals articles and case studies)
Editorial experience: British Food Journal (Guest Editor), Asia-Pacific Journal of Business Administration (Guest Editor), South Asian Journal of Marketing (EIC).
Trainings offered: 60 online and on-site training programs in countries such as Tunisia, Malaysia, Philippines, India, Turkey, Indonesia, Sri Lanka, and Morocco.
Applied research projects: McDonald's Pakistan, Mall One, Faiza Beauty Cream, Lahore Leads University.

Moon Moon Haque, Ph.D.

Acting Dean, College of Healthcare Management & Economics at Gulf Medical University.

Dr. Moon Moon Haque is well trained in Applied Microeconomics (Health & Healthcare Economics, Labor Economics) and Applied Quantitative Analysis (Econometrics, Game Theory), and also proficiently acquainted with relevant statistical programming (EViews, STATA, SAS, LATEX, etc.) languages to perform empirical research. After his PhD degree in Business Administration (Concentration: Applied Economics) from the Fogelman College of Business & Economics (FCBE, AACSB accredited business school), University of Memphis (UoM), Tennessee, USA; Dr. Haque is presently associated with the Gulf Medical University, Ajman, UAE, as an Acting Dean, & Associate Professor at the College of Healthcare Management & Economics. Before this, he was working with the Fortune Institute of International Business, an autonomous business school in New Delhi [Jul 2018 - Aug 2019]; and Asia-Pacific Institute of Management, an autonomous business school in New Delhi, India [Jan, 2014 – June, 2018]. He also have had an experience of teaching at FCBE, UoM at the undergraduate level (Jan 2011 – Dec 2013). His passion for teaching as well as thriving in quality research is well exemplified by high standards set forth by the Department of Economics, FCBE, UoM.

Specialities: Applied Microeconomics, Health & Healthcare Economics, Labour Economics and a bit of general Management research.

CONTENT

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1. Approaches and Methods of Communicative English Teaching: Challenges, Transition and Transformation

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1.1 Introduction:

What function does language communication serve? It is the responsibility of the message's originator to convey all necessary information to the recipient. How can we acquire the necessary proficiency in the desired language? Whether to enhance linguistic skills based on the established grammar and composition principles or based on the characteristics or unique skills of the subjects in particular contexts? This eventually became the guiding notion of language education, and several techniques were created for it.

Let's examine the detours communicative English took me on to get to contemporary Communicative English Teaching (CLT). The development of communicative English and its history are crucial because they will give us the essential parameters and advantages that have been demonstrated. Regular communication among GST speech communities all over the world began to quickly grow in the middle of the nineteenth century. Greek or Latin, which were the traditional second languages taught in classrooms in European nations, were supplanted by the common tongue of another society. The student was required to keep track of speech sounds and create them as needed. Oral proficiency is now the main emphasis. Deductive reasoning was still used as a learning strategy. Grammar rules are carefully studied by the student before moving on to linguistic examples. Sentences that were automatically produced and unrelated to real-world events were presented to them for translation. The notion of learning Latin and Greek was still present. The objective of this approach was actually to enhance fluency in reading and writing, and language learning was evaluated solely in terms of competence in these two areas based on grammatical understanding and two-way translation ability. It is known as the Grammar Translation Approach for this reason. This approach started out as a merely utilitarian way for students to read, write, and pass exams in classical language. Written records were the most common form of communication at the period. As a result, spoken communication lacked formal significance. The importance of speech training was therefore minimal in this approach. In the first section of a well-known textbook from the 19th century by Seidenstucker, the norms and related paradigms are listed, and in the second section, French sentences are translated into German and vice versa. It established a strict but straightforward method for acquiring a second language. Grammar-translation was the most practical choice for an instructor without specialized training up until linguistics emerged as the major academic standard for language education. It worked well in schools where the curriculum was composed entirely of texts. The fundamental criticism of this approach, nevertheless, has been that it ignores oral skills and spoken communication. Only reading fluency in a language is insufficient in a society where multiple speech communities coexist peacefully and learning a second language is more of a necessity. Additionally, it is not supported by a coherent theory of language. Speech is acknowledged as the fundamental language, and the hostility to strict literary conventions such grammar translation eventually crystallizes into the well-known Reform Movement.

Several like-minded scholars were drawn together by Henry Sweets' Handbook of Phonetics (1877). In 1866, Paul Passy established *The Phonetic Teachers Association* and launched "The Phonetics Teacher", a newspaper written in phonetic letters. The goal of the Reformists was to analyze speech sounds. They looked for a technique to represent all the sounds found in spoken language. The founding members of the worldwide phonetic association were Sweet, Victor, Passy, and Jespersen. They completed the International Phonetic Alphabet (IPA) in two years. This movement called for some significant adjustments to language acquisition. They stated that grammar rules should be learnt through observing language samples. The target language was to be used for instruction rather than translation. Teachers were said to need specialized training in phonetics because the focus was now on oral language. These ideas undoubtedly lay the groundwork for a new theory of language acquisition.

In the final years of the nineteenth century, the Direct Method first disregarded classical literary texts and translations in preference of concentrating on everyday speech. This approach to language learning was naturalistic. Following the psychological premise of the direct relationship between form and meaning, Sauveur endorsed the idea of the utilization of variety of learning materials in the classroom, including images and artifacts. Due to the use of organic materials and context-sensitive language, this approach is known as the "Natural Method." Francois Gouin came up with the brilliant theory that adult language development depends on children learning the language abilities of speaking, listening, reading, and writing. He favored having the student infer the meaning of an unfamiliar word. The direct method recommended question-and-answer sessions for students, highlighting the significance of interaction in language learning. The Direct Method, with its emphasis on interaction, foresaw the communicative technique many years later. But it wasn't perfect. In addition to demanding highly qualified native speakers, it is also concentrated on basic classroom concerns. Eventually, disciplines like linguistics, behavioral science, and anthropology contributed to our understanding of language development. For language acquisition, phonetics and grammar structure are no longer sufficient.

Aural-oral competency was given the most emphasis by the audio-lingual approach, a postwar creation, along with the Direct Method. It was founded on Behaviorist Psychology and Structural Linguistics. As these components are connected for the encoding of meaning, linguistic factors like phoneme and morpheme were the basic foundation of learning languages. The difficulty with learning foreign languages has been attributed to many structural components. Therefore, the primary goal was to grasp the largest target language's structural pattern. According to behaviorist psychology, imitation and habit building are also important factors in language learning. According to behaviorists, imitation and repetition are crucial for language acquisition. A younGSTer picks up sounds from their environment and repeats them until they become habitual. Repeating particular language patterns becomes a component of the Audio-Lingual approach. To offer students enough training, elaborate facilities including language laboratories were created up. This approach places an emphasis on speaking and listening abilities and provides reading and writing materials to support oral learning. The educators were given clear instructions that students should not talk before they have listened something, read before it is said, or write before it has been read. The terminology in a school is also governed by the subject matter experts. There weren't too many new words introduced to the pupil at once. In the decades that followed, linguists and instructors both embraced the audio-lingual approach. The Army Specialized Training Programme uses audio-lingual training techniques in various European nations to teach foreign languages to military personnel. Because of this, the army way became well-known. However, there have been both practical and conceptual criticisms of the methodology. The ideas were tedious and mechanical in the learners' eyes.

The arguments Noam Chomsky made against behaviorist psychology shook the conceptual groundwork. Language is not a habit-forming system, said Chomsky. Human language is not a behavior that can be copied. The expressions are produced by the learner's understanding of abstract rules. Additionally, originality sets human language apart from other methods of communication. The sophisticated A-L equipment was gone by the early 1970s. Our ideas about language and how it should be learned have changed significantly as a result of Chomsky's theories. The approaches were dynamic and typically eclectic; the young language learners were no longer offered any established training methods.

Diverse linguistic theories were employed as input by the methodologist. In reality, the Communicative Language Teaching theory is a conglomeration of various modern issues. Early on in the method's development, the notional-functional curriculum was the topic of all conversations. The cornerstone of the study was an analysis of the semantic and functional domains of language utilization. The two systems of meaning associated with communication in any language, according to Wilkins in 1972, are notional category (concepts like time and quantity) and functional meaning (like requests or denials). These twin tasks are necessary to comprehend linguistic systems.

Since the aim of language learning was to improve communication skills, communicative techniques viewed language as primarily a social behaviour. Chomsky defined proficiency as the learner's internalized understanding of his own language's grammar. This is the learner's abstract capability, which causes him to develop appropriate but unneeded sentences and expressions. The sociolinguistic and pragmatic elements, in Dell Hymes' opinion, demand more weight. Speakers construct grammatically sound expressions based on their competency while being conscious that not every expression will apply to every situation. Along with grammatical correctness, politeness, requests, prayers, and commands are crucial factors in determining the context of a speech. The social component of the communication is greatly completed by pitch and tone. A learner who is communicatively competent moves from grammatical accuracy to social compatibility. The student must acquire the linguistic skills necessary for various relationships and contexts. As a result, learning a language involves a continuous transition from form to function and back again. When William Littlewood states that Communicative Language training must pay systematic attention to both functional and structural components of language, he effectively summarizes the issue. It is quite challenging to characterize the communicative English teaching methodology from a technical standpoint. There were up to eight different language education paradigms in the eight years between 1975 and 1983, all of which claimed to be communicative. All of these strategies reasonably concur at the level of learning theory. There are considerable variances in the curriculum and teaching methods. A list of characteristics of the communicative perspective of language was compiled by Richards and Rodgers. Everyone agrees that language serves as a mechanism for expressing meaning in a particular situation. Introduction and interaction are seen as language's main purposes. The main components of a language include not just its syntactic and semantic elements, but also its classifications of functional and communicative meaning, as demonstrated in speech.

In conclusion, there is a wide range of Communicative Language Teaching education. The approach builds on the direct method's emphasis on oral proficiency and moves on to the Hymesian notion of language as the functional demand. CLT had to go far to arrive at its current state. CLT has altered over time to become better suited to the demands of relevant to professional requirements as needs and requirements have evolved. It has become more significant in our country as well. But regrettably, the success rate for communicative courses in universities and colleges is not very encouraging, particularly in rural areas. If contemporary Indian experts pay more attention to providing proper training in Communicative English Teaching, India will genuinely shine.

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2. HR Record Keeping A Study of Transition from Manual to Digital Platform

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Abstract:

The early 1980s saw the remarkable technological progress, which had a profound effect on workplace cultures around the globe. Similar to other disciplines, human resource management has benefited from technological advancement. After becoming digitalized, practically all ancillary labor in the human resource management industry saw a significant change. Prior to the development of technology, the majority of firms typically kept a handwritten record of all information pertaining to their employees. Yet, over time and with poor use, many of these data were lost. Currently, there are hardly any manual data. This is largely because digital record keeping has become the norm for the great majority of businesses, worldwide. The article that follows makes an attempt to highlight the significant change brought on by the switch from manual to digital platforms.

Keywords:

digital preservation, HR, critical role, optimizations of operations, digital technology, convenience sampling strategy

2.1 Introduction:

The first organised record-keeping procedures were adopted by corporations in the early 20th century in order to manage a database for their personnel. This is when the history of human resource record management began. HR record management has changed significantly since then. Businesses started keeping manual, written records of basic employee information, like attendance and payroll records, in the early 1900s.

Businesses started keeping track of employee data, such as job history, education, and performance throughout their time with the company during the 1920s by creating personnel files. Record-keeping became more uniform across enterprises in the 1930s with the development of standardised forms for employee records.

Businesses started using computers to manage employee records in the 1960s and 1970s, which improved the record-keeping efficiency and accuracy. The development of HR information systems (HRIS) in the 1980s and 1990s, allowed for the consolidation of several HR operations, including payroll, benefits, and performance management, under a single system. With the introduction of cloud-based systems, mobile applications, and sophisticated analytics tools in the 2000s and beyond, digital record-keeping has moved to a higher level of sophistication. The management of HR records is currently evolving, with a focus on data protection, security, and compliance, as well as the use of emerging technologies like artificial intelligence to improve HR procedures. To stay up with the rapid modernization of the workforce, HR must implement new processes and procedures in light of changing time and demographics. The most important shift affecting organisations right now is the digitalization of HR, which has been widely adopted in recent years. In human resources, the switch from paper to digital record keeping entails going paperless, automation, employee self-service apps, social media recruiting, virtual reality training, workplace gaming, people analytics, borderless training, digital platforms that connect disparate groups of people, digital culture, etc. Hence, employing specialised software to convert paper-based personnel files, forms, and other HR documents into electronic format can expedite procedures, boost efficiency, improve accuracy, and improve data security and accessibility.

2.2 Literature Review:

HRM has evolved from a traditional role in organisations to a more prolific, progressive and innovative semblance in executing resolute drives such as proficiency-based recruitment, entrepreneurial compensation, result-oriented performance management, and human resources emancipation. The digitalization of the HR Management function provides an example of a transition towards an enhanced inventive & futuristic approach. As the management of HR functions have undergone a digital metamorphosis, it became extensively capable of surpassing alternative reinforced objectives (Makridakis, 2017). Top-echelon in the field of HRM has pointed out that the advantages of e-HRM is inclusive of two aspects – first is extensive analytics & secondly a comprehensive high-performance level, which contributes to a greater level of efficiencies, particularly during recruitment (Khahro et al., 2021). This can be attributed to replacement of manually prepared curriculum vitae (CV) and AI assisted screening that accomplishes the aforementioned tasks promptly, promise a greater chances of retrieval of previously inaccessible datasets & maintain transparency (Abolhassan, 2017); real-time monitoring of the workforce (Bondarouk, 2017); (Bersin, 2012) & thus influences HR managers prediction processes. In a summary of research exploring the effect of automation of HRM, the precise areas of e-HRM, it has been indicated that digitalization indeed has had the greatest impact on recruitment and selection procedures (Lumi, 2020). HR managers now use social platforms engaging in recruitment as well as teleconferencing, like Facebook, Googlemeet, Skype, WebeX, LinkedIn and others, as digital revolution has increased the effectiveness as well as efficiency of the HRM function. Thus, digitalization has made an impact on employee training & development as well with the aim to confront leaders in business to embrace the evolving cybernated paradigm along with accomplishing the strategies as well as primary goals of HR professionals (Frey & Osborne, 2017). Emphasising that revolution in HRM is facilitating the value-added perception by HR managers, while also ensuring that HRM plays an essentially critical role within enterprises (Kaji et al., 2019).

Lumi's 2020 summary of research, investigating the effects of digitalization, confirmed the impact of automation of HRM. His reference about definitive functionalities of HR management indicated that personnel file maintenance & recruitment has been extensively revolutionised by digitalization (Lumi, 2020).

Not only has digitalization shaken previous plans for setup and growth, but it has also propelled the objectives of preparatory work and execution. The goal of training is to challenge industry leaders to adjust to the transforming quantitatives. Some authors argue that user engagement during formulation and maintenance in e-HRM is critical to outcomes & accomplishments (Kossek, Gash, Nichol & Young, 1994), in contrary to others who opined that there isn't enough evidence to prove the same with certainty.

2.4 Objective of the Study:

The objective of the study was to find out the advantages of digital record keeping by the HR Department and for that reason we conducted interview sessions from 30 HR Managers of different sectors. The core concept of the study was to understand how digital evaluation radically changed the record keeping of Human Resource Department and consequently find out the immediate consequence of the digitalization of work process (Fabbri & Scapolan, 2018).The concept of Digital transformation can not only be viewed as a way for empowerment of employee but also the optimization of operations, digital transformation may also complicate the way in which employees are managed (van den Berg et al., 2020).

2.4 Research Methodology:

We made an effort to conduct interviews with HR managers from a variety of areas in order to perform my study. I contacted them via email, extended a WhatsApp invitation, scheduled a meeting, and even performed telephone interviews. Many HR managers declined to cooperate, but we still got assistance from 30 managers in all, on whom my paper is based on. The list below serves as an example of my process for choosing HR Managers:

Gender:

Male	09
Female	21

Age:

Age Group	No of HR personals selected for Interview
21-30	12
31-40	15
41-50	3

Educational Qualification:

Post Graduate	26
Graduate	04

Experience:

Experience	**No. of HR personals selected for Interview**
0-4 years	3
5-9 years	8
10-14 years	14
15-19 years	5

Industry:

Manufacturing	5
Service	25

We used a convenience sampling strategy for our research and created a statement-based questionnaire and asked HR staff to complete it at their convenience. The sampling was collected only from Kolkata. The claims are listed below:

- Employee Record keeping digitally is easier and time saving
- Digital CV does help to screen potential candidates for interview
- User-friendly HR Software
- It is cost saving to the company to go digital for employee record
- Efficient use of manpower resources using digital technology
- Need of training the digital record maintenance
- Transparent view of individual employee profile
- Easy update of any upgradation of employees
- Use of cloud technology to prevent loss of data
- 10.Overall quite satisfied by using digital platform

2.5 Findings and Discussion:

Area of Observation – Kolkata, West Bengal

Sr. No.	**Statement**	**Fully Disagree**	**Disagree**	**Neutral**	**Agree**	**Fully Agree**
1	*Employee Record keeping digitally is easier and time saving*			3	5	22
2	*Digital CV does help to screen potential candidates for interview*				5	25
3	*User-friendly HR Software*		2		8	20
4	*It is cost saving to the company to go digital for employee record*		5	4	11	10
5	*Efficient use of manpower resources using digital technology*				4	26
6	*Need of training the digital record maintenance*				7	23
7	*Transparent view of individual employee profile*			7	5	18

Sr. No.	Statement	Fully Disagree	Disagree	Neutral	Agree	Fully Agree
8	*Easy update of any upgradation of employees*				5	25
9	*Use of cloud technology to prevent loss of data*				2	28
10	*Overall, quite satisfied by using digital platform*			3	10	17

While 22 applicants of 30 participants—fully agree that maintaining digital records is very efficient and time-saving, 5 candidates—out of 30—agree but with some restrictions. We found it fascinating that 3 participants are neutral about the digital process. When questioned, they responded that some businesses have both manual and digital records, thus the issue of efficiency and time savings does not apply to them.

The notion that digital resumes make it simple to examine potential interview candidates was acknowledged by all 30 participants. All the human resources executives at the businesses we spoke with used various web resources to find and store candidate resumes. The great majority of these HR managers check and save CVs on the LinkedIn network for further use.

We've received some conflicting responses from the participants when we've questioned them about how user-friendly the HR software is. While 28 participants gave favourable assessments for the usage of HR software, 2 interviewees disagreed with the use of such software.

They contended that only those who are knowledgeable about computers can utilise the software effectively and with ease. Those who are accustomed to tracking HR records manually, most frequently find it challenging to switch to paperless documentations.

When asked about the cost savings a firm would experience from using digital software, we discovered conflicting responses. Five participants criticised the use of software and digital modes because, instead of reducing costs, they were steadily driving up the cost to the organisation.

While 11 individuals agreed that digitising HR records had helped the organisation decrease costs, only 4 employees expressed neutrality. It has been generally accepted that the digitalization of HR record maintenance has been crucial to the effective use of human resources when using digital technology, the need for training in digital record maintenance, the ease with which employees can be updated for any advancements, and the use of cloud technology to prevent data loss.

Of the 30 people interviewed, 7 employees expressed no opinion, while 23 others agreed that the digital preservation of employee records did indeed provide a transparent view of each employee's profile. Overall, we discovered that the majority of HR professionals have a high level of satisfaction with maintaining digital records.

2.6 Conclusion:

In conclusion, the discipline of human resource management has benefited greatly from digitalization. It is now simpler to manage employee records, automate HR procedures, and give employees access to their private HR data thanks to technology. Digital record keeping has decreased the danger of errors and inefficiencies associated with manual record keeping while increasing the accuracy and security of employee data. Moreover, by giving HR professionals better access to employee data and enabling data-driven decision-making, digitization has enabled them to play a more strategic role in their organisations. HR practitioners can now discover trends and patterns in employee data using advanced analytics technologies, which can assist guide talent management and workforce planning strategies. It is crucial to remember that digitalization also brings with it a unique set of difficulties, including issues with data security and privacy, the requirement for ongoing training and development of HR professionals, and the possibility that technology will eventually take the place of human interaction in some HR functions. Organizations must be aware of these difficulties and make sure that their digital HR strategies are built to meet the needs of both their employees and the entire company. In general, the digitization of human resource management is a potent trend that can assist firms in enhancing their HR services' accuracy, efficiency, and strategic impact.

In terms of human resource management, digital record keeping has many benefits over manual record keeping. HR workers may increase productivity, accuracy, accessibility, security, and cost-effectiveness by utilising technology, which will ultimately contribute to corporate success.

2.7 Challenges:

From our study, we have found that a minority of participants does not agree that the function of human resource management will change due to digitalization while others contend that the tasks and role won't change while the methods will (the role of the HR Manager won't change, but there will be more ways to complete the same task). The way human resource functions are carried out will change as a result of automation (automating labour-intensive manual processes). To fully adopt from manual to digital record keeping will be challenge faced by a majority of companies in future.

2.8 Limitations and Future Scope:

We are aware that the results of this study have some limitations. First off, as this research was based on a case study of a few selected organisation within one state (Kolkata) only, so we accept that it is impossible to generalise the findings. Also, only a small number of samples (30) could be collected on which our findings are based. Yet, by demonstrating the effects of digitization on HR managers, this study advances understanding. The following have been the limitation of our study:

A. *Sample size* – We faced a major setback in the form of number of responses we received from the HR personnel. We aimed for at least 50 responses but in the end could only collect 30 responses. This has been a major limitation of our study.

B. *Geographical area* – Also, we selected Kolkata to be our area of study, thus reducing the scope of a much-varied response.

A qualitative study in this area has a lot of potential in the future. To get a more realistic image, testable hypothesis conversion could be applied. Although this study provides insightful information on HR managers' perspectives on the problems posed by digitalization, we think it would be fascinating to speak with HR specialists from other states that operate in other circumstances. In conclusion, evaluating results from research like this carried out in a wide range of organisational scenarios could to show an enhanced & poised perspective of HR management in this era of digitalization.

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3. Assessment and Recognizing the Impact of Employee Engagement on Job Satisfaction in The Steel and Other Heavy Metal Industries of West Bengal

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Abstract:

Employees serve as an asset in any organization, irrespective of industry type. Therefore, employee engagement is important in an organization. Employee engagement can be termed as the connection with the organization and also influence the person's dedication towards his/her work.

This manuscript highlights the significance of engagement of the employees in their job satisfaction in the steel and heavy metal industry of West Bengal. The report also highlights how employee engagement and job satisfaction lead to the loyalty and contentment among employees to the organization

Keywords:

Employee Engagement, Job Satisfaction, Loyalty, Contentment.

3.1 Introduction:

In every industry, employee engagement and job satisfaction have been important, as human resource is the asset of any company. With the emergence of positive psychology, work engagement has become popular within the workplace in the last few years. A workplace that encourages employees' energy, commitment, and contentment can motivate the employees to contribute to the organization's productivity. Job satisfaction is overly dependent on employee engagement. The term described employees' happiness and contentment in the organization. This manuscript focuses on the correlation between employee engagement and job satisfaction in the steel and heavy metal industry of West Bengal.

3.2 Literature Review:

According to Choudhury & Mohanty, (2019), employee engagement is not an independent factor within the workplace. The definition of employee engagement differs. The literature review system is defined to present the engagement of the employees, which is personal. This type of dedication and commitment is work-related. According to Li et al. (2021), employee engagement is a kind of multidimensional concept. Various things are included in this process like cognitive, emotional, as well as behavioral components. Based on the town talent report various types of emotional factors are mentioned to tie up with people's satisfaction and the sense of affirmation as well as inspiration that they get from their various types of work. A workplace that has various types of productive employees seems to have about 30%, which is mainly considered as the profitability of business.

The phrase "employee engagement" is not well defined. Employee engagement is defined as a person's increased emotional and intellectual attachment to their work, company, management, or coworkers. This connection motivates the person to give their work more discretionary effort.

Additionally, it was thought of as a way to gauge an employee's enthusiasm and passion for her company. They propel innovation and advance the company. The alignment of optimal job pleasure and maximum job contribution is represented by employee engagement. Employees' readiness and capacity to contribute freely and continuously on the work in a way that benefits their employers. A bottom line may be made or broken by employee engagement.

There are certain theories describing the study considering employee engagement. The personal engagement framework is one of them, which provide a better insight into the concept of employee engagement. According to the framework, employees express themselves more effectively, physically, emotionally, and cognitively in their specific roles while performing their respective roles in their workplace. Their excitement and attachment differ from others. So, the framework considers several situations to define the level of one’s engagement.

The need for Hierarchy was developed in 1948 by the American psychologist named Abraham Maslow. He maintained that psychological health is dependent on meeting the needs of the meeting. This meeting process is held in proper importance order. This concept mainly presents the advanced concept, which is mainly used before for addressing the growth of higher-level systems. At first, people present deficiency needs, which mainly belong to the low level. The needs of Maslow's hierarchy mainly present the needs of employees. This employment is based on social, ego, safety, physiological, and so on. He said that the employees can be motivated to the higher level of their needs which is self-actualization only if the lower needs are fulfilled. This arrangement can track human development and growth. From this, one can easily sequentially arrange the needs of employees. Now, using the same concept in any organization, the first defining factor of employee engagement serves salary, which provides them the opportunity to fulfill their basic needs and contentment. After that comes the safe environment and work culture which becomes the determining factor.

In the fourth stage, the need is for recognition and respect for their role. After that comes the need for self-actualization in which employees are focused on their personal development and growth within the company. Therefore, each factor is necessary breed loyalty.

Needs of Maslow's Hierarchy is also used to present the analysis concept of employees' involvement at the workplace mainly. An employee who is assigned to work has the responsibility to maintain the entire procedure and also must encourage coworkers. These are considered the essential important criteria of an employee. A worker who has the main focus to promote in the workplace should be focused on their role in specific work and also a crucial part or role in the workplace. They are almost engaged and are aware that they are a part of a larger enterprise, but they may leave if given a better chance. Not Engaged employees are those seeking new employment prospects, dissatisfied with management, and sometimes also with working conditions. Disengaged individuals are simply working for their pay, are unhappy at work, and are about to depart the organisation.

One of the things that affect employee engagement is leadership. The topic of authentic leadership in management is still relevant today and warrants discussion. Leadership is essentially the method through which a boss directs and motivates his workers to get the best results possible. One of the things that affect employee engagement is leadership. Genuine leaders are individuals who are extremely conscious of their thoughts and behaviours and who are regarded by others as being conscious of their own moral principles, knowledge, and strengths. Genuine leaders have various types of key features which are regarded as vital ones for that specific leader.

A genuine leader must be conscious of their principles, knowledge, and efficiency. Authentic leadership is a kind of pattern that provides positive strengths or power which are essential in a self-developing context. A genuine leader must be aware of their operating system, confident level, and optimistic nature. A trustworthy workplace will be produced through authentic leadership, which has the power to unite workers. By enhancing the identity of group members and organisations via hopes, beliefs, optimism, and positive thinking, authentic leadership may help enhance employee engagement.

As stated by Bardhan & Haque (2021), job satisfaction describes how the employees feel while performing their job in the workplace whereas Chanana (2021) described as an emotional response of the employees towards different operations in the workplace. Employee engagement and job satisfaction go hand-in-hand. The article is aiming to find out the contribution of employee engagement to job satisfaction. Recently, employee engagement and job satisfaction are considering having broader concepts. Employees who are concerned and engaged in the workplace are like to be have focus to the organizational goals.

Employee engagement and job satisfaction leads to loyalty in maximum cases. The factors that enhance employee engagement are also responsible for establishing loyalty. Employee loyalty is when employees willing to stay in a company for a long period of time. According to Saks (2019), employees who are more engaged are more willingly to stay in the organisation and are content.

According to Kwon& Kim (2020), another crucial factor in successfully managing a company is job satisfaction. Every person has a need that must be satisfied, which is job satisfaction. Someone will be persuaded to prefer his work if these demands are supplied. Job satisfaction is defined as the degree to which an individual or organisation achieves and maintains congruence with their surroundings. It is also observed how an individual employee adapts mainly to the demands of the company and not only this but also the converse system. This conversely system is a kind of process by which a business platform makes a type of work environment that is needed by workers and employees. Research demonstrates a significant and favourable relationship between genuine leadership, work happiness, and team dedication.

According to Saks (2019), talent management refers to an organisational structure where a number of procedures are intended to guarantee a sufficient flow of workers into positions within the firm. It is considered a very common thing to swap the words like talent strategy, talent management, succession management, and the planning system which is associated with human resources. While some studies see talent management largely from the standpoint of human capital, others see it more as a mentality with talent serving as the foundation for organisational performance. Others believe that a significant aspect of talent management is its close alignment with company culture and business strategy. It was revealed three different schools of thinking on TM.

Recruiting, selection, development, career and succession management are only a few examples of the standard human resource department processes, roles, and activities that are included in the first perspective's definition of talent management. On the grounds that it is "superfluous" or not much more than a "rebranding" of HRM, it is condemned. It involves having the right people in the right positions at the appropriate times. It is based on variables such worker skills, supply and demand, growth, and attrition. It is "a vital component to successful succession Planning managing the supply, demand, and flow of talent through the human capital engine." This viewpoint offers no incremental insight and is hence useless. The firm's system is mainly used to manage the performance system. This performance pool of talent system is a type of succession pool that is mainly used for various types of particular organisational borders, regardless and some specific positions.

The talent management procedure created looks like this: Establishing talent criteria is the first step, followed by creating defined strategies for the growth and training of critical positions for the business. Then, in order to quantify and organise the important roles to be filled, criteria are laid down. Afterward, implement a set of procedures to create standards for applicants to these crucial roles. The second step is choosing the talent pool selection group, which is making many attempts to get individuals from different organisational levels, roles, and degrees of employment ready to participate in talent management. The procedure for choosing talent entails locating talents and luring talent to the talent management team. The third stage is about the acceleration development process (accelerating program), which has been chosen by organisations by which the participants of talent management skill received a path of acceleration. The fourth step mainly deals with assigning concepts which is consider as key position of assignment which entails placing each graduate of the talent management programme and granting them the right to be placed in certain jobs as well as positions that have already been selected.

A brief overview of the West Bengal steel industry states that the Bengal steel industry has evolved after the development of 2007-08, mainly because of the robust steel demand. Due to the rapid increase of steel production Bengal steel industry has become a significant producer on the global platform. Speaking about the major producers of Bengal steel can be grouped into two- integrated producers and secondary producers. The integrated producers are mainly responsible for producing the iron ore and coke whereas the secondary producers are concerned with producing some of the leading steel producers are the Alloy Steel Plant, IISCO Steel Authority of India Limited, Durgapur steel plant, and so on. Some of the heavy metal industries are Bengal Iron and Aluminum Company, Jindal (India) Ltd. and so on. In this article, the study is limited to the iron and aluminum industry mainly in the heavy metal industry.

3.3 Objectives:

Following are the objectives for this article:

- The study aims to explore the concept of employee engagement and its impact on job satisfaction within the steel and heavy metal industry of West Bengal.
- To analyze the best ways to encourage employee engagement and job satisfaction within the concerned industry.
- To examine the consequences of employee engagement on job satisfaction of the employees towards to their work.

3.4 Methodology:

For this particular study, only the secondary research has been done by the research scholar. Previously published literature reviews, journals, articles, industrial reports have been considered for this study, and are re-analyzed.

3.5 Discussion on Findings:

This study highlights the relationship between job satisfaction and employee engagement. Job satisfaction is important to enhance employee engagement within the workplace. If an employee is satisfied with the role, contented with the work culture and environment, and is proud to be a part of the organization, he/she will eventually be engaged in the role. Studies have proven that the employees in the iron and steel industry of Bengal, are fond of their jobs, learning opportunities, work-life balance, and leadership, and therefore, the percentage of employee engagement is quite high in these sectors.[1] Therefore, it can be said, that employee engagement leads to job satisfaction in most cases.

[1]Men, L. R., O'Neil, J., & Ewing, M. (2020). Examining the effects of internal social media usage on employee engagement. Public Relations Review, 46(2), 101880.

The similar response comes from followers of authentic leaders who value transparency and trust; followers have faith in the leader. Self-awareness, balanced thought, internalising moral ideas, and relational openness are all characteristics of genuine leadership that demonstrate integrity, respect, and trustworthiness. Subordinates will respond favourably to their job and develop a stronger attachment to their superiors when they are seen as genuine, transparent, and trustworthy. Additionally, it asserts that employee engagement will develop as a result of management and leaders' dedication to fostering an atmosphere where employees constantly have a part in making decisions. The hiring, training, and advancement of exceptional personnel is the first step in the talent management process. The business will benefit from the talent management process in this way, and it will also affect how engaged an employee is with the company he works for. Employee engagement suffers when employers offer their staffs little job to do. In order to achieve high employee engagement, talent management is demonstrated in this study in the career planning process together with rewards and organizational support for workers.

Employee engagement is impacted by company culture and talent management procedures, but organisational support also has an indirect impact on employee engagement through its many aspects. Employee engagement is positively impacted by talent management strategies. Employee retention demonstrates that there is a modest association between talent management and work happiness. Talent management includes excellent performance motivation, training and development, and job enrichment. In contrast to the other two institutions, one university found a somewhat stronger association between talent management and work satisfaction. It is obvious that public universities have their own goals and objectives. To establish a positive connection between talent management and work happiness, many tactics may be applied. It has been claimed that talent management in this study had a favorable effect on work satisfaction. Job satisfaction is seen as a suitable metric to assess if an organization's implementation of talent management was successful or unsuccessful.

Now, job satisfaction within the company leads to contentment within the employees in the industrial sector of West Bengal. In most of the cases, it has been observed that employees, satisfies with jobs and are engaged with the organization are more likely to be loyal to the organizations as well. Considering employees' needs from Maslow's concept it can be said that, employees will willingly stay in an organization if those needs are fulfilled. Therefore, in most of the cases, it can be seen that employee engagement and job satisfaction leads to contentment and loyalty within the employees.

3.6 Limitations:

A significant amount of research has been performed to highlight the importance of employee engagement and job satisfaction in the heavy metal industry, mainly focusing on the steel, iron and aluminum industry of West Bengal. Despite using an adequate amount of secondary data, the study has some limitations.

A. The current literature lacks the inadequate content on the topic to indicate the connection between employee engagement and job satisfaction and its implementation strategies.

B. The conceptual studies approach the topic from the academic perspective of the company and more from management’s standpoint, ignoring the practical experience and opinions of the employees.
C. Employee engagement and job satisfaction in actual terms has been criticized as being little more than organization’s overall business plan and management fad.

3.7 Future Scope:

A single study can't cover every concept of employee engagement and job satisfaction. Further studies performed on this particular topic can be more extensive and may cover both private and public organizations. Future studies must be focused on the three main variables, talent acquisition, management, and employee retention. Moreover, one of the limitations of the study is that the secondary data shows some slight variations, future study can highlight the fact and considers only the most relevant data for the study.

3.8 Conclusion:

The article mainly focuses on the significance of employee engagement in job satisfaction in the steel, iron and aluminum industry of West Bengal. Shortly, the industry is going to experience a boom and for that companies are willing to enhance skilled employee engagement to support loyalty and contentment and henceforth, employee retention. The relationship between employee engagement and job satisfaction has been established. Though both of them bears separate meaning, but they are dependent on each other. The factor that affects employee engagement of an organization also leads to job satisfaction. Maslow’s hierarchy of needs and personal engagement framework can provide a clear insight of the same. The study also well established the fact that how employee engagement and job satisfaction breeds loyalty within the employees.

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4. An Exploratory Study of Young Female Consumers Buying Behavior Toward Branded Apparels

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Abstract:

Lifestyle of the larger section of the society is experiencing a change. The market trend is changing accordingly for apparels which is considered as the flag bearer of lifestyle element. Consumers' choice, selection for products especially for apparels is in a process of changing every then and now. Corporate are facing the greatest challenge of exploring and understanding the modern consumers and continuously trying to create a powerful brand as a means of overcoming this challenge. Indian consumers are in transition phase due to penetration of several multinational brands in Indian apparel market after globalization. Buying behavior of female consumer precisely young ones for branded apparels is a noticeable one. While visiting the showroom, the vast majority of young consumers who have purchase intentions already have a brand in mind. This is due to the numerous elements linked with that brand that are suitable for them. This study tries to understand and study this buying behavior of young female consumers. The study below explores the different factors which influence purchase decision and buying behavior of consumers toward branded apparels among young female ones using exploratory factor analysis.

Keywords:

Apparels, Brand, Buying behavior, Female consumer, Young.

4.1 Introduction:

During the most recent period in the history of marketing, the brand has emerged as the central component for all corporations in every industry across the globe. Brand management and exploitation are absolutely essential to achieving success in the market. This holds true for the ever-shifting conditions of the Indian market. The fact that India is a culturally diverse nation with a great deal of variety in terms of lifestyle brand gives it a significant role to play in this aspect. Corporate entities are confronted with a significant obstacle in the process of developing and managing powerful brands by striking a balance between developing markets and fickle customers. Because customers are becoming more and more brand conscious, it will be difficult for corporations to maintain their presence in the market until and unless they are able to create a powerful brand for their company. The consumer is the source of a company's true profit in almost all cases. When a consumer purchases a product, the company will have made revenue, but in order for them to do so, the company will have had to pay expenditures in the form of manufacturing, promotion, distribution, and so on. As a result, it is of the utmost importance for every marketer to make an effort to comprehend the requirements of the target audience by conducting thorough research.

This research might look into not only the goods and services which consumer intend to purchase, but also the methods by which they make those purchases, the locations and times at which they make those purchases, the quantity of those purchases, and the length of time over which they will continue to purchase a particular brand (Vikkraman & Sumathi, 2012). Consumers' purchase decisions are influenced by a wide range of internal and external influences, including their perceptions of the world, their self-concepts, their social and cultural backgrounds, their ages and stages in the family life cycle, their attitudes, beliefs, and values, their levels of motivation, their personalities, their social classes and many others. In order to build and successfully employ effective marketing strategies, it is imperative to perform a significant amount of research with the objective to understand the purchasing behaviors of the target market. In this age of dynamism, businesses have a responsibility to acknowledge the intricacies of the customers who are distributed across the market. Companies are engaged in an ongoing search mode in order to investigate the behavior of all different types of consumer demographics. Young consumers are the most notable category that contributes considerable effect on the buying pattern towards branded apparel. This influence comes primarily from the fact that they buy more branded apparel. In this study, the researchers attempted to study the purchasing patterns of young female consumers with regard to branded apparel in the city of Kolkata, which is a cosmopolitan city that is home to people from all over the country that make significant purchases of branded apparel.

4.2 Research Objectives:

Following are the objectives of this research:

- To study the buying behavior of young female consumers toward branded apparels.
- To explore the various factors those, influence the particular buying behavior of young female consumer toward branded apparels.

4.3 Literature Review:

The modern-day female customer is more interested in living a life that is comfortable and requires little effort. They are willing to spend more money on brands that they believe are worth the investment. They believe that purchasing branded products not only gives them value for their money but also serves as a status symbol.

Despite the fact that branded products are more expensive, consumers continue to choose them. Because of this, the current generation of customers has been given the moniker of "the brand savvy generation" (Sherlaker, 1995).

According to the findings of several studies, customer buying behavior can be influenced by brand consciousness due to the influence of a variety of other factors. Through a survey in Delhi, India, Saluja (2016) was able to demonstrate how characteristics such as monthly income, gender, and the influence of peers all have a role in determining how consumers behave with regard to clothes purchases. She also got to the conclusion that people like to shop the majority of the time with their closest companions like family members, friends, colleagues etc. Consumer purchase behaviour with regard to fashion attire is influenced by a variety of factors, including comfort, brand image, monthly income, gender, and peer influence. Other factors include decisions made by friends, family members, celebrities, and periodicals (Mishra & Agrawal, 2017; Saluja, 2016).

Maran et. al. (2018) examined the consumer's behavior towards branded readymade garments with respect to their age and income level. And found that quality is the most prominent factor affecting the consumer buying behavior followed by other factors like attractive designs, convenience, uniqueness, brand image, offers, advertisement and status symbol respectively (Doley, et. al. 2021). Many other factors are also involved in the female buying behavior towards branded apparel such as comfort, size, availability and choice of colors etc (Sujatha & Maneka, 2018).

According to Sanad (2016), a purchaser's choice of clothing and fabric goods, including clothing as well as fashion products, was influenced by a variety of factors. These components and qualities associated to the market encompassed a variety of socioeconomic, personal, psychological as well as environmental aspects and characteristics. The product's attributes, as well as the buying channel, pricing, and promotion, were among these features. According to research conducted by Lakshminarayana and Sreenivas (2017), point-of-purchase (POP) displays, advertisements, promotional schemes, and other promotional measures all have an impact on the consumer purchase decision, which in turn encourages consumers to make purchases of branded apparel.

According to research by Hassan et al. (2014), consumers chose branded clothing over non-branded clothing regardless of price not only because they want to appear attractive and impress other people, but also because the brand provides them with comfort and recognition. Sreerekha & Kumar (2018) explored the relationship between numerous aspects that drive consumer purchase behaviour pattern towards branded apparels, as well as the influence of various demographic, psychological, social and economic variables on the Indian apparel industry and revealed that the consumers give crucial importance to quality, price, promotional activities, gender and peer influence while making a decision.

The growing consciousness and understanding of fashion as a form of self-expression among consumers as a marketable trend has resulted in an increased desire for more choices and goods that serve the needs of both the fashion industry and the performance industry. According to a study, factors such as brand consciousness, the availability of multi-branded shops, income level, lifestyle, the price of the clothing, one's level of contentment with it, and one's level of expectations for it all have an influence on young female consumer buying behavior and their preferred option from among the many available dress collections (Mythili & Abisheka, 2020; Jadhav & Patil, 2020; Joshi & Khatri, 2020).

A growing number of categories of products are seeing female customers exert a substantial amount of impact over the distribution of purchasing power. (Gregan-Paxton and John, 1995). Female shoppers have a considerable impact on the way spending money is dispersed over a wide variety of product categories, including the clothing industry.

According to a survey that was conducted some time ago, college students have a unique self-image in which they see themselves as the pioneers of fashion and believe they are more interesting, dominant, and colorful than older generations (Goldsmith et al., 2000; Kaiser, 1990).

There is an ever-increasing demand for an analysis of the factors that influence shopping behavior in the Indian setting (Sinha & Banerjee, 2004). Customers are more likely to stick to their tried-and-true purchasing routines when they go to clothing stores that offer a high level of individualized care.

One of the most difficult challenges that a corporation must face in today's environment is developing and maintaining a strong brand name. Establishing 'brand equity' through the utilization of powerful brand and associated tactics that can assist businesses in a number of ways to manage competition and to maintain market share is one strategy for building a successful business. This approach can assist businesses in a number of ways to control competition and maintain market dominance.

4.4 Methodology:

This study is exploratory in nature and conducted in Kolkata, West Bengal, India. A sample size of 360 (i.e., n = 360) data was collected using non-probability sampling method from different parts of the Kolkata metropolitan area.

The demographic that served as the sample consisted of young female consumers in the age bracket of 18 to 30 years who have a sense of buying branded apparel. Data was collected through face-to-face survey interview.

Five-point Likert scale was being used to measure and analyze the data where 5 denotes ‘Strongly Agree’ or ‘Very Important’ and 1 denotes ‘Strongly Disagree’ or ‘Least Important’.

Descriptive Statistics were utilized in order to conduct an analysis on the gathered data to study the buying behavior of young female consumers toward branded apparel. Exploratory Factor Analysis, often known as EFA, was utilized in order to investigate the factors that influence the purchasing behaviour of young female customers with regard to branded apparel. Cronbach's Alpha Test and the KMO & Bartletts Test were utilized in order to determine the reliability and validity of the data before doing the study.

4.5 Empirical Analysis:

Demographic Characteristics of Respondents (n=360)

The respondents' (i.e., young female consumers considered for this study) demographic information is shown in the following table (Table 4.I):

Table 4.1: Demographic Profile

Demographic Characteristics	Descriptions	Frequency	Percentage
Age (Years)	18 – 21	86	23.9
	>21 – 25	139	38.6
	> 25 – 30	135	37.5
Education Profile	Undergraduate	95	26.4
	Graduate	148	41.1
	Post Graduate & Above	117	32.5
Marital Status	Single	198	55.0
	Married	162	45.0
Profession	Student	102	28.3
	Service	141	39.2
	Self Employed/Business	58	16.1
	Homemaker	59	16.4
Household Income (Rs/month)	Upto 50000	52	14.4
	50001 - 75000	96	26.7
	75001-100000	101	28.1
	More Than 100000	111	30.8

4.6 Reliability Test:

The Cronbach's Alpha coefficient, which is the most common and widely used test of inter-item consistency reliability, was applied to the questionnaire in order to evaluate the items' level of internal consistency.

The value of Cronbach's Alpha is displayed as 0.820 in the following table, which can be found below. It is possible to deduce from the fact that the value of the Cronbach's Alpha reliability coefficient is greater than 0.70 that the items have a relatively good level of internal consistency, which justifies the acceptance of the study.

Table 4.2: Reliability Statistics

Cronbach's Alpha	N of Items
0.820	33

4.7 Analysis of Buying Behavior:

The purchasing patterns of young female customers with regard to branded clothing are outlined in Table 4.3, which may be found here.

Table 4.3: Buying Behavior of The Young Female Consumers Towards Branded Apparel

Items describing young female on summers buying behavior towards branded apparel	Mean	Interpretation
Purchasing branded apparels can be noticed and admired by others.	4.35	Consumers are in **strongly agreement** with this item
Many people buy branded apparels to show off.	3.54	Consumers are in agreement with this item
Branded apparels are a symbol of social status.	4.07	Consumers are in **strongly agreement** with this item
Purchasing branded apparels makes one feel superior and unique.	4.03	Consumers are in **strongly agreement** with this item
I stop being interested in branded clothing that is worn by the broader public.	3.87	Consumers are in agreement with this item
I like those branded apparels with unique style.	4.16	Consumers are in **strongly agreement** with this item
Purchasing branded apparels can help enhance one's image.	3.89	Consumers are in agreement with this item
Consumption of branded apparels is a symbol of successful people.	3.81	Consumers are in agreement with this item
Consumption of branded apparels reflects an affluent lifestyle.	3.34	Consumers are in agreement with this item
My main justification for purchasing branded clothing is the improved quality of the goods.	3.60	Consumers are in agreement with this item
My decision to buy branded clothing is influenced by whether the products fulfill my quality requirements rather than by how popular they are.	3.90	Consumers are in agreement with this item
I will buy branded apparels because I appreciate the brand's designer's sense of style.	4.12	Consumers are in **strongly agreement** with this item
Purchasing branded apparels can satisfy my own pleasures.	3.68	Consumers are in agreement with this item
Branded apparels can provide sensory beauty and pleasure.	3.56	Consumers are in agreement with this item
The act of acquiring branded clothing can bring consumers satisfaction and pleasure.	3.60	Consumers are in agreement with this item

4.8 Exploratory Factor Analysis (EFA):

Using the Principal Component Analysis Method, exploratory factor analysis (EFA) was conducted to investigate the variables influencing young female customers' purchasing decisions regarding branded apparel.

This was conducted for 18 variables (as displayed in Table 4.4) which affect young female consumers' purchasing decisions regarding branded clothing using Principal Component Analysis Method.

Table 4.4: List of Variables for Factor Analysis

Sr. No.	Variables	Sr. No.	Variables
1	Quality	10	Style
2	Status symbol	11	Color & Design
3	Price	12	Comfort
4	Longevity	13	Fashionable
5	Reliability	14	Others Opinion
6	Fit	15	Official Purpose
7	Attractiveness	16	Brand Image
8	Uniqueness	17	Advertisements
9	Pride	18	Celebrity Endorsement

The results of KMO and Bartlett's Test, which are provided below in Table 5, suggested that factor analysis is adequate because the KMO value is.656, which is higher than the acceptable limit of 0.5 (Field, 2009). Bartlett's Test also indicated that the factor analysis was appropriate. A Chi-square (2) value of 5819.649 at a significance level of 0.000 indicates that the correlations between items were sufficiently large for Principal Component Analysis (PCA) (Field, 2009). There were 153 degrees of freedom.

Table 4.5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		656
Bartlett's Test of Sphericity	Approx. Chi-Square	5819.649
	Df	153
	Sig.	.000

Result of rotated component matrix have revealed that five major component emerges from initial eighteen (18) variables as major influencers of the brand-related apparel purchases made by young female consumers. These components can be considered as **Five Factors** which affect how young female shoppers choose to purchase branded clothing. The present study indicates that only five factors (components) have Eigen values greater than 1 and in combination explained about 77.629 % of the total variance. Table 4.6 summarizes the exploratory factor analysis where the components are shown.

Table 4.6: Summary of Exploratory Factor Analysis Results (N = 360)

Variables	Component 1	Component 2	Component 3	Component 4	Component 5
Pride	0.794				
Style	0.715				
Uniqueness	0.477				
Fashionable	0.775				
Official purpose	0.865				
Status Symbol	0.774				
Brand Image	0.76				
Longevity	0.763				
Reliability	0.724				
Color & Design		0.829			
Fit		0.874			
Attractiveness		0.824			
Comfort		0.505			
Advertisement			0.579		
Celebrity Endorsement			0.818		
Others Opinion			0.652		
Price				0.815	
Quality					0.902
Eigen values	5.915	4.044	1.559	1.334	1.121
% of Variance	29.879	20.046	10.529	9.458	7.716
Cumulative %	29.879	49.925	60.455	69.913	77.629

All the explored components are termed as factors which influence buying behavior toward branded apparel in this study.

The first factor (component 1) has been named as *"**Psychological factor**"* which comprises of nine variables. Second factor (component 2) named "***Utility factor***" consists of four variables.

Three variables constitute third factor (component 3) which is named as "***Promotional factor***". The fourth factor (component 4) encompasses one variable and termed as "***Economic factor***", while the fifth factors (component 5) also formed by one variable is named as "***Quality factor***".

Table 4.7 summarizes the result of exploratory factor analysis where the explored factors with loading for each variable are shown.

Table 4.7: Result of Exploratory Factor Analysis

Explored Factors	Variables	Loading
First Component: Termed as Factor I and named as Psychological Factor	Pride	0.794
	Style	0.715
	Uniqueness	0.477
	Fashionable	0.775
	Official purpose	0.865
	Status Symbol	0.774
	Brand Image	0.76
	Longevity	0.763
	Reliability	0.724
Second Component: Termed as Factor II and named as Utility Factor	Color & Design	0.829
	Fit	0.874
	Attractiveness	0.824
	Comfort	0.505
Third Component: Termed as Factor III and named as Promotional Factor	Advertisement	0.579
	Celebrity Endorsement	0.818
	Others Opinion	0.652
Fourth Component: Termed as Factor IV and named as Economic Factor	Price	0.815
Fifth Component: Termed as Factor V and named as Quality Factor	Quality	0.902

4.9 Discussion & Conclusion:

Many people, especially among younger female consumers, think that a person's brand is one of the key elements in determining their social status. Consumers are able to demonstrate their individuality in terms of their sense of style and experience a sense of superiority, both of which are observed and respected by the general populace when they wear branded apparel.

The purchasing of branded clothing by young women is quite dependent on a number of elements, the most important of which are the psychological factor, the utility factor, the promotional factors, the economic factor, and the quality factor.

The purchasing decisions of young female customers with regard to branded apparel are heavily influenced by these five key criteria. The results of the survey make it abundantly evident that price and quality are the two factors that matter the most.

Younger female consumers have a strong conviction that the brand is seen as a method by which one can achieve admiration from others. It is projected and measured as a symbol of social status and distinctiveness, which in turn provides the consumer with a feeling of superiority in social strata. Branded apparel is worn by people who want to feel superior in social strata.

4.10 Future Research Scope:

In the course of this research, a total of 360 customers participated in a questionnaire. The greater number of respondents would increase with more regional market penetration for the purpose of data collecting, which would produce a better presentation from an Indian perspective. In this particular research project, only young female consumers are taken into consideration. It is likely that a more accurate and definitive analysis and result may be obtained by taking into account female consumers of all ages. Additionally, the participation of male customers would reflect a market that is more inclusive of the result. There is room for additional study in the development of a mathematical model to relate the numerous socio-economic characteristics with the purchasing behavior of young female consumers with regard to branded apparel. If this model is established and proven, it has the potential to be extended to cover other product categories that are branded.

4.11 Implications:

There is no room for argument regarding the assertion that the consumer places an increasing amount of importance on the brand as a selection factor. Therefore, brand management and branding strategies have become the most sought-after tactic for marketers, as they offer the most potential to positively affect the decision-making process of consumers. The younger generations are the customer demographic that is most brand conscious, particularly when it comes to fashion. They have a strong interest in following the current pattern of brand users in the market. Companies that deal in branded apparel are required to take into consideration the elements that impact customer purchases.

The exploration of buying behavioral variables will assist marketers in strategizing their operations linked to brand management. Marketers need to have an understanding of their customers' shopping habits in order to create consistent marketing efforts that will increase the frequency of their customers' purchasing behaviour from infrequent to frequent. The results of this study have the potential to significantly advance this field.

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5. The Role of Green Human Resource Management Practices on Employee Performance: An Empirical Study on Health Care Industry of West Bengal, India.

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Abstract:

Research Aims: *Presently, credible companies are putting green HRM practises into practises quickly. the concept of green HRM arose in relation to environmentally friendly business practises. Employers are paying more attention to green HRM practises such 'Recruitment and Selection,' 'Pay and Rewards, 'Training and Development', and 'Performance Management and Appraisal.' This study put a lot of attention on assessing how green HRM practises affected employee performance in India's healthcare industry.*

Design/ Methodology/ Approach- *The present study emphases on responses of thirteen statements related to Green HRM from 400 respondents at all levels in various hospitals located in West Bengal, India. The hypothesized relationship between the Green HRM practices has been tested over the dependent variable of employee performance. The researcher adopted regression analysis and ANOVA to analyses the relation between the proposed variables.*

Research Findings *– The study's overall findings showed that employee performance was significantly impacted by the suggested green HRM methods. The summary of the model indicates that the model is most influenced by performance management and appraisal. The results also point to the necessity of a customised plan to boost worker performance using green HRM practises.*

Keywords:

Green HRM, Recruitment & Selection, Pay and Rewards, Training and Development, Performance Management and Appraisal, Employee performance, Health care Industry

5.1 Introduction:

5.1.1 Background Research:

The industrial sector primarily supports the Indian economy. The chemical, food processing, steel, cement, information technology, banking, and hotel industries are just a few of the numerous industries in India. These industries provide substantial contributions to the economy in a variety of ways, including through generating jobs and providing goods and services. The companies that are expanding the quickest among them create wastes that, in addition to harming the GDP, have a significant detrimental effect on the environment in relation to global warming, acid rain, and other climatic changes. Human life, wildlife, and the overall eco system will all be significantly impacted by such environmental contamination. However, the growing negative effects of pollution on our daily lives force people and businesses to embrace a range of green measures. As a result, HR managers in the firms have now implemented a number of cutting-edge "Green HRM policies." Thus, it is essential to build environmental management systems, environmental communication, and personal accountability for environmental actions.

5.1.2 Green Human Resource Management:

Any company that manages its personnel must conduct a variety of duties, including hiring, training, monitoring performance and pay, managing employee relations, etc. Human resource management, which deals with managing personnel, must also carry out a wide range of responsibilities. Green human resource management, on the other hand, relates to environmental issues broadly and blends environmental management with HRM (Wioletta Skibinska & Kott, 2015). Consider green HRM as a group of HRM strategies used by companies to improve the environmental performance of their workforces (Ullaand & Jahan, 2017) for another definition of the term. According to Hassan Jabbar and Abid (2016), green HRM positions make an effort to align the fundamental HRM responsibilities with a company's green management objectives. The duties entail "green" staff contacts, "green performance management," "green compensation," and "green training and development" (Opatha et al., 2014)

It also serves as a management strategy for reducing the carbon footprint of the workforce through electronic filing, carpooling, teleconferencing, telecommuting, and online training (Goswami G & Kumar R, 2015). The environmental performance of the firms will be further improved by these green human resource management techniques. Cost savings, improved public perception, a decrease in carbon emissions, and an environmentally friendly workplace are further advantages.

5.2. Review of Literature:

The work of Wehmeyer (1996) contained the first important investigation in the area of green human resources. According to the study, which looked at more than 100 small and medium-sized businesses in Europe, hiring is still the most important part of green HR strategies. The study came to the conclusion that effective environment management might be aided by hiring, provided that new hires are made aware of the environmental culture of the company. Additionally, Stringer (2009) underlined that the most crucial tool for implementing Green HR practises was recruitment. However, they have mostly focused on the connection between Green HR activities and employer branding campaigns. Tulasi Das and Sreedhar Reddy (2016) sought to understand how employees in the banking and insurance industries felt about green HRM practises and how that felt in connection to employees' demographic characteristics.

The analysis of variance (ANOVA) result showed that respondents' levels of education had a substantial impact on respondents' opinions of green HRM practises among employees. Employee perceptions of the adoption of green HR practises in the IT organisation were examined by Surineni Kamalakar Rao and S. Chandra Mouli (2017) and discovered that strategies like green employee engagement, green recruitment, and online training programmes could help the IT organisation become more sustainable.

Another study was conducted by Ayeswarya R.B. (2017) to ascertain how Green HRM practises affect businesses. The banking industry was the subject of this study. The factors identified by the factor analysis support the notion that resource conservation, encouragement, and environmentally responsible production all contribute to Green HRM practises. Franklin John.S., Nilufar, and Sathiq.P. (2018) examined bank workers' knowledge of green HR practises and their degree of job satisfaction.

According to the study's findings, the majority of participants had heard of green HRM. The study revealed a strong link between green HRM practises including paperless hiring and interviewing, green teamwork, and the inclusion of environmental knowledge in recruitment and induction courses, and job happiness. In a study published in 2019, Varma K et al. identified the characteristics of green human resources practises and assessed the impact of employee organisational commitment on those practises.

The results of the correlation and regression analysis show a connection between organisational commitment and CSR and other green HRM practises. Purushottam et al.'s (2018) study in the health sector sought to understand how Green HRM practises affect employee performance. During her investigation into the use of GHRM practises in the Indian automotive industry, Chowdhury Richa (2019) found a significant correlation between employee green behaviours and GHRM practises

5.3. Research Gap:

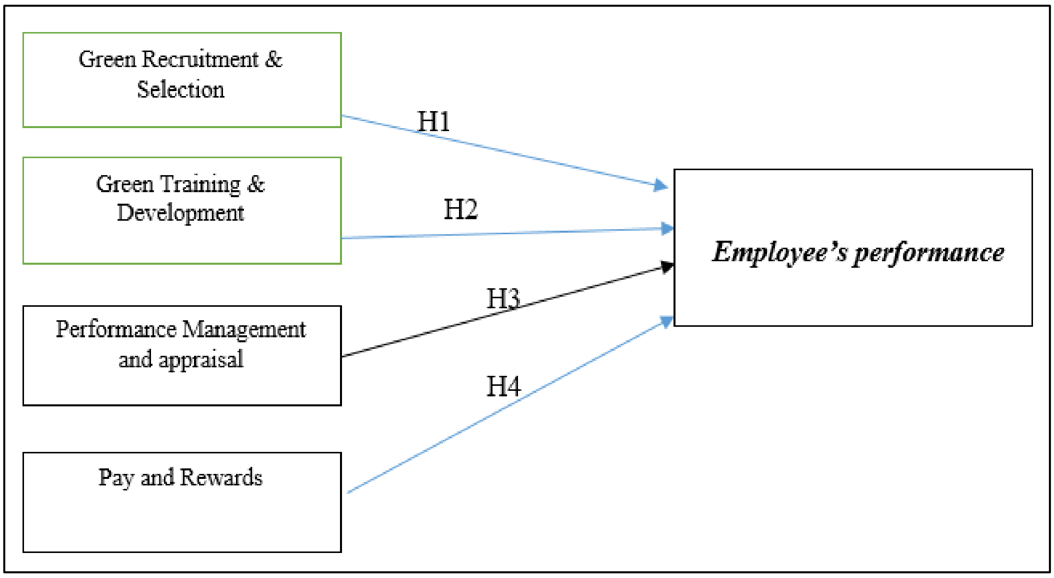
Green HRM practises are already being quickly embraced by businesses. This phenomenon has a variety of purposes. The use of Green HRM methods is not restricted to just one area of HRM activities. When communicating the recruitment message, the organisations are open about their environmental performance. Additionally, it has been noted that organisations sought to fill job openings with environmentally conscious individuals.

The firms are integrating green HRM practises into performance management processes by using environmental audits and environmental management information systems (EMIS). The organisations have adopted HRM techniques in all areas, including pay rewards, employee relations, and training and development Renwick et al (2008).

According to a thorough examination of the literature, research has been done on these aspects of green HRM practises rather than employee productivity. But there is no comprehensive study over the impact of employee green behaviour which reflects on the employee performance.

5.4. Conceptual Model Development of the Study:

The researcher prioritised Green HRM practises over Employee Green Behaviour and Employee Performance. So, we have framed a conceptual model to carry out the research. The conceptual model is presented in below:



Source: Authors

5.5. Aims of the Research:

To gain insight into how green HRM practises affect employee performance in the healthcare industry.

5.6. Data Analysis & Findings:

The dependent variable utilised to assess the potential relationship between Green HRM practises and employee performance.

We have adopted stepwise forward Regression Analysis to analyses the relation between the proposed variables.

The following table: 5.1 represents the model summary of the Green Human Resources Management practices over the Employee's Performance.

Table 5.1: Model Summary of the Green HRM Practices over Employee Performance

Model	R	Adjusted R Square	Std. Error of the Estimate
1	.620a	.391	.963
2	.678[b]	.441	.916
3	.699	.476	.885

a. Predictors: (Constant), Performance Management and Appraisal b. Predictors: (Constant), Performance Management and Appraisal, Pay and Rewards c. Predictors: (Constant), Performance Management and Appraisal, Pay and Rewards, Recruitment

The model summary revealed that the performance management and appraisal have its impact in the model as its value of R^2 is found to be .392; the R^2 value is increased to .453 of performance management and appraisal and pay and rewards.

Also, the results revealed that the variables of performance management, pay and rewards and recruitment have the impact of. 488.with the standard errors of the models of 0.963, 0.916 and 0.885 respectively.

Table 5.2: ANOVA of Green HRM Practices Impact Over Employee Performance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	415.92	1	415.92	456.28	.000[b]
	Residual	685.90	754	.940		
	Total	1101.82	755			
2	Regression	482.58	2	256.27		
	Residual	619.24	753	.828	288.40	.000[c]
	Total	1101.82	755			
3	Regression	494.24	3	175.18	206.58	000[d]
	Residual	607.58	752	.811		
	Total	1101.82	755			

a. Dependent Variable: Employee Performance b. Predictors: (Constant), Performance Management and Appraisal c. Predictors: (Constant), Performance Management and Appraisal, Pay and Rewards

d. Predictors: (Constant), Performance Management and Appraisal, Pay and Rewards, Recruitment

The variance analysis for the three developed models was shown in table: 5.2. The F-value of model: 1 is found to be 456.28 and the significant value is found to be 0.000.

The F-Value of model: 2 is found to be 288.40 and the significant value is found to be 0.000. The third model of the analysis disclosed that the F-Value is found to be 206.58 and the significant value is found be 0.000.

Table 5.3: Coefficient Summary of Green HRM Practices over Employee's Performance

Model		Unstandardized Coefficient		Standardized Coefficient Beta	t	Significant
		B	Std Error			
1.	(Constant)	-0.046	0.250	--- 0.610	-0.181	0.857
	Performance	0.924	0.044	----	2.126	0.000
	Management (Constant)	-0.973	0.259	0.466	-3.753	0.000
2.	Performance	0.706	0.0408	0.286	14.786	0.000
	Management Pay & Rewards	0.386	0.043	0.286	9.001	0.000
	(Constant)	-0.949	0.256	---	-3.705	0.000
3.	Performance	0.544	0.059	0.360	9.443	0.000
	Management Pay & Rewards	0.348	0.043	0.257	8.032	0.000
	Recruitment	0.298	0.043	0.174	4.563	0.000

a. Dependent Variable: Employee Performance

The beta coefficient summary of the derived models is explained in table: 5.3. The beta coefficients are found to be 0.924, 0.706 and 0.544 respectively. The t-values of the models are 24.126, 14.786 and 9.443 respectively. The p-values of the models are found to be 0.000, 0.000 and 0.000 respectively.

The coefficient summary derived three regression equations as follows:

Employee Performance (Y) = -0.046 + 0.924 (Performance Management & Appraisal) -----**1**

Employee Performance (Y) = -0.973 + 0.706 (Performance Management & Appraisal) + 0.386 (Pay and Rewards) ……………………………………………………………**2**

Employee Performance (Y) = -0.949 + 0.544 (Performance Management & Appraisal) + 0.348(Pay and Rewards) + 0.298 (Recruitment) ……………………………………… **3**

5.7. Conclusion:

The study's overall findings showed that employee performance was moderately impacted by the key elements of green HRM practises like Recruitment & Selection, Pay and Rewards. Training and Development and Performance Management and Appraisal.

Also, it has been observed that while implementing GHRM practises, HR strategists in healthcare organisations must preserve the aforementioned characteristics. Employees have been found to adopt green HRM techniques. The findings also highlight the necessity for an approach that is specifically tailored to enhancing employee performance through Green Human Resource Management techniques. The significance of GHRM methods and its connections to enterprises are revealed by the current study. The report also issues a warning that further empirical research is required in the Indian setting, where Green Human Resource Management practises and functions are important. Additionally, the study cautions that more empirical research is necessary to fully understand the practises and roles of GHRM in the Indian context.

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6. Sustainable Insurance in India: An Overview

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Abstract:

Research Aims: Presently, credible companies are putting green HRM practices into Businesses all across the world are becoming increasingly concerned about implementing sustainable practices. It has been found that risk management makes a substantial contribution to the encouragement of sustained corporate operations. ESG guidelines have given a lifeline to companies by safeguarding their future plan for sustainability. It is a creative solution that boosts corporate performance and promotes the sustainability of the economy, society, and environment. Studies reveal that the majority of people in India do not have insurance, which could be averse to their ability to support themselves in the future, especially in the event of illness or death. This article will draw attention to and educate stakeholders in society about insurance from a young age because sustainability issues will be the next big thing in the coming years. The focus of this descriptive essay is on India's situation with regard to sustainable insurance.

Keywords:

Sustainability, ESG, Insurance, Green Insurance, India.

6.1 Introduction:

A key component of sustainable development is the insurance sector. A strategic approach to sustainability is sustainable insurance. It is a creative solution that enhances company performance and contributes to a nation's ability to sustain its social, economic, and environmental systems (Masud et al., 2020). The natural environment, human well-being, and economic success are all being dangerously disrupted by global warming, says the Inter-governmental Panel on Climate Change (IPCC). Floods, droughts, and storms are all causing more deaths and damage than before. According to a recent prediction by the UN Office for Disaster Risk Reduction, there will be one major disaster every day by 2030. Tens of millions of people are killed by pollution and trash each year (UNEP, 2020).

To safeguard small enterprises, the UNEP (2020) has already established insurance policy guidelines. To speed up the transition to a net-zero carbon economy, an alliance has been developed. Additionally, it has established the first-ever insurance industry guidelines for ESG risks. A good place to start is through the NZIA's (Net Zero Insurance Alliance) collaboration with the Carbon Accounting Financials, which aims to create the first global standard to assess greenhouse gas emissions linked to insurance underwriting portfolios is underway.

The establishment of policies aimed at green insurance development will also increase the investment projects' liquidity, effectively boosting green insurance's internal motivation. Thus, the insurance sector is essential for the global promotion of environmental, economic, and social sustainability because of its substantial role in risk management and investment activity (Nobanee et al., 2021). To promote the Principles for Sustainable Insurance initiative, the United Nations Environment Program (UNEP) published the first Environment, Social & Governance handbook for the worldwide insurance market in June 2020. Through a worldwide roadmap that will enable industries to create cutting-edge risk management and insurance solutions, the principles will ultimately guide the insurance sector towards sustainability. With long-term sustainable improvements, the practices will alter will address well-known challenges like renewable energy, food security, resilient communities, greater catastrophe preparedness, climate change, etc (The Journal of Insurance Institute of India, 2021).

The environmental, social, and governance (ESG) standards offer a framework for investors to consider when assessing potential investment candidates. Sustainable investing and responsible investing are terms that are frequently used interchangeably when referring to ESG investing. However, there is a difference between ESG investing and socially responsible investing (SRI); although SRI actively prioritises the selection of investments based on social effect over predicted financial performance, ESG investing simply incorporates ESG elements into decision-making. (Claire and booth, 2020).

Table 2:

Environmental issues	**Social Issues**	**Governance issue**
Climate change issue: CO_2 emission, carbon footprint	Human capital: Human resource Management, policy making, working environment.	Corporate governance: board structure, transparency, diversity
Allocation of Natural resources:water scarcity, source of raw material	Product liability: health risk, privacy and data security.	Corporate behaviour: tax policy, ethics, competition practices
Pollution & Waste: e-waste, toxic chemical pollution	Social oppurtunities: providing healthcare facilities, credit and finance facility	
Environmental Opportunity: clean energy, green energy	Stakeholder opposition: competition in the market	

Sources: (Claire Booth, July,2020)

Sustainable goods are those that protect insured from loss or harm while simultaneously preserving and promoting an environmentally conscious society. Insurance companies have been compelled to start offering services that will assist countries all over the world in achieving this long-term objective as they start making the shift to economies with low emissions.

If insurers act promptly, green products, also known as green insurance, will undoubtedly promote a speedy changeover. As per Pwc (2020), Some insurers throughout the world are already writing a few green products, and we have highlighted a few of these below:

- The term "green auto insurance" refers to an insurance programme created to reward drivers of environmentally friendly cars that lower greenhouse gas emissions. Some insurance providers offer special plans for hybrid or electric cars, among other environmentally friendly vehicles. This insurance could provide extra protection for particular hazards related to environmentally friendly automobiles, like coverage for charging cables or discounts on insurance premiums.
- Green insurance for homes: These is services that make it easier to use renewable resources or energy in homes or other structures and unconventional building techniques. This is really dissimilar from traditional home insurance. Moving toward a low-carbon environment entails a shift away from fossil fuels and toward renewable energy sources. Insurance costs might be decreased for homes that have earned Leadership in Energy and Environmental Design (LEED) certification from the Indian Green Building Council. There is also an endorsement for adopting eco-friendly substitute materials, as well as insurance coverage that fully covers renewable energy sources.
- Green Insurance for Business: Green commercial property insurance policies, which encourage and reward environmentally responsible behaviour, are advantageous to businesses. Such insurance policies provide coverage for a variety of things, including certified rebuilding in the event of a total loss, eco-friendly building systems, and eco-friendly materials. Businesses may also be given a green seal of approval if they use eco-friendly supplies and tools as well as pay for eco-friendly construction and related expenditures. By utilising alternative materials and energies for their buildings and surrounds, businesses are given the chance to keep fostering a sustainable environment.

The Covid-19 epidemic highlighted the necessity to utilise new management strategies and assure quick adaptation of insurance businesses to market needs by exposing their shortcomings and resistance to change.

Insurance companies should better grasp their impact on society and their need to act responsibly towards it during times of crisis.

This will help prevent customer losses and allow for customer growth through an increase in customer loyalty and trust. (Khovrak, 2020)

6.2 Objectives of the study:

- To study the Sustainability/green Insurance concept in the insurance industry in India.

6.3 Insights from Literature:

According to the UNEP report, despite the fact that major insurance companies are leading initiatives for sustainable insurance, many insurers are lagging behind because of a variety of obstacles. These include differences in the proportion of environmental risks that various insurance company segments are exposed to, misaligned market incentives, and capacity issues. Resilience would be given priority in the ideal sustainable insurance system, which would preserve and improve accessibility and insurability while lowering risks and exposures through managing risk and innovation. Thus, it would entail investments in long-lasting and environmentally sustainable assets (Gatzert, 2020). Regarding green assets, insurance companies may profit as green building occupiers in addition to investing in the greening of their surroundings and realizing better prices or rentals.

Significant benefits include decreased operational costs, enhanced facilities, increased staff productivity and health, improved business reputation, and environmental protection. These factors are also thought to be potential influencers for green premiums. However, a definitive conclusion about how much the benefits surpass the drawbacks is not yet attainable and necessitates future research (Zhang et al., 2018). Beiragh et al. (2020) evaluated 14 insurance businesses using three environmental, eight financial, and four social characteristics. An analytical hierarchy technique was used to rank the indexes using expert advice. As a result, evaluations that were both subjective and objective were integrated. Lastly, the findings supported by correlation tests show that the greatest sustainability indices are shared by the top-performing insurance companies.

6.4 Methodology:

This study was created to examine various green marketing initiatives within the Indian insurance business. The study is descriptive in nature, and secondary data sources have been used.

6.5 Scope of the study:

The current study is only concerned with green marketing in the Indian insurance industry.

6.6 Present State of Sustainable Insurance in India:

ICICI Prudential Life Insurance has become the first company to make a commitment to ESG problems by signing the United Nations-supported Principles for Responsible Investment (UNPRI). ESG aspects are now being incorporated by the corporation into its framework for responsible investment Practices. In addition, ICICI Prudential Life Insurance has incorporated sustainability concepts into all facets of its business operations, making sure that the environment, social, and governance are taken into account when making decisions. This displays the company's understanding of the significance of sustainable practices in generating long-term value for all stakeholders and demonstrates the company's commitment to integrating sustainability across its organisation, from product design to customer service. ICICI Prudential Life Insurance is one of the bigger institutional investors, with assets under management of over 2.4 lakh crore.

In order to ensure that investee companies run their businesses responsibly and sustainably, the corporation also works with them on ESG issues (Shetty, 2021) An ESG-only fund called the Sustainable Equity Fund was launched by Max Life India. The Max Life Sustainable Equity Fund will enable users to participate in companies that maintain suitable ESG scores in response to the growing demand for responsible investment. The "Max Life Sustainable Equity Fund" is an investment vehicle that makes investments in socially conscious businesses and considers environmental, social, and governance standards when making investment decisions. The Nifty ESG 100 Index will be used as the benchmark for this new actively managed ESG fund, according to Max Life. This indicates that this fund will make investments in businesses that are both included in the ESG index and have a high overall ESG score. (Das, 2022)

Table 2:

Company's Name	Weight (%)
HDFC Bank Ltd.	10.20
Reliance Industries Limited	9.96
Infosys Limited	8.64
Housing Development Finance Corporation	7.00
Tata Consultancy Services Ltd.	5.25
Kotak Mahindra Bank Ltd.	4.44
Hindustan Unilever Ltd.	3.75
Larsen & Toubro Ltd	3.67
State Bank of India (SBI)	3.22
Axis Bank Limited	3.15

Sources: Nifty 100 ESG Leaders Index (30th August 2022)

The government clearly wants the nation's largest asset manager to be better positioned to foresee potential risks and possibilities in its operations and investment methods, as seen by LIC's decision to pursue an ESG rating. LIC needs to have a reliable ESG strategy in order to receive a favourable rating and catch the attention of international institutional investors. This will require addressing and mitigating its most significant ESG risks and seizing the most important ESG opportunities. A high ESG rating may attract long-term, patient investors and increase the firm's worth, but it also may put pressure on the company to enhance its ESG profile due to demand from these investors. This suggests that LIC will need to view both its existing and future investments through an ESG prism. This news is certain to generate discussion in corporate boardrooms across the nation because the insurer owns more than 3.5% of India's listed equities universe. As a result, businesses will reevaluate their ESG policies to avoid criticism and pressure from one of their largest investors. In India, LIC owns more than 1% of 281 businesses, including ones in the banking, energy, commodities, and IT industries (Economic Times, 2022).

The General Insurance Council of India has announced that it has joined the UN Principles for Sustainable Insurance Initiative as a PSI Supporting Institution. The General Insurance Council, which represents 45 non-life insurance and reinsurance businesses in India, decided to join the PSI initiative to promote sustainable insurance and ESG standards in the non-life insurance industry during a meeting of the Executive Committee. The Council will persuade its members to embrace and put into practice the Principles for Sustainable Insurance. The Council is concentrating on enhancing climate change resilience and quickening the shift to a post-carbon world. The Council is proving its commitment to sustainability and supporting India's efforts to move towards a more sustainable future by endorsing sustainable practices and increasing understanding of environmental, social, and governance aspects in the non-life insurance sector (General Insurance Council Joins UN Principles for Sustainable Insurance Initiative., n.d.).

6.7 Conclusion:

The larger sustainability agenda in India must include sustainable insurance. For insurance firms to have the least number of negative effects on the environment, society, and the economy, they must embrace sustainable practices. Sustainable insurance enables businesses to provide their clients with cutting-edge goods and services that promote sustainable behavior while lowering risk and boosting resilience. Companies that put an emphasis on the environment, employees, and an ethical method of conducting business will gain from the market in the long run and will continue to do so. Insurance companies will cover enterprises that adhere to ESG principles for a sustainable and prosperous future as well as invest in sustainable businesses. People must understand the pressing issues facing the world as stakeholders in the community and act responsibly by allying themselves with businesses that support a green future. In order to attain long-term orientation, numerous stakeholders, including the government, must respond in a circular manner. A sustainable future cannot be a one-sided affair.

6.8 Future Research Direction:

The scenario of sustainable insurance in India and its trends in the future are highlighted in this descriptive study. Additional research can be done on corporate social responsibility, ESG risk underwriting, and ESG concerns handling in insurance finances. Stakeholder theory and agency theory are two important theories that underpin CSR.

Through these studies, the impact of sustainable insurance could also be evaluated. Operations strategy and the elements that fuel ESG risk underwriting development could also be the focus of further study. These kinds of studies will result in increasing ESG risk management awareness and information sharing between developed and developing insurance markets, resulting in more sustainable business practices for policyholders and insurance businesses globally. However, there is still a lack of intent for sustainability by companies. The Sustainability component will serve as a point of differentiation for organisations until a higher degree of openness and uniformity is achieved in analysing the risk and opportunities of companies that are implementing sustainability.

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7. Digitalization of Currency System

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Abstract:

In my paper, I would like to focus on digitalization of currency system. There are many new inclusions in this field of e_currency during Covid-19 and post Covid-19 pandemic which has a great effect on the future of digital currency. In India, there were around 3.4 crore customers who were actively using digital channels in 2019-20 but the scenario has changed after the pandemic and now almost 7.9 crores customers are using the digital channels in 2020-2021. Introduction of few new sections in the Income Tax Acts have made this digitalization mandatory. No individual or business is permitted to accept more than Rs. 2 lakhs in cash in a single day from another individual or organisation, according to Section 269 of the Income Tax Act. According to Section 269SU, all companies with a yearly revenue of at least Rs. 50 crores are required to accept digital payments, while Section 269SS forbids taxpayers from taking or receiving loans, deposits, or payments of more than Rs. 20,000 in cash. In my paper, I am going to find out the expanse and impact of digital currency system in rural, urban and semi-urban India during post pandemic condition.

Keywords:

digitalization, e_currency, Income Tax acts.

7.1 Introduction:

Digital usage has increased drastically across every field as a result of the COVID-19 outbreak. The digitization has changed the life of the people. Post pandemic, India has seen exponential growth in the field of electronic payments. Huge smartphone penetration and increasing speed of internet in urban, semi-urban (using ethernet cables) and even in rural areas has accelerated the use of digital payments in the country within this short span. Furthermore, this transformation has significantly accelerated and made possible due to flagship government initiative of Digital India which sought to make India a digitally advanced economy.

The digital representation of value is known as digital money. With this gaining popularity of digital payment systems, India has taken initiative to launch digital currency. Finance Minister Nirmala Sitharaman has proposed, the digital rupee, also known as CBDC as a part of Budget 2022. On October 7, 2022, the Reserve Bank of India released a concept note on Central Bank Digital Currency (CBDC), which is currently in the testing stage. The public or private sectors may issue CBDC, which is essentially an electronic version of cash that can be stored and traded using the internet or a mobile application. Some forms have a fixed face value that can be redeemed for cash.

They are commonly referred to as e-money and are fully backed by extremely safe and liquid assets. The RBI's CBDC is interchangeable one for one with fiat money. It must be acknowledged by all people, corporations, and governmental entities as a form of payment, legal tender, and safe store of value.

Core digital industries like information technology & business process management, electronic communication services, and electronics manufacturing are expected to see their gross domestic product (GDP) approximately doubling to US dollars 355--435 billion by 2025 as a consequence of the government's increased emphasis on fostering a digitized economy.

7.2 Objective:

- Exploring Evolutionary Stages of Currency System
- Looking into the concept of Digital Currency
- Studying the growth and adoptability of Electronic Payment Systems in India
- Learning about the use of different digital payment apps in pre and post pandemic eras in India.
- Examining how different age groups in India's rural, semi-urban, and metropolitan areas use digital payment systems.
- Researching the future of Digital Currency and Digital Payment System in India

7.3 Literature Review:

Any form of payment that can only be made online is considered digital money, also referred to as digital currency. People can instantly transfer money between their bank accounts utilising a digital payment system by using their mobile device, computer, POS (Pòint of Sale), wireless mobile data, or SWIFT (Society for the Wòrldwide Interbank Financial Telecòmmunication). *Digital currency and digital payment systems, both are aimed to improve efficiency and convenience in the process of settlement. The person who contributed to developing the first version of the bitcoin software and published the paper in 2008 that made cryptòcurrencies popular was Satoshi Nakamoto. Digitalization* has revolutionized *money* and payments *systems* (MK Brunnermeier, 2019).

There would be no settlement risk because the time zone difference would no longer be relevant, according to Archit Gupta, the CEO of Clear. According to Vinshu Gupta, Director, Nonceblox Blockchain Studio, digital currency has the ability to increase global trade, enhance financial inclusion, and alter how we spend, save, and do business in ways we most likely haven't yet begun to completely comprehend. The current financial system in India, which encompasses securities, transactions, etc., has been replaced by its matching electronic version, with the exception of currency notes, according to Archit Gupta, CEO of Clear Tax. Money's emergence as a social technology of account through digitization (given by Micháel Peneder, 2022). According to M Ferrári, M Mehl and L Straccá, Digital money from the centrál bank in an open economy. Technology has given consumers access to a huge variety of payment methods, which makes it easier for them to complete transactions (Somán in 2001; Pulina in 2011; Somán in 2001, 2003; Srivastáva & Raghubir in 2008).

According to earlier research (Dewán & Chen, 2005; Kreyer et al. in 2003), mobile payment applications are usually treated favourably by consumers. By enabling flexible payment additions and expediting exchanges, digital wallet payments give more ease to consumers (according to Liu & Zhuo in 2012).

The use of digital wallets as a means of payment is influenced by a variety of criteria, including trust, ease of use, the ability to replace cash-based payments, and many more (Padáshetty & SV in 2013). However, the initial uptake of mobile payments has not been as quick or extensive as anticipated (BIS in 2004). In her research paper titled "Àdoption of Digital Wallet by Consumers," Dr. Hem Shwetá Rathòre, examined the variables that affect consumer adoption of digital wallet as well as the risks and difficulties associated with its use. She came to the conclusion that consumers are adopting digital wallet primarily because it is convenient and simple to use, and that in the coming years, it will become more widely accepted.

7.4 Evolutionary Stages of Currency System:

Many types of money existed at various points throughout history. Although it now also exists in ethereal forms, money originally only existed in tangible forms. As economies developed over time, different types of money grew increasingly popular as they assisted in the expansion of the economy in addition to meeting the need for a medium of trade.

7.4.1 Barter System:

Prior to the invention of money, societies relied on barter to exchange commodities and services. Users of a barter system trade goods and services for other goods and services without using any medium of exchange. An example of a barter system would be between a trader who specialises in species and a farmer who specialises in growing crops. The two people would decide how much species to exchange for crops according to their individual requirements. Trading was difficult since both sides had to genuinely want what the other has to offer.

7.4.2 Commodity Currency:

Bartering system was becoming difficult for trade, thus several everyday items gradually began to serve as money. A commodity that serves as money is an economic good. Throughout history, commodities such as cocoa beans, tea, tobacco, salt, and seashells were used as currency.

7.4.3 Metallic Currency:

Societies and economies discovered more efficient techniques to enable commerce and transaction as they developed. Instead of using commodity money, people instead used metals like gold, silver, and copper. Coinage was later developed to standardize and certify metallic money. As paper money was replaced by coins made of metal, each type of coin was given a certain value. Coins made payments simple because they were portable as well.

7.4.4 Paper Currency:

It is known that the changeover to paper began in many locations around the world and under various conditions. In several American states, residents were permitted to print their own money. In addition, the state issued notes known as anticipated tax notes that were used for paying salaries as well as for making purchases of supplies and other expenses. Paper money in other parts of the world was secured by gold or silver. The Continental Congresses in America during the Revolutionary War used fiat paper money known as Continental dollars. A form of money known as "fiat money" is one that is sustained solely by official decree and without any tangible backing, such as gold or silver.

7.4.5 Electronic Currency:

With the advent of electronic money, money has assumed an intangible shape in today's economy. Electronically stored money is money that can be accessed by devices to perform transactions. Without using paper money, money can be moved between parties using other services like electronic transfers.

7.4.6 Concept of Digital Currency:

In 1983, Ámerican cryptographer Dávid Chaum proposed a system of electronic payments. The similarities to modern cryptòcurrencies are astounding. He imagined a token currency that could be safely and discretely transmitted between persons. A few years later, Chaum launched DigiCash to implement his idea by developing the first electronic payment system based on cryptography, named e_Cash. Despite ceasing operations in 1998, certain of DigiCásh's algorithms and encryptiòn tools had a big influence on the development of digital currencies in the following years. The idea of digital money was initially put forth in the 1983 research paper "Blind Signátures for Untraceáble Payments" by David Cháum. In 2009, Bitcoin, the first decentralized cryptocurrency, was first made available as open-source software. Bitcoin was created in January 2009 by Satòshi Nakamoto, an unidentified programmer. The alias Satòshi Nakamoto is used to identify the Bitcoin creator(s). The public is unaware of Satòshi Nakamoto's identity. At the conclusion of one of the first significant public probes, Dorian Nakamoto was identified as the creator of Bitcòin, but he continues to deny the claim. Before Bitcoin, there were other cryptocurrencies, but they didn't gain much popularity.

7.5 Growth and Adoptability of Electronic Payment Systems in India:

The digital payments era started in India in the early 90's and now it has become an essential part of our life. The history of digital payment is quite recent in India, making its development all the more remarkable. The mid of 90s saw the introduction of online/digital payments. In 1994, the Stanford Federal Credit Union became the first company to make an online payment system available to its customers. Industrial Credit and Investment Corpòration of India (ICICI) introduced India's first online payment system to its customers in 1996 as part of its online banking services in their retail branches. Bill Desk was the first payment aggregator in the country which was founded in 2000 and it made digital payments easier for the e-commerce customers.

Though, debit cards were introduced a little earlier but in 2000, debit cards were started becoming popular. The banks started giving debit cards to their customers thus popularizing the online banking system. Also, credit cards were getting popular among the people in the 2000s. Customers also started taking the facilities of debit and credit cards and also understand the benefits of these cards. The National Electronic Money Transfer (NEFT) was introduced in 2005, making digital operations like fund transfers much easier. The National Payments Corpòration of India (NPCI) was established in 2008-09 to oversee the retail payment systems, in India. Around 2010, we had several payment systems such as Magnetic Ink Character Recognition (MICR), Electrònic Clearing System (ECS), NEFT and Real Time Gròss Settlement (RTGS) in addition to Debit and credit cards. In the next few years, NCPI rolled out several other digital payment options such as Rupay, Aadhaar Payment Bridge System (APBS), National Financial Switch (NFS), BBPS etc. At present, digital payments come in many modes and forms in India like: Debit/credit cards, transfer using online banking through IMPS, NEFT, RTGS, mobile wallets, digital payment apps (Paytm, PhonePe and Google Pay etc.), the Unified Payments Interface (UPI) service, BHIM-UPI, NACH, AePS, NETC, PPI and others.

Digital payment systems became more adoptive due to imposition of some restrictions by the government. Indian government has put restrictions on cash transactions through the insertion of various new section in Income Tax Act such as Section 269, which restricts a person individual or company to accept a sum of Rs. 2 lakhs or more in cash from another individual or company in a particular day or for a particular transaction. Section 269SU, where it has been made mandatory for all businesses with an annual turnover of Rs. 50 crore or more to accept digital payments and Sec. 269SS which restricts a taxpayer from taking or accepting loans or deposits of an amount of more than Rs. 20,000 in cash. So, the companies are forced to adopt various non-cash methods for making the transactions and the usage of debit cards, credit cards, UPI-BHIM, RTGS, IMPS, NEFT and other non-cash modes became popular in India. Now-a-days, maximum companies in India are transacting through various online modes for making payments to their suppliers and for receiving payments from the customers. Banks also provide various online platforms to their clients both corporate as well as retail and they ensure security. For the introduction of various online methods of payments, less people tend to visit banks for different operations. Most of the banking transactions can be done through internets and it can be done 24 hours. It helps in increasing the business globally.

7.5.1 Use of Different Digital Payment Apps in Pre and Post Pandemic Eras in India:

Pandemic has a great impact on the digital payment system of India. The volume has climbed over 50% after pandemic. In cities and big towns, all big and most of the mid to small scale commercial traders are now offering various online modes of payment to their customers such as debit and credit cards, UPI-BHIM, PhonePe, Paytm, GPay etc. This helps the customers to make the payments easily and also the customers are not required to carry a huge amount of hard cash for shopping. It increases the customers' buying capacity as his buying limit is not restricted to the cash in his hand and also the usage of credit card facilitates them to defer their actual payments. Digital payment apps such as PhonePe, Paytm, Google Pay etc. helps all category of customers to make online payments as these methods are very user friendly and also not required to carry any type of cards. A smart phone is the only requirement to use these platforms. This in turn increasing the turnover of the traders. Use of RTGS, NEFT and IMPS is making the bulk payment easy and hustle free. The online payment systems help in developing various digital shopping platforms which is behind the steady growth of e_commerce in India.

Post pandemic digitalization has a great impact on small towns and rural areas too. With the openings of a greater number of bank branches in semi-urban areas, the digital banking and payment systems are gaining popularity among people in these areas.

The network service providers are also playing a vital role in providing uninterrupted internet services to various parts of India which increases the use of smart phones. Various educational drives in rural areas make people aware about the online payment systems and its benefits to farmers, fishermen, small scale businessmen etc.

Pandemic has taught them with digitalization only they can connect with people of various sectors of their interest without meeting them physically and this way they can flourish their business.

A comparative study has shown a sharp increase in number of registered and active users of various digital payment apps in post pandemic phase.

Table 7.1: Comparative Study of Use of Digital Payment Systems in India in Pre-Pandemic and Post-Pandemic Eras

No.	**Digital Wallets**	**Owned by**	**Register users (approx.)**	**Register users (approx.)**
			Pre – Pandemic	**Post - Pandemic**
1.	Paytm	One97 Communications	Registered Users- 80 million Daily Transactions- 2 million	Registered Users- 330 million Daily Transactions- 3 million Daily Active Users - 25 million
2.	Google Pay (GPay)	Google	Registered Users- 67 million	Registered Users- 150 million
3.	PhonePe	Flipkart/ Walmart	Registered Users- 100 million	Registered Users- 350 million

No.	Digital Wallets	Owned by	Register users (approx.)	Register users (approx.)
			Pre – Pandemic	Post - Pandemic
				Monthly Transactions- 2.5 billion Daily Active Users – 87 million
4.	Mobikwik	One MobiKwik Systems Private Limited	Registered Users- 55 million	Registered Users- 108 million
5.	The Bharat Interfáce for Money (BHIM)	The National Páyments Corporation of *India* (NPCI)	Registered Users- 12.5 million	Registered Users- 16 million

With a market share of 47.8%, PhonePe dominates the payment app industry, followed by Google Pay (33.6%), Paytm (13.2%) and others (5.4%) as per survey made in 2023.

7.5.2 Adoption of Digital Payment Systems by Different Age Group of Rural, Semi-Urban and Urban India:

Digital illiteracy amonGST customers and traders, which has a direct impact on the acceptance of digital products, hinders the adoption of DFS (Digital Financial Services) in rural and semi urban areas. DFS uptake in rural and semi-urban areas is hampered despite government efforts to create an integrated digital infrastructure. Individuals in these areas favours cash transactions over cashless transactions because they believe in cash transactions and do not trust electronic transactions.

However, as per a report by Nielsen report in 2022, rural India has a 20% higher internet presence than urban India. Remote areas of our nation now have access to the Internet because of the extensive use of smartphones, UPI [Unified Payments Interface], and government initiatives like the Pradhan Mantri Gramin Digital Saksharta Abhiyan. Linking bank accounts with mobile numbers and Aadhar, enabling the Public Financial Manágement System (PFMS) in the District Panchayats and adopting digital payment systems at ration stores and fertilizer stores are forcing the rural mass to adopt digitalization. Pandemic has pushed them more towards adoption of digital currency systems. But this adoption varies with different age-groups and also with different regions.

7.6 Research Methodology:

A survey has been conducted with 10 people of different age-group of Kolkata (urban), Durgapur (semi-urban) and Kanutia village, Birbhum district (rural). Random sampling mode was preferred for the survey. Few digital payment modes were selected for ease of inquiry and understanding of general people. People of different age groups of different areas are asked randomly about their preferred mode of transaction in everyday life for various activities. They have been given enough independence to speak about their preferred mode and the reason why they are preferring the same. The findings were noted as per the discussions with them.

7.7 Findings and Discussion:

Table 7.1: The Findings of The Survey

Zones	Payment modes	Age -Group		
		41-60	21-40	Below 20
Kolkata (urban)	Cash	30%	10%	30%
	Debit/ Credit Card	30%	20%	-
	Fund transfer through IMPS, NEFT, RTGS	20%	30%	-
	PhonePe, Paytm and Google Pay	20%	40%	70%
Durgapur (semi-urban)	Cash	60%	40%	80%
	Debit/ Credit Card	10%	20%	-
	Fund transfer through IMPS, NEFT, RTGS	20%	30%	-
	PhonePe, Paytm and Google Pay	10%	10%	20%
Kanutia village (rural)	Cash	90%	50%	90%
	Debit/ Credit Card	-	-	-
	Fund transfer through IMPS, NEFT, RTGS	10%	30%	-
	PhonePe, Paytm and Google Pay	-	20%	10%

The survey reflects that

In Kolkata (urban area):

A. In the age group below 20, maximum college goers are having their own smart handsets with various digital payment apps installed either linked with their parent’s account or with their own account or using e_wallets refilled by their parents from time. After this pandemic, even the school goers are having their own smart phones and they are using e_wallets in maximum cases for their localised purchases. Around 30% of the population is also preferring cash.
B. In the age group 21-40, again the popularity of digital payment apps is little more than that of fund transfer. It is observed that people upto 30 years of age are still continuing their habit of using these apps, but a little more mature people are using online fund transfer through IMPS, NEFT, RTGS etc. for making bulk payment, business dealings, payment of loan EMI, payment of credit card, foreign exchange remittances etc. They find this registered mode more trustworthy. Use of debit/ credit card is moderately popular and use of cash is very less popular with this age group.

C. In the age group 41-60, the use of debit/credit card and cash are more than that of other modes. Particularly, people above 50-55, do not have the patience of registering different accounts for making online fund transfer again they are also not very comfortable with bar code scanning so that do have much preference towards using digital payment apps. They most use Electronic Clearance Service (ECS) for their periodic payments. However, people of age group 41-50 years, use almost all the modes as per their requirements and convenience.

In Durgapur (semi-urban area):

A. In semi-urban area, for the age group below 20, the scenario is not same as the urban localities. This is not because they are lacking digital literacy instead have fewer options to use the digital platform yet. That’s why almost 80% of the population is still dependent on cash. Most of the local shops have started taking PhonePe, Paytm and Google Pay but still they prefer to take cash. Age group around 20 is mostly settling the problem of change through PhonePe, Paytm and Google Pay etc. amonGST friends.
B. Again, amonGST age group 21-40 years, cash and online fund transfer is mostly popular as in the semi-urban area (surveyed for this paper) to date the digital payment apps are not widely accepted. Even most of the ticket booking counters of Volvo, SBSTC, NBATC bus services in Durgapur are not accepting PhonePe, Paytm or Google Pay. About 30% of the population prefer online fund transfer for their periodic payments. Credit cards are mostly used by the people of age group around 35-40 for their purchases.
C. The age group of 41-60, is mostly finding cash as most convenient mode of transaction. Use of cards and digital payment apps are not very much acceptable for them. People around 55-60 are not very much comfortable in using cards for online or offline shopping as they find this mode less secured. Few of them are also not using smart phone so no question of using PhonePe, Paytm or Google Pay etc. The age group around 45 use online fund transfer in most of cases for periodic payments.

In Kanutia village (rural area):

A. In rural area, the age group below 20 is mostly dependent on cash as this age group doesn’t have smart phone due to poverty and they have very poor digital literacy. There was almost no online education conducted from school during pandemic. Only 10% population of this age group (mostly around 20) is using digital payment apps (recently started).
B. The age group 21-40 years are mostly having smart phone after the development of internet facilities in rural areas. The State Government and Central Government are taking many initiatives not only to educate the rural people knowledge-wise, but also to make them digitally-literate. For some schemes of government like: Prádhan Mantri Kisán Samman Nidhi (PM-KISAN), the small and marginal farmers (having combined holding of upto 2 hectares of land, barring some exclusions) must have their own bank accounts, where they are getting financial assistance from the government to manage the expenses related to agriculture and its other allied activities. This is to promote Direct Benefit Transfer (DBT). This in turn, making them aware of using on-line fund transfer through NEFT, IMPS etc. Use of digital payment apps are also gaining popularity in this particular age group because of using smart phones.

C. The age group 41-60 years is majorly using cash for all their transactions as most of them are not having smart phones and don’t know about digital payment system. People around 55-60 years of age are less interested to know all these things. Very few literate people around the age group of 45 are using digital fund transfer now a days.

7.8 Conclusion:

The use of digital currency has sped up the payment process and eliminated the need for extensive data entry. There is no longer a need to carry cards around or wait in line at ATM. Digital payments also guarantee thorough transaction verification and authenticity, which is one of their many benefits.

Using OTPs and cross-verification is another way to increase the security of digital payments, which helps reduce fraud. Digital wallets are becoming more popular among Indians as they allow people to save their bank information, credit and debit card information, allowing them to conduct financial transactions at any time, and streamline the payment process by centralizing their cards and information.

Customers have the possibility to obtain frequent cashback bonuses, awards, and discount coupons from banks or digital wallets that give rewards and discounts for digital payments. Digital currency has some other benefits in compare to its physical counter parts. Since CBDC is digital in nature, there is no way to physically hurt, burn, or tear it.

There is no possibility of losing them, unlike actual notes. Compared to actual forms of currency, they last longer. In contrast to cryptocurrencies like Bitcoin, Ethereum, etc., CBDC is less volatile because it is governed by the Central Government. These help the RBI in lowering the cost of issuing currency and conducting transactions.

The necessity for interbank settlement has eliminated by this digital money. They make it possible to do worldwide business without trouble and without using any middlemen. The ability to track transactions made with the Digital Rupee is helping the retail customers and MSMEs demonstrate their creditworthiness.

7.9 Challenges:

With the gaining popularity of online payment modes, people have to be very careful and cautious while using these types of online services. There are many frauds taking place on digital platforms. Fraudsters are misusing the data to cheat the common people. People should never share their passwords, OTP with any strangers over phone or messages.

People need to share their personal financial information on digital platforms which can by exploited by the cybercriminals using malware and other software. However, blockchain, multi-factor authentication, cloud computing, anti-phish, anti-malware protection, and secure biometrics are certain next generation technologies are used to make fintech platform and digital payment system more stable and secured. Digital currency, CBDC is still in the experimental stage which needs stable infrastructure, excellent privacy and security management to make it globally acceptable.

7.10 Future Scope:

By examining digital currency and payment systems in India, the study significantly advances financial research. There are still bags of need for research and experimental work into the safety and security challenges for its successful implementation, nevertheless, given the relevance of the field of study and the constantly growing opportunity sets. The relationship between different demographic factors including income level, academic attainment, kind of employment, marital status, etc., could be further investigated in-depth. With digitalization of currency and payment systems, the farmers may easily get all their allotted funds from government to their bank accounts directly (few schemes have already implemented) thereby reducing the chances of malpractice by various intermediaries and agents in between. Also, if the farmers use the online facility for collecting their sale proceeds, they can eliminate the syndicators and middleman thereby increasing the chance of getting fair rates for their products. The buyers will also be benefited by getting the products at cheaper price. All these are leaving further scope of study as to how the whole system can be modified to reduce corruption from every layer and making our nation proud.

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8. Interface of Marketing with Human Resource Management: Cross-Functional Pollination

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Abstract:

Research Aims: *Presently, credible companies are putting green HRM practises into practises quickly. the concept of green HRM arose in relation to environmentally friendly business practises. Employers are paying more attention to green HRM practises such 'Recruitment and Selection,' 'Pay and Rewards, 'Training and Development', and 'Performance Management and Appraisal.'*

This study put a lot of attention on assessing how green HRM practises affected employee performance in India's healthcare industry.

Design/ Methodology/ Approach- *The present study emphases on responses of thirteen statements related to Green HRM from 400 respondents at all levels in various hospitals located in West Bengal, India. The hypothesized relationship between the Green HRM practices has been tested over the dependent variable of employee performance. The researcher adopted regression analysis and ANOVA to analyses the relation between the proposed variables.*

Research Findings *– The study's overall findings showed that employee performance was significantly impacted by the suggested green HRM methods. The summary of the model indicates that the model is most influenced by performance management and appraisal. The results also point to the necessity of a customised plan to boost worker performance using green HRM practises.*

Keywords:

Green HRM, Recruitment & Selection, Pay and Rewards, Training and Development, Performance Management and Appraisal, Employee performance, Health care Industry

8.1 Introduction:

The development of depth in particular disciplines, such as marketing, human resource management, finance, or operations, has been one of the most significant recent developments in business study and practice. Functional leaders with extensive knowledge in various fields are present in organizations. Through this intense emphasis, academic communities have made significant advancements in the development of concepts, frameworks, views, and methodologies, assisted by specialized journals and disciplinary departments. Cross-functional approaches in management research and practise need to be expanded right now. The need for a wider perspective in thought and behavior is becoming more and more apparent among discipline leaders.

Cross-functional pollination means sharing ideas across different departments or offices within a business. The business grows stronger when ideas are shared and cross-pollinated. High productivity, innovation, and successful execution will result from this. By raising awareness both internally and externally, encouraging openness at company-wide events, and converting former employees into brand ambassadors, human resource management and marketing can be coordinated.

Integrating marketing and go-to-market execution, business plans with brand objectives, and integrating consumer insights more broadly into business activities are the main potential for generating success.

Integration is the overarching concept. To attain this goal of increasing growth, the organization needs to integrate different perspectives. In order to attain and maintain overall organizational and collective success, we argue that combining marketing and HRM activities inside an organization is advantageous at the operational level but absolutely essential at the strategic level. This kind of integration is the magic bullet, a change that will boost performance, and as a result, a problem that directly and significantly affects both fields. In reality, it is a subject that has previously been treated in the scholarly literature (Ferrin et al., 2007).

The idea that research that spans multiple disciplines is beneficial is not a novel one. It's also untrue that no one has ever talked about the importance of the connection between marketing, organization management, and human resource management (Wang et al, 2011). But if we accept the premise that the fundamental nature, structure, and assumptions of marketing have changed nearly beyond recognition, the relationship, interface, and interaction between marketing and the rest of the set of organizational activities need to be re-examined. This is because marketing is now viewed as more of a strategic function than a transactional one.

Cross-functional groups can include people from a variety of functional sectors, such as engineering, manufacturing, marketing, or many different research disciplines (such as chemistry, electronics, and metallurgy). Multiple data, communication, and opinion sources, contacts outside of a particular project group, the inclusion of downstream concerns in upstream design, a clearer line of sight to the customer, and speed to market are all advantages of a cross-functional structure that are crucial for success in highly competitive, international high-technology markets. In more functionally structured organisations with a separate innovation unit and above-average levels of organisational connection, cross-functionality contributes to the success of innovation projects. However, using cross-functional teams may result in unfavourable results like increased costs, stress, and weakened group cohesion.

8.2 Objective of the Study:

We hope to give readers a thorough knowledge of the following goals in this article:

- List the study from the cross-functional perspective that is currently being done by different researchers.
- Draw attention to the gaps in the body of knowledge about cross-functional pollination.
- Give researchers hints for additional research on cross-functional pollination. The work that is currently available was created by numerous researchers from a cross-functional perspective. This will give a good understanding of the direction that cross-functionality research is going.

In order to clearly emphasize that people are at the center of the fulfilment of promises, this conceptual paper explains how the focus of marketing has switched from products and transactions to services and connections. This emphasizes how essential the management of people is to attaining strategic marketing goals. Management of people includes hiring, training, developing, motivating, retaining, and rewarding them. This adds to earlier studies that have shown how happy employees translate into delighted clients. This highlights how much human resources can teach marketing, and it also begs the question of whether or not the resources required to achieve significant strategic marketing goals are already there in the theory and practice of HR. The paper gives a structural overview of the transition from transactional to relational marketing and focuses on specific areas where marketers could add value by using the concepts and literature already present in HR before examining what the future partnership between marketing and HR could and should be. This is completed prior to establishing how marketing and HR should and could collaborate going forward.

8.3 Literature Review and Theoretical Background:

In a 1999 study, Michael T. Ewing and Albert Caruana found that internal marketing may be separated from human resource effectiveness in a meaningful way and also acts as a key antecedent to human resource effectiveness. The main objective of internal marketing (IM) is to recruit and retain employees who place a high priority on customer service. Internal marketing is merely another word for efficient human resources management, claim its critics. Appropriate actions are also discovered when taking into account internal marketing and human resource effectiveness (HRE) concepts. Considering the concepts of internal marketing and human resource effectiveness, this study investigates whether IM practises in the public sector have an effect on strategic and technical effectiveness.

According to the internal marketing theory, a company's employees are its most valuable resource. This study emphasizes the transaction costs theory, which can serve as the theoretical foundation for internal marketing. A macro theory called "transaction cost" explores the interrelationships between people, organizations, and the general market on a theoretical level. The efficacy of the company is increasingly understood to be influenced by human resource management. Both immediate and long-term results are impacted by HRM policy.

The association between internal marketing and human resource effectiveness in government departments was investigated by the authors using a study technique that entailed mailing questionnaires to a variety of department heads. Chiefs of government departments in Queensland, Victoria, and Western Australia, respectively, received 215; 151; and 130 of the 496 surveys that were mailed. It took place in September 1997.

The results demonstrated that moderated regression was used to evaluate the association between the constructs. The outcomes demonstrated how crucial internal marketing is to improve the efficiency of human resource management. According to the authors' concept, internal marketing should be considered a distinct entity rather than just a grouping of several human resources management tasks.

The study has some clear shortcomings. Both the internal marketing and HRE components require additional theoretical and empirical elaboration. Future research should focus on extending internal marketing to businesses that promote tangible commodities in addition to services businesses and government agencies. It seems crucial that in the future the focus should be on practicing both external marketing and internal marketing in collaboration with other functional areas, particularly human resources management if they are to successfully develop human resources management if they are to be successful in developing long-lasting and lucrative relationships with their customers.

The researchers Gerard Ryan, Marcel Gubern, and Inma Rodriguez 2000 examined the scant literature on recruitment advertising, which we will discuss in the following paper. They looked at the press advertising for hiring that was published in the widely read national media. These are the ads that employers publish in newspapers to promote open positions and draw applicants to their businesses.

Marketing communications can be obvious and concrete, like a product advertisement, or they can be ambiguous, like the message implied by a job posting in a newspaper ad. HRM has been actively pushing the employment product without even realizing it. From a marketing standpoint, jobs have been seen as products. Similar to this, the human resources department looks at employees' needs, motivations, and behavior in an effort to provide fulfilling work that will attract people who meet the requirements for the open position, stay with the business, and support its goals.

Marketing-oriented recruitment advertising is influenced by a variety of elements, according to a brief examination of the little literature. These include the way the actual advertisement looks and the way the business handles replies to the advertisement.

The authors used a list of characteristics of marketing-oriented recruitment advertisements as a guide for their exploratory analysis of the recruiting section of a well-known Sunday newspaper in the United Kingdom. The advertisements were published in newspapers under several headings, such as Senior Public, Senior Education, Charities, and IT&T. This study presents the results of an initial, exploratory investigation of recruitment ads that appeared in a single Sunday newspaper in the United Kingdom on a specified date, January 25, 1998. The study was built on the backs of 67 different job postings.

This research compiles the indicators of the marketing orientation of recruitment advertising. However, these indicators can only provide a broad picture of the current state of recruitment advertising and a starting point for further research. This study suggests that collaboration between the marketing team and the human resources department is necessary for firms to produce effective recruitment advertising that benefits from the strategies and instruments used in good consumer or commercial advertising.

Researcher Keller (Robert T.) 2001 analyzed 93 research and new product development groups from four organizations and developed a model of cross-functional project groups in the study that follows. Due to competitive pressures, cross-functional project groups have emerged as the preferred method for high-technology companies to develop new products and procedures. Cross-functional teams have the benefits of increased member satisfaction, better budget and schedule performance, and higher product quality.

93 applied research and new product development teams from four companies in the energy, chemicals, aerospace, and electronics industries made up the sample for this study. The outcome variables of technical quality, schedule performance, budget performance, and group cohesiveness were evaluated one year after the control variables of functional diversity, job stress, external communication, internal communication, group tenure, company tenure, and group size.

The results showed that cross-functional teams in research and new product development could result in higher technical quality, quicker schedule performance, and better budget performance, but they did so mostly as a result of indirect effects from external communication. If they incorporate a diversity of roles and people to enhance external communication, cross-functional teams can succeed.

The study's flaws include the use of a time lag that may not have been acceptable and the measuring of internal communication using a single-item measure of dependability given that not all of the outcome variables may have had the same optimal timeframe. Future research should focus on determining other contributing factors and the appropriate functional background combination for a particular activity or set of outcomes.

In his 2005 study, Yoram (Jerry) Wind looked into how mental models, such as those that are inherent in particular disciplines, shape and constrain insight and behavior. He noted that these models are more likely to be out of sync with the environment in a world that is changing quickly. Marketing cannot be left to the marketers alone in order to accomplish this goal of stimulating growth. Integrating marketing perspectives throughout the entire organization is urgently needed. Making strategic decisions requires having a marketing perspective, but it also helps with the creation and application of ideas and technologies like complete quality and data mining. Companies can create offerings that provide value for customers by seeing beyond the limited perspective of a product-focused perspective, and they can then capture that value through different pricing strategies. This necessitates a fundamental change in how we perceive the problem. Most marketing departments wouldn't come up with this answer on their own, if left to their own devices. It necessitates cross-functional integration of the firm's operations, finance, marketing, research and development, and other departments. Businesses must sharpen the market focus of their strategy choices across all functional areas. While IT and marketing are frequently considered as separate disciplines in firms, those that effectively integrate these two activities can create effective models for generating value and promoting expansion. The business must be redefined in order to implement the convergence marketing strategy, including IT, operations, finance, and other business areas.

The consequences for managers are to develop a wider perspective of business difficulties to address the limitations of the conventional strong disciplinary emphasis. New publications, initiatives, and research facilities are required that concentrate on cross-functional integration. Academic institutions' organisational designs might need to change in order to accomplish cross-functional integration effectively. This could entail altering the culture to place a stronger emphasis on interdisciplinary work, promoting joint appointments between departments, funding interdisciplinary research, or creating school or university professorships for those who contribute across functional lines.

In conclusion, there are numerous methods to strike a balance between the capacity for effective cross-disciplinary operation and the depth of a given field. A disciplinary framework may be upheld by organizations to link procedures. While forming more of a matrix structure that includes researchers from many backgrounds in tackling common problems or decision areas may be the optimum strategy, such structural changes take time and work to put into place.

Floortje Blindenbach-Driessen and colleagues (2014) looked at how organisational context impacted the link between cross-functional teams and performance in the article that followed. Teams with members from several functions are seen as essential to innovation attempts. Disagreement caused by functional diversity might impair a team's success. The majority of the literature that is now available focuses on resolving and preventing these conflicts, yet conflict cannot account for why it is revealed that some teams' contributions to performance are insufficient in particular types of organizations.

This study stands out in a variety of ways. It starts out by focusing on the organizational context that cross-functional teams operate in. The propensity in the innovation literature to investigate manufacturing firms led to the focus of this research being on manufacturing and service firms in the construction, IT, engineering, and allied sectors.

Thirdly, it contains a substantial sample of innovation teams from 95 organizations.

A variety of business forms, including project-based and more functionally organized companies with integrated and segregated innovation activities in the engineering, information technology, and construction sectors, are represented in the sample used in this study. 1200 companies with more than 50 employees were selected from the Reach database to represent these industries.

The results of this study showed a strong and positive association between performance and the innovation team's cross-functionality. Senior management support and the project manager's expertise have a big impact on how well innovation effort's function. This study is one of the first multilevel studies to examine teams in their organizational context in order to assess the effectiveness of cross-functional innovation teams. Given their high operating costs and the scarcity of results with a good return on investment, the utility of cross-functional innovation teams may be questioned. In conclusion, all breakthroughs require cross-functional expertise. Nevertheless, access to such extensive knowledge is made possible because of the success of cross-functional innovation teams.

The following paper we examine was written by researchers Anwar Hossain and Nahid Aktar in 2019. They looked into the practice of job postings in newspapers in Bangladesh. The purpose of this study was to comprehend how some businesses felt about the appeal of their advertisements.

To fill a vacant or newly formed post, recruitment is required. An employer can choose from a variety of recruitment options if they choose to hire from outside the company. Advertisements for open positions are used by businesses as a powerful marketing communication technique. Newspapers continue to be the most dependable and economical media for recruitment advertising despite the availability of various diverse platforms.

For both larger businesses and the general public, they are available and reasonably priced. Organizations use recruiting advertisements to impress potential candidates by highlighting their market share and size, which are indicators of their potential.

The Daily Prothom Alo, Daily Ittefaq, and the Daily Star are the three Bangladeshi Bangla and English daily newspapers that were supplemented for two months and used in this study to evaluate the significance of specific characteristics that determined the soundness of recruitment advertisements (English). 128 insertions of advertising from the manufacturing and service sectors were used for the analysis. The investigation discovered that none of the commercials mentioned the companies' turnover. This indicates that the businesses were hesitant to share these specifics, likely to protect trade secrets. Advertising colour is significant since the visual impact on readers' brains is good.

The findings demonstrated that creativity and change are fostered by a competent and diverse set of people in the top multinational pharmaceutical firm in the nation. A carefully considered recruitment ad's statement will directly affect the company's stakeholders, business partners, and employees in addition to future prospects. For job seekers to respond to any communication intended to entice talent, the career path must be attractive. The effectiveness of job advertisements also contributes to strengthening the company's reputation among potential employees.

Marketing professionals and human resource directors should collaborate to decide on the best communication channel. This study suggests that HR is a crucial component in enhancing any organization's corporate image. To provide significant value to the brand and inspire and entice top personnel to the company, HR and marketing must execute creative PR initiatives.

Future studies should look into diverse recruitment sources, including online and offline recruitment brochures. For employee support, career possibilities, culture, climate, or work-family balance, extensive study is required. Future studies ought to examine industry-specific content analysis as well. Additionally, it should consider how the highlighted factors affect how potential applicants view the company image and the appeal of these ads.

8.4 Discussion: Marketing and Human Resource Management Perspective:

The success of the company as a whole, according to services marketing and RM, is based on how well the marketing strategy is put into practice by the people in charge of providing services and/or interacting with customers. This is because the organization's success depends on the marketing strategy's successful implementation. "People" make up one-third of the "services marketing mix," which was added to the "4Ps" framework in an effort to address some of its flaws. The actual skills and abilities of these employees are given little consideration in the marketing materials (Ballantyne, 1997; Judd, 1987). It's crucial to note that transactional marketing places little emphasis on the role that frontline staff may play in creating, nurturing, and maintaining connections [or in providing exceptional customer service] over a prolonged period of time. When a customer is evaluating a company's capacity to provide satisfactory service to them, the importance of the individuals with whom they interact cannot be overstated. The employees of the company are the ones the client either trusts or does not trust; employees of the company either offer exceptional customer service and carry out their tasks correctly, or they do not. The only ones who actually learn about the customers and through whom the customers learn about the firm are the people, not the impersonal concept, entity, or branding of the business. The consumer learns about the business via these individuals, from whom they expect (and occasionally give) their loyalty, trust, and dedication (Giannakis and Harker, 2014). Many customers think that the company is made up of its personnel (Gummesson, 1991).

To summaries, effective management of personnel is necessary for successful marketing. Human resource development is defined as "supporting and allowing the learning of individuals, groups, and organizations," a notion that is still being explored in the academic community (McGoldrick et al., 2002, p. 396; Bates et al., 2001). According to American experts, the main goal of human resource development (HRD) is to improve learning, human potential, and high performance in systems related to the workplace. Some scholars contend that human resource development cannot be adequately described or restrained within preset parameters. The scenario was "impossible to place into a box," according to Blake (1995, p. 22), McGoldrick et al. (2002), Lee (2001), and Lee (2001).

8.5 Conclusion, Recommendations, And Future Research Areas:

Over the past few decades, there have been notable paradigm shifts in the domains of marketing and human resource management. One of the pioneering ones was the introduction of internal marketing. If cross-functional teams have the ideal mix of roles and participants, they can enhance external communication and be effective. Cross-functional innovation teams' benefits and limitations are viewed from a unique perspective. Cross-functionality aids in the successful execution of innovation initiatives in more functionally structured businesses with a dedicated innovation unit. According to this study, improving any organization's corporate image requires a strong focus on marketing and human resource management. Thanks to technology and a personnel branding strategy, the two departments are now better interconnected. The connection between marketing and HRM serves as an example of how crucial it is to coordinate functional strategies in order to successfully implement the overall company plan. This study concludes by arguing that close collaboration between the marketing team and human resources is necessary for companies to run effective consumer advertising and hiring initiatives.

Therefore, to summaries, it appears certain that one of the important ways to achieve this would be through strengthening the management of people within the firm if a company wants to create and maintain strong relationships with its consumers. This is because it is evident that one of the most important ways to improve the management of people within the firm is to improve people management. It would be essential to do an equally comprehensive re-examination of the effect and interactions that marketing has with other corporate operations if the notion of what makes good marketing were to fully change. To ensure that its assumptions, practices, and goals are complementary, if not synergistic, with those of marketing and other management disciplines, the human resources (HR) community must take into account the impacts of its own theoretical and practical developments.

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9. Introduction to Digitalization of Goods & Services Tax (GST) in Indian Financial System

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Abstract:

The direct tax system in India is undergoing a relatively small but equally significant upheaval as a result of the mandatory electronic filing of tax returns for those earning over Rs. 5 lakhs. The GST Network (GSTN), a digital platform where data relating to input sales, output purchases, and tax returns are recorded, serves as the foundation for the GST system as a whole.

The platform hosts the original invoices; therefore, the system makes sure that every enterprise's revenue and expenditures are completely transparent. The principal objective of this paper is i) To cognize the concept of GST ii) To study the mechanism of GST iii) To evaluate the advantages and challenges in Digitalization of GST iv) To furnish information for further research work on GST. There were a wide variety of taxes imposed on goods and services in our nation by both the federal and state governments. Currently, the State governments levy some of these taxes, while the Central Government imposes others. Instead of all these taxes, how wonderful would it be if there was just one fixed tax rate?

Introduction of Goods and Services Tax (GST) to replace the previous multiple tax structures of Centre and State taxes is not only desirable but imperative in the emerging economic environment.

The Goods and Services Tax (GST) is one indirect tax for the whole nation, which will make India one unified common market. With the introduction of GST, there would be a significant step of the new beginnings in Indian financial system. Amalgamating several central and state taxes into a single tax will mitigate cascading or double taxation, to remove cascading effect of taxes and provide a common nation-wide market for goods and services, India is moving towards introduction of Goods and Services Tax (GST).

Conclusions: *This paper presents an overview on Digitalization of GST concept, explains its features along with its mechanism. The paper is more focused on advantages of GST mechanism and challenges faced by India in execution.*

Keywords:

GST, Indirect Tax, Cascading, Mechanism of GST.

9.1 Introduction:

India's prior indirect tax structure was incredibly complicated. The Central and State Governments imposed numerous different kinds of tariffs on goods and services. We were required to pay "Entertainment Tax" just to see a movie. Value Added Tax (VAT) was a tax that we had to pay while buying goods and services. Additional taxes included Excise, Import, Luxury, Central Sales, and Service taxes. But wouldn't it be good if there were only one single tax rate in place of all these levies? In India, all products and services are subject to an indirect tax known as Goods and Services Tax (GST). One of the major tax reforms implemented to date aims to levy taxes consistently under the tenet of "one country, one market, one tax." It is the single largest tax on goods and services in India. The GST was implemented all at once, uniting the Indian economy. The Goods and Service Tax Act was approved by the Indian Parliament on March 29, 2017, and it became effective on July 1 of that same year. GST is a tax on products and services that is applied from the point of manufacture to the point of purchase. This taxation method is used in more than 160 nations.

9.2 Journey of Digitalization of GST In India:

The tax code in India was quite complicated. In the 1980s, there was a clear need for tax reform, and in the 1990s, consideration of a GST system became more popular. The bullet points below provide a sense of chronology for the arduous journey that GST in India had to travel.

A. Following careful consideration by his economic advisory panel, which included former Reserve Bank of India (RBI) governors C Rangarajan, Bimal Jalan, and I.G. Patel, the Atal Bihari Vajpayee government of India made the Goods and Services Tax (GST) proposal in 1999.
B. To create a GST model for an intricate nation like India, former prime minister Atal Bihari Vajpayee formed a team with the assistance of the former finance minister of West Bengal, Asim Dasgupta.
C. The committee chaired by Asim Dasgupta was also tasked with looking into the logistical and technical prerequisites for the GST's effective implementation. The back-end technology that was being looked into is referred to as the GST Network, or simply GSTN.
D. In 2014, after the formation of Government led by Prime Minister Narendra Modi, Former Finance Minister Arun Jaitley introduced the GST bill in the Parliament.
E. In 2015, the former Finance Minister set the deadline of April 2017, to introduce Goods and Services Tax (GST).
F. On March 29, 2017, the Lok Sabha passed the Central Goods and Services Tax Bill (CGST), the Integrated Goods and Services Tax Bill (IGST), the Union Territory Goods and Services Tax Bill (UTGST), and the Goods and Services Tax Compensation Bill. Following GST Council approval, these bills were adopted by the Lok Sabha.
G. The measures described above were approved by the Rajya Sabha on April 6, 2017, and six days later, on April 12, 2017, they became law.
H. After the passage of various GST laws at the Central and State levels, on 1st July 2017, Goods and Services Tax was Launched all over India.

9.3 Objectives of Digitalization of GST:

The major objective of digitalization of GST was

- to digitize tax compliance to make the process simpler and attain an effective rise in the collection of tax.
- the development of a single market in India with a unified tax structure. (One Nation, One Tax, One Market)
- iii) to broaden the tax base by enticing more taxpayers and raise tax revenue.to simplify tax return procedures through common forms and avoidance of visiting tax departments.
- to provide online facilities for payment of taxes and submission of forms. Goods and Services Network (GSTN), a robust Information Technology system has been created for the operation of GST.

9.4 Types of Taxes Are to Be Subsumed (Clubbed) In the GST:

The Empowered Committee of State Finance Ministers, which deliberated on the tax and its implications, has recommended what all taxes are to be subsumed in the GST:

Goods and Services Tax (GST) would replace the following taxes currently levied and collected by the Centre:

- Central Excise duty
- Duties of Excise (Medicinal and Toilet Preparations)
- Additional Duties of Excise (Goods of Special Importance)
- Additional Duties of Excise (Textiles and Textile Products)
- Additional Duties of Customs, commonly known as Countervailing Duty (CVD)
- Special Additional Duty of Customs (SAD)
- Service Tax
- Cesses and surcharges in so far as they relate to supply of goods or services

Goods and Services Tax (GST) would replace the following taxes currently levied and collected by the State:

- State Value Added Tax (VAT)
- Central Sales Tax (CST)
- Purchase Tax
- Luxury Tax
- Entry Tax (All forms)
- Entertainment Tax (not levied by the local bodies)
- Taxes on advertisements
- Taxes on lotteries, betting and gambling
- State cesses and surcharges insofar as far as they relate to supply of goods or services.

9.5 Mechanism of GST:

A. HOW GST is Working?

A product has to go through different stages before it reaches the end consumer, and there are several taxes applicable throughout this process. However, this situation will change in the GST regime. Here's an illustration to understand how:

Stage- I: Manufacturing:

Utilizing the 5% GST that is applicable and the manufacturing of garments as an example. The business spends INR 1,000 on basic goods, plus GST of INR 50 (5% of INR 1,000).

He then adds his own value of INR 100 to the raw materials while the product is being made. The item's gross value now stands at INR 1,100. Now, INR 55 (5% of 1,100) is the total tax paid on the creation of the clothes. Under the current tax code, the manufacturer would have to pay a tax of INR 55, but under GST, he can deduct some of his tax because he previously paid it when he purchased the raw materials.

Therefore, the final GST that the manufacturer will incur will be of INR 5 (total tax amount till now **minus** the tax he has already paid) i.e., **INR 5** (55-50)

Stage -II: Wholesale; In this instance, the garment is sold from the manufacturer to the wholesaler for a total price of INR 1,100, which includes INR 55 (5% of 1,100) for GST. The wholesaler then adds his value (or margin), which is 100 INR, bringing the total to 1,200 INR (1,100 + 100). 5% of 1,200 equals 60 INR in total taxes, which is the ultimate sum. Similar to the manufacturer, the wholesaler may deduct this tax from the tax he has already paid when buying the items from the producer. In light of this, the wholesaler's ultimate GST would be INR 5 (60 - 55).

Stage-III: Retailer: At the end of the process, the retailer pays the wholesaler INR 1,200 for the apparel, which includes INR 60 (5% of INR 1,200) for GST. He adds his value, or margin, of INR 100, bringing the total cost of the goods to INR 1,300.

The shopkeeper can offset the INR 65 (5% of 1,300) GST that would otherwise apply because he has paid a tax when he purchased the goods. The final GST incidence for the retailer would be INR 5. (65 - 60). In the end, since the shop will sell the item for INR 1,300, the consumer will only have to pay INR 65 (5% of 1,300) in GST. The amount would have been significantly higher.

B. GST Mechanisms for Different Types of Transactions:

Case -I: Sale in one state, resale in the same state (i.e For Intra-State Transactions):

Suppose, there is a flow of goods from Kolkata to Durgapur. It is an intrastate sale, thus both CGST and SGST will be taxed. The goods are then resold in Jalpaiguri via Durgapur.

Again, CGST and SGST will be taxed because this is a sale that takes place within a state. The increased sale price will increase tax obligations. Reselling includes claiming the input CGST and input SGST credit, and the remaining taxes are paid to the appropriate governments. Both CGST and SGST will be collected by the seller from the customer, and CGST would be deposited with the State Government.

Case –II: Sale in one state, resale in another state (i.e For Inter-State Transactions):

Consider the movement of products from Durgapur to Pune (outside the state). As a result, IGST will be charged. The central government receives the entire IGST. Both input taxes are taken into account while calculating the IGST. However, it is clear that the SGST never reached the central government, yet credit is still given. The heart of GST is this. The state government transfers the credit to the central government in order to make up for the loss that the central government suffers as a result.

IGST Mechanism:

There won't be a third tax, the IGST, in addition to the SGST and CGST. The GST is only a mechanism to make sure that the final SGST goes to the consumer state and to keep an eye on the flow of goods and services between states because it is a destination-based tax. The rate of CGST plus SGST will match the rate of IGST.

The Centre would levy and collect the Integrated Goods and Services Tax (IGST) for all interstate sales of goods and services. The IGST system will enable the easy transfer of input tax credits across States. Following the adjustment of the IGST, CGST, and SGST credits from his purchases (in that sequence), the interstate seller would pay IGST to the Central Government on the sale of his products. The SGST credit used by the exporting State to pay the IGST will be transferred to the Centre. While paying his output tax debt (CGST and SGST) in his home State, the importing merchant would claim credit for IGST. The IGST credit utilised to pay the SGST will be transferred by the Centre to the importing State.

C. Registration Mechanism Proposed Under GST: For

- **Existing dealers**: Existing VAT/Central excise/Service Tax payers will not have to apply afresh for registration under GST.
- **New dealers**: Single application to be filed online for registration under GST.
- Each taxpayer would be allotted a PAN-linked taxpayer identification number with a total of 13/15 digits. 4. Each dealer to be given unique ID GSTIN.

D. Registration Mechanism Proposed Under GST:

The Centre and State Governments would both benefit from a shared return under GST.

The GST business operations for filing returns have eight forms specified. Only four forms would be used by the majority of average tax payers to submit their taxes. As follows:

- Return for supplies
- Return for purchases
- Monthly returns and
- Annual return
- Small taxpayers who have opted composition scheme shall have to file return on quarterly basis.
- Filing of returns shall be completely online. All taxes can also be paid online.

E. Proposed Payment of Tax Mechanism Under GST:

- Online banking, credit/debit cards, NEFT/RTGS, checks, and cash payments can all be used to make payments.
- No paper is produced at any point during the electronic payment procedure.Single point interface for challan generation- GSTN
- Common challan form with auto-population features
- Use of single challan and single payment instrument
- Common set of authorized banks
- Common Accounting Codes

F. Invoicing:

GST has its own set of rules and regulations regarding invoice structure and issuance. It is essential because it will only allow the purchaser to claim ITC if an authentic invoice is issued. E-invoicing is a well-known rule that has been imposed on businesses.

G. ITC Reconciliation:

The two most beneficial and detrimental aspects of GST are, respectively, the Input Tax Credit (ITC) and the almost monthly reconciliation. To appropriately claim an ITC in GSTR-3B, GSTR-2A and GSTR-2B data must be compared.

The automation that technology brings to the table will reduce the laborious task of reconciliation to a few minutes, freeing the user to focus on the critical study of decision-making. It is also time-consuming to monitor if the company's suppliers have accurately uploaded their GSTR-1 so that it may be automatically filled up in the company's GSTR-2A. Technology has the advantage of enabling prompt notifications and entity information to be provided to all relevant providers.

H. Way – Bill:

Rule 138 of the CGST Regulations, 2017, which governs the concept of an E-way bill and details its significance and particular procedures for issuing one, also explains its significance. Along with e-way bills, the transporter's vehicle must also be equipped with an RFID tag. The information entered into the device is therefore broadcast on the official website each time a car passes an RFID tag reader on a roadway. Pen and paper are ineffective for using this technology. The compliance procedure will be made more effective by the use of live tracking software and E-way invoice comprehension software.

I. Compliance:

A single login programme may be used to handle the whole GST compliance channel, making compliance incredibly quick and easy. It is possible to do tasks like return uploading, data integration, tax payment, and record maintenance. Businesses can benefit from GST technology by being reminded of the deadline, enabling data integration, and streamlining tax payments.

9.6 Benefits of GST:

Simplicity and low operational costs are two of the most desired characteristics of any tax system. In this particular area, the VAT system has utterly failed. Different VAT rates, registration requirements, Negative Lists for excluded goods, and compliance regulations apply in every State. Businesses must invest a lot of time, money, and effort into navigating this enormous web. The following advantages can be anticipated with a uniform set of laws and fees throughout all states:

A. For business and industry:

- A robust and comprehensive IT system would be the foundation of the GST regime in India. Therefore, all tax payer services such as registrations, returns, payments, etc. would be available to the taxpayers online, which would make compliance easy and transparent.
- The GST will guarantee that indirect tax rates and structures are uniform across the nation; as a result, GST will make conducting business in the nation tax neutral, regardless of the location chosen. A system of seamless tax credits throughout the value chain, and across boundaries of States, would ensure that there is minimal cascading of taxes. This would reduce hidden costs of doing business.
- The cost of locally produced goods and services would be reduced by the inclusion of significant Central and State taxes in GST, complete and comprehensive setoff of input goods and services, and the gradual elimination of Central Sales Tax (CST). Indian exports will benefit from this as it will make Indian goods and services more competitive on the global market. It reduces taxes on manufactures. hence it increases their business and make them more competitive at national and international level.

B. For Central and State Governments: -

- Backed with a robust end to end IT system, GST would be simpler and easier to administer than all other indirect taxes of the Centre and State levied so far.
- GST is expected to decrease the cost of collection of tax revenues of the Government, and will therefore, lead to higher revenue efficiency.
- All assesses will feel comfortable under GST as the compliance cost will be lowered, as opposed to maintaining extensive records, returns, and reporting under numerous separate statutes. It creates India as a single market.
- It taxes goods and services at the same rates so many disputes are eliminated on tax matter.
- According to our Union Finance Minister, GST will add 2 percent to the National GDP.

C. For the Consumer:

- Due to multiple indirect taxes being levied by the Centre and State, with incomplete or no input tax credits available at progressive stages of value addition, the cost of most goods and services in the country are too high but under GST, there would be only one tax from the manufacturer to the consumer, leading to transparency of taxes paid to the final consumer.
- Due to full and seamless credit, manufacturers or traders do not have to include taxes as a part of their cost of production, which is a very big reason to say that we can see a reduction in prices, which will benefit consumers.
- The GST would increase output, create more job possibilities, and promote economic inclusiveness; it is definitely a long-term policy.

9.7 Limitations of GST:

The GST is a very good type of tax. However, for the successful implementation of the same, we must be cautious about a few aspects. Following are some of the factors that must be kept in mind about GST:

A. Firstly, it is really required that all the states implement the GST together and that too at the same rates. Otherwise, it will be really cumbersome for businesses to comply with the provisions of the law.
B. Rather than being based on origin, the GST is destination-based. In such cases, the destination of the commodities must be easily discernible. Considering that it can be challenging to pinpoint the location of a service, this will be challenging in the case of services. As a result, this should be handled carefully. More awareness about GST and its advantages has to be made, and professionals like us really have to take the onus to assume this responsibility.
C. Both the federal government and the state governments will exercise dual control over every enterprise. In turn, compliance costs will increase. Since the mechanism is still complicated, it cannot completely eliminate black money and tax evasion.
D. There is fierce opposition because the states will lose autonomy over how much they can charge.
E. Businesses are opposed to the legislation because it requires them to submit precise sales records at the state and federal levels.

9.10 Possible Challenges in Implementing GST in India:

To implement the GST System, our country might face some challenges which are given below:

A. GST Rate: While a GST council is anticipated to work on establishing a GST rate, it will be difficult to agree on a consistent rate of taxation. The taxation rate may be viewed differently by producing and consuming states.
B. Compensation to States: The Union government will make up the lost revenue to the states as a result of the switch to the GST. There isn't a set formula or procedure for arriving at an exact number, though

C. Cooperation from State Govt.: GST, being a consumption-based tax, states with higher consumption of goods and services will have better revenues. So, the co-operation from state governments would be one of the key factors for the successful implementation of GST

D. GST Compensation: Some States may experience a decline in revenue in the initial years as a result of the change from an origin-based to a destination-based indirect tax system. The Centre has agreed to cover all of the States' losses for a five-year term in order to aid them during this transitional period. In order to compensate States for revenue loss due to the implementation of the goods and services tax for a five-year period, clause 19 has been added to the Constitution (122nd) Amendment Bill, 2014, on the recommendation of the Goods and Services Tax Council.

E. Accounting Systems: There is a need for training on a new accounting system for the cadre of Chartered accountants, Tax advisors, Tax bureaucrats, and similar professionals. Significant institutional and technological capacity building will be needed for this. Additionally, a new accounting system needs to be adopted by retailers, whole sale merchants, small general store proprietors, and other stakeholders. Small traders, who often are not accustomed to a reliable account keeping system, may face major difficulties using this method.

9.11 Impact of GST In Indian Economy:

A. As a result of the GST, online booking, tobacco, and insurance premiums have increased in price; however, staple foods like edible oil, wheat, rice, and lentils, as well as four-wheelers and electric goods, have decreased in price.

B. Prior to the implementation of the GST, each state in India operated independently due to its own tax laws. However, under the Two-tiered One Country-One Regime, there is only one tax that is applied nationwide, making transportation easier and reducing investor anxiety due to the regularization of the Indian market under a single tax. Tax collection will go up because many people came under the tax loop, so the chances of bribes as well as people cannot escape from it.

C. In comparison to the commerce sector, the service industry is anticipated to be more negatively affected by the implementation of GST.

D. GST will lower the price of goods that citizens are purchasing and it will increase the demand; economically, if demand increases production increases and it leads to job opportunities and reduces unemployment, it will reduce corruption because it will be checked in both the central and state governments.

E. The economy expanded 7.4% in 2017–2018, the first year the GST was in effect; this is somewhat higher than the 7.2% growth seen in 2016–2017 but lower than the 7.8% growth seen in 2015–2016.In comparison to the commerce sector, the service industry is anticipated to be more negatively affected by the implementation of GST.

F. GST will lower the price of goods that citizens are purchasing and it will increase the demand; economically, if demand increases production increases and it leads to job opportunities and reduces unemployment, it will reduce corruption because it will be checked in both the central and state governments.

G. The economy expanded 7.4% in 2017–2018, the first year the GST was in effect; this is somewhat higher than the 7.2% growth seen in 2016–2017 but lower than the 7.8% growth seen in 2015–2016.

9.12 Conclusion:

Support for the implementation of GST has been shown in 150 different countries, and it will help the Indian services sector. The nation's economy will benefit from it, and it will surely increase GDP, but it may take some time before the results become apparent because economic growth may not accelerate immediately away. We might infer from this that the introduction of GST will benefit producers and consumers by enabling them to deduct their input tax. It is expected that the good and services tax will balance out government authority. Under this system, the bad behaviour of avoiding paying taxes will cease, allowing the government and customers to prosper. That strengthens and stabilizes the Indian economy. The price of a variety of products and services has decreased due to the reduction in tax rates on a variety of goods and services. As a result, the products are now more reasonably priced, which has increased demand and, in turn, production. This will accelerate economic growth. In order to improve the quality of life in India, the 28% GST Council has also concentrated on discouraging the consumption of such sin items by placing them in the highest tax bracket.

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10. Impact of CSR Activities on Capacity Building: A study on NALCO, Damanjodi, Koraput, Odisha

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Abstract:

Background: *India is a developing nation with a manufacturing sector that contributes the most to its GDP. Since manufacturing facilities pollute the environment during production, they should take more proactive steps to lessen the negative impact through proper CSR or community development initiatives. "Capacity development" describes deliberate, concerted, and mission-driven initiatives to strengthen nonprofit administration and governance to increase their effectiveness and impact. This happens due to organizational development activities like board development, leadership development, strategic planning, program design and assessment, and others.*

Purpose: *This essay seeks to understand how an organization's CSR performance affects capacity development, particularly for the growth of rural areas. Does the study question look at how stakeholders in business treat people living in rural areas? To improve capacity building in rural areas as we move forward, what kind of CSR initiative is used, and is the business sector's implementation of the CSR program a component of company policy? Finally, it assesses how CSR projects have influenced rural residents' social and economic progress.*

Research Methodology: *Using a logical reasoning approach, we employed quantitative research methods based on the positivist worldview. We have now received 230 responses from personnel who are residing in different rural under NALCO, Reliability and validity,* *Descriptive analysis, correlation, and second-generation regression analysis by using SPSS 25*

Findings: *This article clarifies those corporate social responsibilities impact capacity building.*

Research Limitations: *The scope of this study was restricted to Secondary data on Rural areas in India. The results could be different in a global environment. This study essentially creates the framework for further research in this area.*

Managerial Implications: *By identifying the most critical influencing elements concerning strategic decision-making, CSR may be very beneficial in achieving the organization's aim.*

Keywords:

India, Social Responsibility, Corporate Social Responsibility (CSR), Stakeholders, Rural Development, Philanthropy, Economic Development, CSR Audit.

10.1 Introduction:

The term "corporate social responsibility" (CSR) refers to a business strategy that offers long-term gains by effectively managing and maximising possibilities on all three fronts: the bottom line in terms of the economy, the environment, and society. One needs to stay constantly informed about new policies and methods in order to produce results of a high calibre given the dynamism and vastness that this subject brings forth. In order to optimise social returns on investments through corporate social responsibility, many businesses in India still "do CSR" by executing a variety of CSR programmes, but without necessarily achieving noticeable improvements or having an impact on the social or natural environment (CSR). This essay seeks to understand how an organization's CSR performance affects capacity development, particularly for the growth of rural areas. Does the study question look at how stakeholders in business treat people living in rural areas? To improve capacity building in rural areas as we move forward, what kind of CSR initiative is used, and is the business sector's implementation of the CSR program a component of company policy? Finally, it assesses how CSR projects have influenced rural residents; social and economic progress. Using a logical reasoning approach, we employed quantitative research methods based on the positivist worldview. We have now received 230 responses from personnel residing in rural areas under NALCO, Reliability and validity, Descriptive analysis, correlation, and second-generation regression analysis using SPSS 25. By identifying the most critical influencing elements concerning strategic decision-making, CSR may be very beneficial in achieving the organization's aim.

The company's involvement in CSR/community development initiatives includes projects related to female empowerment, capacity building, community health & sanitation, and basic infrastructure development. The Corporations (Corporate Social Responsibility Policy) Rules, 2014 state that companies are allowed to devote up to 5% of all CSR efforts to improving the CSR skills of their personnel or those of implementing agencies.

By way of notification dated 12-09-2014, Mac modified clause 6 of the relevant regulation 4 regarding CSR activities to include administrative overhead costs as part of total CSR expenditure. As a result, administrative overhead and CSR spending will be combined to determine a 5 % maximum for capacity building.

10.2 Literature Review:

Numerous terms to refer to CSR have been proposed in extensive literature. Certain examples of these are corporate social responsibility, corporate sustainability, sustainability in business, Ethics in business and in corporations (Dahlsrud (2006), Aguinis (2011), Van Maruwitz (2003)). Entrepreneurs are primarily in charge of creating and carrying out CSR initiatives, and they are motivated by individual goals in terms of their marketing strategy and in-person and online efforts (Jenkins (2004) and Spence (2007)). The structure is supported by mechanisms to identify, implement and control aspects of sustainability (Baumgartner, 2010). The structure offers a comprehensive picture of organization-wide sustainability management by integrating three organisational fundamental elements, namely organisational structure, institutional management tools, and organisational culture. The general business environment includes variables such as politics, law, economics, society, technology, and the environment, while the Porter's Five Forces model is used to analyse industry-specific factors Valentine (2010); Porter (1979, 1980). Special consideration must be given to organisational culture and innovative management systems and practices in order to maximise their success (Kekele, 1998; Kramer, 2005; Baumgartner, 2009). An organization's strategic management approach is integrated with social and environmental considerations through a sustainability strategy (Baumgartner and Ebner, 2010). It is vital to take into account all sustainability elements, their effects, and their interrelationships for a comprehensive business sustainability strategy (Baumgartner and Ebner, 2010). Various sustainability variables are based on a variety of offensive, proactive, and defensive measures; There are distinct techniques; These are illustrations of categorical and concurrent progression models by Dilick (2000), Hardteck and Praen (2001), Schaltegger (2002), Baumgartner (2009), and Baumgartner and Ebner (2010) are a few examples. In most rural areas the concept of partnership is a comprehensive financial program, organizational structure and Natural resource management, rural development, and local service provision According to Jones and Little (2000), although they also point out that activity in the private sector is regularly missing within remote regions, for rural groups to successfully fund their many cooperation programmes, private investment is a need. This frequently calls into question the legitimacy of mining firms' engagement in local affairs, further complicating the task of helping the rural community thrive (in 2001, Veiga and others).

Our capacity to enhance the standard of living for citizens in our host communities is crucial to the long-term viability of Nalco's business. In addition to obtaining governmental regulatory permission, we actively look for a "social licence" from the residents of our host towns. We think that our host community ought to be an equal partner in the development of our company. In exchange, the positive will created guarantees the success of our daily activities. Only when duties and advantages are distributed in a mutually beneficial partnership can it be said to be truly effective (Maine 2, 2007: 1). There is no mention of the community capacity building (CCB) in the literature on policy. It is increasingly widely used, particularly pertaining to urban policy, social development, with regeneration.

In fact, a UK paper from 2000 referred to community capacity building as the "new holy grail" (Thomas (2000) and Duncan (2000): 15). According to Soares (2005), any reference to civil society; is coupled with the term "capacity building." What does the phrase mean, how come this way, and is there really something unique relating to the way CCB is carried out? The UK government has extensively used its flagship New Deal for Communities (NDC) program's use of the word "community", which invests heavily in 39 disadvantaged 'communities' and claims to put these communities at the centre of regeneration' (Taylor, 2003: 124). A "spray-on" Community as a means of addressing social issues offers there is no promise of success., as one commentator puts it (Mendez, 2006: 247). In 2004, the International Community Development Organization organised a meeting where participants agreed on a wide concept of community development. Over thirty nations' representatives, primarily from Africa, Europe, North America and Central Asia came together to form the Budapest Declaration, which is significant. Developing a community is one way to strengthen societal stance. Prioritizing community action and their perspective on developing social, economic, and environmental policies aim to strengthen local communities, including geographical communities, interest or identity of communities, and groups focused on specific topics or political agendas. Their involvement along with the power of institutions and agencies, local organisations, networks, and groupings, increases people's capacity to be active citizens. Encouraging underrepresented and vulnerable communities to speak up for themselves, engaging in communication with citizens and influencing change for their communities' transformation is essential in fostering an engaged democratic process. Community development involves skills, not just habits a strong knowledge base and a solid value base are also objectives, community development is self-evident, or it seems fashionable now to describe it as a community.

In the 1990s, in both "developed" and "developing" nations, the phrase "community capacity development" has come to refer to actions that involve collaborating with local communities to encourage full involvement in political, economic, and social realms. It started to take place. Similar to the term "community," its use lacked precision, and it wasn't apparent why it should dominate discussions of public policy. The United Nations Commission on Sustainable Development's work, Agenda 21 and UNCED (1992) contain among the first persistent references to capacity development during the literary (UNDP, 1991). Some commentators claim that it originated in Europe (Kirkles MC, 2004). The definition of capacity building in the water sector has emerged which Srinivas (2005) believes is about enhancing urban regions' capacity to handle the development of human resources., and organizational, establishment of a governing and legal framework; after capacity building, Community capacity building evolved from the policy dialogue. According to Banks and Shenton (2001), this strategy was more reliant on the North American experience as a result of the Community Investment Act community-based groups' access to mentoring and training. When discussing the development of religious communities' organisational capabilities, Ahmed and others (2004: 20) make the case that this is necessary to give organisations the ability to participate more fully in societal civility, encourage inter-community harmony, and interact with the public at large. The more specific term "capacity building" is still frequently used in both North and South American development literature (eg Healy et al. (2005), Hersey (2005), James (2005), and Cabungo (2005)). According to the Commission's definition of CCB (UK Charity Commission, 2000: 3), this involves enhancing a community's members' knowledge, awareness, and capacity to identify their needs and take an active role in society.

It appears that a sizable number of studies on CSR practises in the economic and organisational contexts of Europe and America (Boyne, 1953; Vota, 1972; Carroll, 1999; Van Maruzak, 2003; Ite, 2004; Gariga and Mele, 2004; Fish, 2004; Godfrey and Hatch, 2007; Load and Gosling, 2008; Spector, 2008; Dahlsrud, 2008; Okoye, 2009; Carroll and Shabana (Danilovic et al., 2015).

Again, there are few studies in the Indian context that are available that focus on related topics (Premanik et al., 2007; Banerjee, 2001; Pal and Pal, 2001; Singh and Ahuja, 1983; Maheshwari, 1993; Batra, 1996; Hyde et al., 1997). Few studies, which concentrated primarily on a select few specific industrial configurations, sought to examine CSR holistically. In the context of listed firms in India, there is a dearth of case study-based research concentrating on expenditure towards CSR initiatives, making year-over-year comparisons, and evaluating social impact.

10.3 The Study's Objectives:

- To comprehend the effectiveness of CSR from an Indian and global perspective.
- To evaluate the efficiency of the various techniques used by the companies.
- To understand the Corporate Social Responsibility (CSR) impact on capacity building in Nalco

10.4 Limitations of The Study:

The date of data gathering for the study coincided with the Government of Odisha's Demonetization drive (NALCO), which was one of the study's significant drawbacks. As a result, getting the necessary response from the populace became quite challenging. Few respondents outright denied sharing their data, while the majority were too hesitant to disclose any information. This adversely impacted the response rate.

Another drawback was that a large number of respondents were unfamiliar with the definition of CSR or its scope.

10.5 Research Methodology:

'Good Words, Good Thoughts and Good Deeds'.

- Zoroastrianism

10.5.1 Research Design:

The research design, which outlines the procedures for data collecting, measurement, and analysis, serves as the overall framework for the study. According to Kerlinger (1986), the research design is the strategy and framework used in an investigation to find answers to specific research questions. The plan is the general strategy or schedule for the study. It outlines the steps the researcher will take, from drafting hypotheses and their operational implications to the final data analysis.

A research design describes how the research problem is structured and the method of inquiry utilized to gather data on the connections between the problem (Kerlinger, 1986). After reading through the many literary sources, it is clear that western nations have contributed significantly to corporate social responsibility. Institutions, rules, and processes that serve as the cornerstone of corporate social responsibility in western nations are largely lacking in emerging or impoverished countries.

Descriptive narratives and case studies chosen for their convenience continue to dominate research on corporate social responsibility in developing nations. Exploratory research can make use of secondary and primary data. By highlighting the important variables, the secondary-data aids in formulating a suitable study strategy. It aids in addressing certain research issues & putting some theories to the test. Additionally, it aids in more accurate primary data interpretation. Secondary data can offer insightful information and serve as a starting point for gathering primary data. Secondary data should be handled cautiously since it could have some restrictions on relevance and accuracy. (Malhotra,2004).

Research Model: Independent Variable, Dependent Variable

10.6 Data Collection:

Several techniques can be used in survey research to gather data, including self-administered surveys by in-person administration. In the current study, information from the 565 respondents was collected in part through a standardized questionnaire that was administered personally. Villagers near NALCO served as the responders. The researcher conducted in-person interviews with a few Villages adopted by NALCO and provided CSR benefits.

Tools used for Data Collection:

- Questionnaire
- Personal interviews
- Articles from related books, journals, periodicals, and newspapers
- Research articles, theses, and dissertations, both published and unpublished
- The website provides a variety of information on the subject.

10.7 Research Hypothesis

H0: there is no significant influence of annual CSR spend on CSR by NALCO on their views about CSR

- H1: there is a significant influence of annual CSR spend on CSR by NALCO on their views about CSR
- H0: There is no meaningful connection between CSR Activities and Capacity Building at NALCO
- H2: There is a meaningful connection between CSR Activities and Capacity Building at NALCO

10.7.1 Ethical Considerations in The Research:

In social science research, ethical concerns are highly valued. In social science research, a number of concerns have been highlighted as crucial ethical considerations, involving participant consent, protection of their privacy and anonymity, avoidance of dishonesty, and accurate reporting (Babbie, 2009). A brief explanation of the proper care used in the current investigation is provided below.

The researcher has, to the best of his knowledge, made sure that appropriate care is used when acquiring and analyzing data. The data that have been reported are the end result of the complete analysis.

10.8 Analysis and Interpretation:

Profile of Respondents (Demographic)

Statistics-Reliability		
Alpha for Cronbach's	**On the Basis of Standardized Items, Cronbach's Alpha**	**No. of Items**
.838	.821	41

Item-Statistics in Summary							
	Mean	**Minimum**	**Maximum**	**Range**	**Maximum / Minimum**	**Variance**	**No. of Items**
Item Means	2.920	1.581	4.390	2.810	2.777	.426	41
Item Variances	1.309	.590	1.914	1.325	3.246	.126	41

Table 4.1 displays Cronbach's reliability coefficients for the 41 items that make up the three components, which range from 0.580 to 0.896. Reliability is 0.838 overall.

Bartlett's Test and KMO		
Sampling adequacy as measured by Kaiser-Meyer-Olkin.		.686
Bartlett's Test of Sphericity	Chi-Square in general	226.034
	df	6
	Sig.	.000

Explanation of Total Variance						
Element	Preliminary Eigenvalues			Squared-load extraction summations		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.295	57.370	57.370	2.295	57.370	57.370
2	.817	20.425	77.795			
3	.580	14.494	92.289			
4	.308	7.711	100.000			
Principal Component Analysis is the extraction method.						

Using a statistic called the Kaiser-Meyer-Olkin sample adequacy measure, you can determine how much of the variance in your variables is caused using underlying variables. If your data have high quantities, a factor analysis can be helpful (around 1.0).

If the number is less than 0.50, the factor analysis's findings are probably not going to be particularly useful. Bartlett's sphericity test's value for (KMO) was 0.686, which is more than 0.5.

By demonstrating that your variables are unrelated and improper for structure discovery, Bartlett's test of sphericity disproves the claim that your correlation matrix is an identity matrix.

Your data might benefit from a factor analysis, according to small significance values (0.05).

A. Hypothesis Testing:

H0: there is no significant influence of annual CSR spend on CSR by NALCO on their views about CSR

H1: there is a significant influence of annual CSR spend on CSR by NALCO on their views about CSR

Correlations			
		Awareness	**Impact**
Annual CSR	Correlation by Pearson	1	.644**
	Sig. 2 tailed		.000
	N	238	238
CSR Activities	Correlation by Pearson	.644**	1
	Sig. 2 tailed	.000	
	N	238	238
**At the threshold of 0.01, correlation is significant (2-tailed).			

Correlation between both the annual CSR spending, and CSR activities are strongly correlated and significantly level satisfied.

There is a significant influence of annual CSR spend on CSR by NALCO on their views about CSR

- H0: There is no demonstrable relationship between CSR Activities and Capacity Building at NALCO
- H2: There is a demonstrable relationship between CSR Activities and Capacity Building at NALCO

Correlations			
		Awareness	**Impact**
CSR Activities	Correlation by Pearson	1	.644**
	Sig. 2 tailed		.000
	N	238	238
Capacity Building	Correlation by Pearson	.644**	1
	Sig. 2 tailed	.000	
	N	238	238
**At the threshold of 0.01, correlation is significant (2-tailed).			

Model-Summary									
Model	**R**	**Square R**	**R Square Correction**	**Estimate's Standard Error**	**Change-Statistics**				
					Square Change in R	**Change F**	**df1**	**df2**	**F Change in Sig.**
1	.644[a]	.415	.412	5.730	.415	147.641	1	208	.000
a. Predictors: (Constant), Awareness									

ANOVA[a]						
Model		**Square Sum**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	4847.887	1	4847.887	147.641	.000[b]
	Residual	6829.808	208	32.836		
	Total	11677.695	209			
1. The Dependent Variable - Capacity Building						
2. The Predictors - (Constant), CSR Activities						

Coefficients[a]						
Model		Inaccurate Coefficients		Consistent Coefficients	t	Sig.
		B	Standard Error	Beta		
1	Constant	19.563	1.571		12.452	.000
	CSR Activities	.460	.038	.644	12.151	.000
a. Dependent Variable: Capacity Building						

Both analysis Regression analysis and Correlation were done for testified to the relation between CSR activities and Capacity building

- CSR activities and capacity building at NALCO are significantly correlated.

10.9 Conclusion:

The business has typically been seen as separate from morals and government regulations. All entities are built on the principle that power always prevails over justice. Controlling shareholder reputation, infection, and investments in co-competent resources are the key factors. It is well understood that there are ethical, legal, and financial aspects to the business. Corporate social responsibility has become increasingly popular over the past few decades, yet many experts disagree vehemently on its importance for business law and economic development. Some contend that because CSR is a relatively new and broad concept, it is difficult to define precisely what is meant by "corporate social responsibility," and that it is thus complicated to adopt and manage various programmes.

Racial, ethnic, or religious distinctions do not limit CSR. Unfortunately, concern for the community is frequently confused with socialism. Contrarily, every individual has the potential to achieve and is a valuable asset in economic activity. CSR is a philosophy and an unwritten understanding of the community. A nation's future can be enhanced by this hidden culture. If employees do not understand the goal of CSR activities or the message, initiatives are difficult to succeed. The government cannot alone improve the disadvantaged in society, and organisations need to acknowledge this. Many of the top businesses worldwide are now aware of how important it is to support socially conscious projects to promote their brands. It derives from the need to succeed and feel good about oneself and the business's commitment to social responsibility. The study of the second hypothesis, "There is a lack of sustainable development due to inefficient CSR implementation," was supported by these findings.

10.10 Suggestion:

The study's findings suggest that to increase the effectiveness of CSR programs; It is imperative to increase the general public's understanding of CSR. Various stakeholders, including the media, may raise awareness among society in order to highlight the great work carried out by commercial enterprises in this field. The public's perception and attitude towards corporate social responsibility programmes will change significantly as a result of this. As a result of this campaign, other corporate entities effectively join the league and address various social challenges.

Most CSR efforts and programs are implemented in metropolitan regions; thus, the poor and those in need in rural areas do not benefit from them. The businesses should carefully explore their initiatives in rural areas while concentrating on metropolitan ones.

10.11 Future Plans for The Research:

The research was only focused on the NALCO, Damanjodi, to find out the impact of CSR activities on Capacity building of the poor villages near Damanjodi. Further, the study collects data from the organization's CSR activities to develop capacity building in India.

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11. Data Protection by MIS Technique

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Abstract:

Data protection on digital platforms is becoming a critical problem due to the internet of things' (IoT) fast adoption of digital gadgets. The nature of threats continuously changing day-by-day. The researchers and professionals are continuously working and innovating several models to protect confidential information form anonymous people. Since security is never ending process therefore a novel information protection algorithm is presented in this paper which is based on identification of maximal independent set (MIS) using graph Colouring technique. In this paper the idea of tree parity machine is used to generate random graph. The proposed information hiding method is simple and effective as per needs. The presented algorithm can be used to embed confidential information in the digital devices to maintain privacy and validity of data integrity in the IoT platform as well.

Keywords:

Cryptography, Encryption, Decryption, Information hiding, Ciphering, MIS.

11.1 Introduction:

The process of transforming Information to unreadable format called encryption and unreadable data is cipher text. The reverse process that is conversion of cipher text to its original text is named decryption. The whole method of encryption and decryption is called cryptography. The Cryptography algorithms classified mainly into three major categories: symmetric/Private-key cryptography, asymmetric/Public-key cryptography and hash function (compression functions). Private-key cryptography uses identical key used for encoding and decoding process by sender and receiver.

The key is shared separately and secretly between the sender and receiver. The Data Encryption Standard (DES) and Advanced Encryption Standard (AES) are best instance of Private-key cryptography. In public-key or as you say asymmetric key crypto system sender and receiver uses two dissimilar keys for encryption and decryption data.

Two types of keys exist in this method, a private key and a public key. Data encryption and decryption require the public and private keys, respectively. Public keys can therefore be freely shared, whilst private keys must remain confidential.

In Graph Coloring, assign colours to each vertex of a graph G in the graph colouring technique so that neighbouring vertex colours never match. (Pal, S. K., & Chakraborty, N. 2017, Pal, S. K., & Mishra, S. 2019). The objective is to accustom the fewest possible colours overall to colour a graph. The chromatic number of a particular graph is the least number of colours used to colour it. Graph colouring is currently an NP Complete Category problem.

The idea of graph coloring is used for conflict determination in problem. The type like, the certain couples of elements are in-compatible in a vertex set V. The issue is to determine the fewest possible subsets of elements that can coexist by fencing off vertex set V (Qu, G., & Potkonjak, M. 1998, Berghel, H., & O'Gorman, L. 1996).

The situation can be explained by a straightforward connected graph, G= (vertices V, edges E), in which all pairs of incompatible elements are used to form the vertex set V, and edge set E.

In order to properly colour that graph, the vertex set can be divided into k subsets, which is equivalent to the total number of colours used (Gu, J., Qu, G., & Zhou, Q. 2009, Croitoru, C., Luchian, H., Gheorghies, O., & Apetrei, A. 2002). A polynomial time algorithm cannot solve the NP-complete problem of identifying the chromatic number of a graph.

An independent set is a subset of nodes in an undirected graph where nodes in the subset cannot be adjacent. If no node can be added to the subset without creating an irreverent independent set known as the maximum-independent-set, the independent set is maximal. A set with a maximum cardinality is referred to as the maximum independent set (MIS) (Qu, G., & Potkonjak, M. 1998, Pal, S. K., & Sarma, S. S. 2012).

Here, in this model a random graph is created assuming probability of edge density by using the idea of tree parity machine. A degree-constraint-matrix is created based on the created random graph (Pal, S. K., Datta, B., & Karmakar, A., 2021).

The help graph colouring has been used in this paper to describe an information hiding technique. The suggested technique used to determine independent set(s) of the original graph and give each set a different colour. Watermarking is the specific arrangement of independent sets and its vertices.

By recreating the independent sets in the precise order of creation, the message, which takes the form of a binary string, can be extracted from the watermark.

11.2. Terminologies:

In this section some terminology has defined which has been used further in next sections of this paper.

11.2.1 Degree Constraint Matrix:

A degree constraint matrix (DCM) is created from the graph G, which contains fields like, node n_i, adjacent vertices corresponding to each node $n_{i,}$ of graph, and degree-sum of all the adjacent nodes.

11.2.2 Vertex Colouring:

Vertex colouring involves giving each vertex in a graph a different colour, in a way such that adjacent vertex cannot have similar colour. The assignment of colour is done in a way such that it only uses a few colours to colour each vertex. The minimum number of colour by which all vertices of the graph is coloured is called chromatic number.

11.2.3 Watermark:

Watermark is the method of embedding message in the image, audio, or even in video, in a way such that original message cannot extract by anonymous person. The embedded message can be extract only if know the embedding procedure. Watermark is used to protect, identify an object.

11.2.4 Tree Parity Machine:

The multi-layered feedforward network that makes up the tree parity machine has (KxN) input neurons, K hidden neurons, and a single output neuron (Pal, S. K., Datta, B., & Karmakar, A. 2021, Pal, S. K., & Mishra, S. 2019).

Here, input of the network is X_{ij}.= (-1, 0, +1).

A weight is assigned to the link have in between the input to hidden neurons is, W_{ij}= {-L, …, 0, …, +L}.

The hidden layer output is calculated using formula,

$$\sigma_i = sgn\left(\sum_{j=1}^{N} W_{ij}X_{ij}\right)$$

Signum function return following values,

sgn(x)= {-1 when value of x less than 0, 0 when value of x equal to 0,

1 when value of x greter than 1}.

The formula below is used to calculate the output.

$$\tau = \prod_{i=1}^{k} \sigma_i$$

11.3. Algorithm for Information Hiding:

- **Step 1:** Start
- **Step 2:** Enter number of nodes (n), and probability of edge (p), of graph.
- **Step 3:** Created random a graph G (n, p), using tree parity machine.
- **Step 4:** Input message(m) and convert it into ASCII number.
- **Step 5:** Degree-constraint-matrix (DCM) of the current graph was created by adding the degrees of all of the adjacent nodes, or degree-sum. Every node of the DCM matrix is taken into consideration for this operation.
- **Step 6:** Select a node n_i, from DCM which is corresponding to the value highest degree-sum.
- **Step 7:** Find out length l, of the message to be hide in round one using formula$2^{\lfloor n_i \rfloor}$, where node n_i, in respect to the maximum degree-sum of present-graph.
- **Step 8:** Eliminate the node n_i, and stored it in the set MIS.
- **Step 9:** The neighbours of n_i, is removed the graph and keep it in redraw-matrix (RD).
- **Step 10:** Modify present-graph after removed the node n_i, and it neighbours.
- **Step 11:** The vertices reorder again of the newly formed graph that is, present-graph.
- **Step 12:** Repeat step 5 to step 11, till present graph contains more than two nodes.
- **Step 13:** Construct new present graph using vertices of redraw-matrix (RD = existing-graph - MIS).
- **Step 14:** Continue step-5 to step-13 till message(M) not empty.
- **Step 15:** Stop.

11.4. Retrieve of Message:

The maximal independent set created with specific sequence of the vertices is actually hiding of message in the graph is watermark. The binary string messages can retrieve from created watermark rebuilding the maximal-independent-set in the specified order. The original message in binary form is encrypted in the maximal-independent-set which was created by the proposed methods. The specific order of selected maximal-independent-sets regulates credibility. A vertex may include in any one maximal-independent-set of graphs. The order of vertices in the maximal-independent-set has an important role therefore keep maintain specific order (Pal, S. K., &Sarma, S. S. 2012). A maximal-independent-set with k nodes, that are arranged differently will produce different messages. However, the likelihood of getting similar maximal-independent-set from dissimilar messages after encryption. If the sequence is rearranged using the same technique's maximal-independent set indexes, the concealed binary string will be altered.

11.5. Experimental Analysis:

The presented algorithm has an O (log n) time complexity, because message has been embedded into the nodes of a graph is exactly once. The message embedding process will continue until message is empty. The C programming language has been used to implement the algorithm provided in this study. The experimental result compared and analysed with the existing algorithm (Qu, G., & Potkonjak, M. 1998, Pal, S. K., &Sarma, S. S. 2012). The programs were executed by creating a simple connected random graph with different number nodes and edge density. The specified node count (n) and edge density (p) are used to generate the graph. The execution time of each algorithms corresponding is mentioned, Table 1 lists the number of nodes and edge densities. A comparative chart of the algorithm's performance given in the figure 11.1.

Table 11.1: Execution Time Taken by The Programs

Node Count	Edge	Algorithm Execution time (in second)		
		(Qu, G., & Potkonjak, M. 1998) algorithm	(Pal, S. K., &Sarma, S. S. 2012) algorithm	Presented algorithm
10	42	35.80	35.72	35.49
15	72	100.55	98.76	97.22
20	97	233.67	224.32	221.34
25	78	430.65	424.31	428.57
30	30	578.44	559.22	553.42
35	121	1276.45	1229.57	1189.79
40	66	987.43	971.89	957.61
45	86	1188.33	1118.76	1081.59

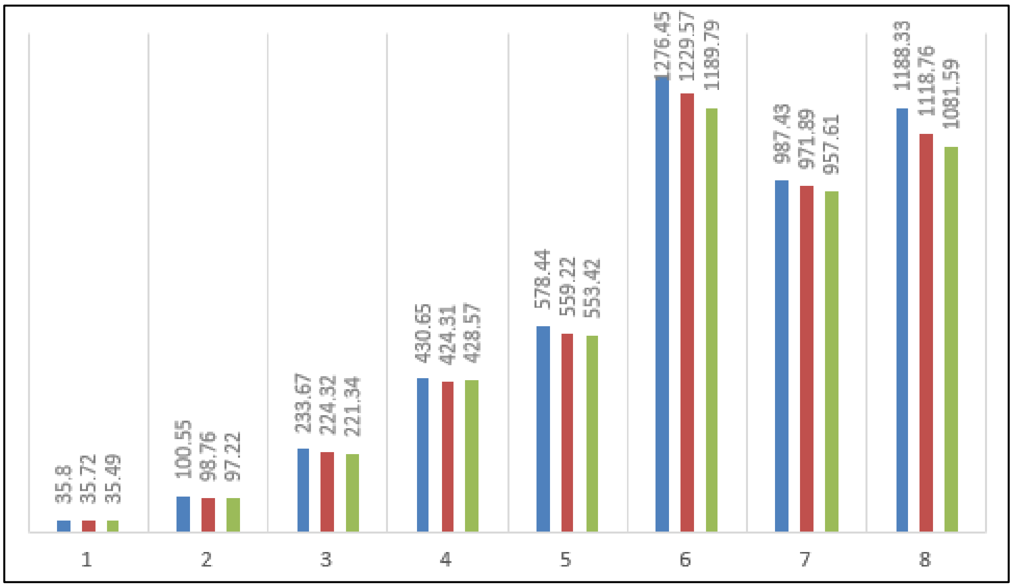

Figure 11.1: Pictorial representation of data given in table 11.1.

11.6. Conclusion:

The cryptography is a tool which is used to increase security level of data during communication even data is passing through insecure public channel. By applying dynamic cryptography tools and techniques the protection of data can improve in the area defence, banking, digital business industry and even in government sector. It is true cryptography alone is not enough to provide data protection and privacy in reality but it cannot ignore too. The algorithm presented is developed using unique approach of identification on maximal independent set by graph colouring. The graph is generated randomly using tree parity machine.

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12. MADA: Malware Application Detection Approach in Android using SVM and ANN Model

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Abstract:

Advancements in growing technology and amidst the ongoing covid-pandemic period, the room for malware applications present in the internet world will only keep increasing. To tilt the scale against cybercriminals various improvements are constantly being made to detect malware applications and one of these techniques is the state of the art in machine learning. Various efforts are being made to improve the predictions both via static and dynamic analysis using appropriate feature sets and classification models. In an effort toward this direction, many researchers are working on the effective prediction of smartphone malware.

In this paper, one of the newer datasets namely CICInvesAndMal2019 has been used to extract the permission data of the apps from the manifest.xml files to perform static analysis on the same. These permission data have been trained with Support Vector Machine (SVM) and Artificial Neural Networks (ANN) (classification models) and further fine-tuned using two popular hyperparametric tuning algorithms namely grid search and genetic algorithm for SVM only to classify the nature of apps.

An accuracy of greater than 95% has been achieved, which is on par with some previous work.

Keywords:

malware, android, ANN, SVM, hyperparameter

12.1 Introduction:

One of the most popular operating systems in the market of smartphones is undeniably the Android operating system ruling over about 70% of the mobile market share. With the technological advancements throughout all these years, the features of the smartphones have only kept improving and have almost reached a point where they are inseparable from our lives, even more so during these years of the covid pandemic where it has acted as a tool and kept the people connected with their friends as well as with their job routines.

However, these technological advancements have also facilitated cybercrimes to a certain extent, and it becomes all the more important for a smartphone user to have the updated knowledge of these crimes and take the required precautionary measures to avoid falling into the traps laid by these cybercriminals. One of the categories of cybercrimes known as PUP (Potentially Unwanted Programs) refers to the set of malicious applications which are developed by cybercriminals to fetch hidden personal information from the users for their own monetary gains.

In this paper, the CICInvesAndMal2019 (Laya Taheri et al., 2019) dataset has been used to extract the permission data of the apps from the manifest.xml files to perform the static analysis. The analysis is carried out by training these permission data using classification models (SVM and ANN) and finally fine-tuning the results using two popular hyperparametric tuning algorithms namely grid search and genetic algorithm in order to classify the apps as malign or benign. The remaining paper is structured in the following manner: First the paper will highlight the related studies with respect to this field. Next, the paper will focus on the methodology used for performing this analysis. This is followed by, analysis of the results. Finally, the paper is concluded with a small note on scope of future work.

12.2 Related Study:

In one of the papers titled "Android Malware Detection Using Deep Learning", the authors make use of the deep learning technique namely Gated Recurrent Unit (GRU) on the CICAndMal2017 dataset for malware detection in android applications. They made use of two static features namely Permissions and Application Programming Interface (API) from the applications and were successfully able to detect malware with an accuracy of 98.2%. (Omar N. Elayan & Ahmad M. Mustafa, 2021).

In another paper titled "Android Malware Detection Using Machine Learning", the authors came up with a system wherein the user can see the percentage of malicious content of an android application. The system has a user-friendly Graphic User Interface (GUI) and performs permission-based and semantic analysis on applications to produce the desired output to user. (Rishab Agrawal et al., 2020). In the paper titled "Android Malware Classification Using Machine Learning and Bio-Inspired Optimisation Algorithms", the authors made use of the permissions and class file of android applications to detect malware in the applications. They made use of various machine learning algorithms like SVM, SGD in combination with various bio-optimized algorithms like Particle Swarm Optimization, Genetic Algorithm, etc. for enhanced results.

These were tested on three datasets namely CICInvesAndMal2019, KuafuDet and Andro-Dump. For each of the mentioned datasets the best accuracy was achieved on Andro-Dump dataset using SGD with an accuracy of 99.6%. (Jack Pye et al., 2020).

12.3 Methodology:

12.3.1 Dataset:

The dataset used for the android malware detection analysis is CICInvesAndMal2019. The dataset consists of permissions and intents of 426 malware and 5,065 benign applications as static features. The samples of Malware that the dataset consists of are Adware, Ransomware, Premium SMS, SMS and Scareware. A tool named Androguard has been used in this paper for extracting permission-based features from different apps. On the other hand, the Jupyter notebook has been used for data preparation and model training.

12.3.2 Data Preprocessing:

In the data pre-processing step, the values which are missing and possible outliers are taken care of. However, the dataset used in this paper had no values missing nor were there any outliers as a result none of the attributes were omitted. For the analysis purpose though, only the permission data was used and therefore all the additional data were neglected.

12.3.3 Classification Models:

In this paper two classification models have been used, whose working and implementation in accordance to our extracted permission dataset are explained below:

12.3.4 Support Vector Machine (SVM):

The SVM systematically classifies the data points by first starting with data that are relatively in the lower dimensions which are the permission feature vectors of the smartphone applications, then it elevates them into a higher dimension followed by systematic segregation of the higher dimensional data into two categories (benign and malignant for this case) with the help of kernel function. One of the major kernel functions which has been used for SVM is the Radial Basis Function (RBF) which helps with computing the relationships between observations (permission related data points) in higher dimensions. The Radial Basis Function has been considered for training the model due to the fact that it is one of the main functions as it has fewer hyperparameters than the polynomial kernels, it non-linearly maps samples into higher dimensional space and faces fewer numerical difficulties. (Durgesh K Srivastava et al., 2010).

12.3.5 Artificial Neural Network (ANN):

The Artificial Neural Network used in training the model in this paper consists of the main units which are referred to as perceptron's (permission feature vector in this analysis) and each of these are further connected to others in different layers.

These interconnections among so many perceptrons are referred to as multiple perceptron interconnections or in other terms ANN. The ANN passes on the data taken by input perceptrons to others in successive layers before it reaches the final set of perceptrons in this case the two nodes classifying the app into malignant or benign in the output layer (refer to Figure 12.1). The activation function in ANN determines if a node (malignant or benign) has to be fired or not.

For this analysis, the Rectified Linear Unit (ReLU) activation function was used as it has faster computation compared to Tanh and Sigmoid also it is one of the most used activation functions in the world right now. (Chigozie Nwankpa et al., 2020).

12.3.6 Hyperparameter Tuning:

For this analysis, in order to obtain the best possible results for the classification models (SVM and ANN), hyperparametric tuning has been used. The two algorithms implemented here are as follows:

12.3.7 Grid Search:

The algorithm goes through all the different combinations of hyperparameters. Followed by evaluating the performance value for each of these combinations and selects the best possible combination as hyperparameter (refer to Figure 12.2 for flow chart of grid search with respect to malware detection).

The analysis makes use of the GridSearchCV () method available in the scikit-learn class model_selection. It consists of 4 main arguments which are:

- **estimator:** it refers to the model instance (SVM and ANN in this case) for which the hyperparameters are check against.
- **param_grid:** it is a dictionary with parameter names as keys and a list of parameter values. Here the param_grid is made accordingly for the SVM and ANN models.
- **scoring:** it refers to performance measure metric. For this analysis, scoring has been equated to none.
- **cv:** an integer representing the number of K fold cross-validation. For the SVM model 5-fold cross-validation was used before outputting the best set of hyperparameters.

12.3.8 Genetic Algorithm:

This algorithm is a subset of evolutionary algorithms used in computation. This algorithm produces plenty of possible solutions to a given problem.

These solutions further down the line undergo recombination and mutation, producing new off-springs and this process is repeated over several generations unless it reaches a fitter generation of individuals, and the entire process ends when a stopping criterion is met. (Refer to Figure 12.3 for a detailed flow chart of genetic algorithm with respect to malware detection).

12.4 Result Analysis:

The analysis was performed on Windows operating system having 16GB RAM running on an i3 processor. (Table 13.1 gives an overview of the evaluated results and results of some previous work).

12.4.1 Support Vector Machine (SVM):

For this classifier model, the permission data was split into – 80% for training and 20% for testing the model, along with 5-fold cross-validation which implies one part was used for testing and the remaining 4 parts were used as training set. This model was then further fine-tuned using grid search and genetic algorithm. Finally, cross-checking was done with the fine-tuned model by feeding it some random malware and benign apps to check if it correctly classifies them or not. (Refer to Figure 12.4).

12.4.2 Grid Search:

For grid search the Param grid parameter was defined as follows:

{'C': [0.1, 1, 10, 100, 1000],], 'kernel': ['rbf'’], 'gamma': [1, 0.1, 0.01, 0.001, 0.0001]}

Here:

- ‘C’ is the penalty parameter to control the error.
- ‘gamma’ defines the influence of each training session on the data points.
- ‘kernel’ refers to the kernel function used for the SVM.

On running the grid search algorithm using GridSearchCV () method, following result was obtained as the best hyperparameter values: {'C’: 10, 'kernel': 'rbf', ‘gamma’: 0.1} which in turn gave an F1 score of 94.

12.4.3 Genetic Algorithm:

For the genetic algorithm, the parameters under it are defined as follows: total generations (halting criteria – 7^{th} generation) = 7, population size (number of chromosomes in population) = 200, number of children (created during crossover) = 5, mutation rate (probability of chromosome mutation) = 5%. On running the algorithm with this defined set of parameters, it resulted in an F1 score of 95.

12.4.5 Artificial Neural Network:

For this classifier model too the permission data was split into – 80% for training and 20% for testing the model. This model was then further fine-tuned using grid search and as a final step cross-checking was done using the fine-tuned model by feeding it random malware and benign apps so as to check if it correctly classifies them or not. (Refer to Figure 12.4).

12.4.5 Grid Search:

For grid search algorithm we defined the param_grid as follows:

{'learning_rate': [‘constant’, ‘adaptive’, ‘invscaling’], 'activation': [‘identity’, ‘tanh’, ‘logistic’, ‘relu’], 'solver': ['adam', ‘lbfgs’, ‘sgd’], ‘hidden_layer_sizes’: [3, 10, 20]}

Here:

- learning rate: it determines how quickly or slowly an ANN learns a problem.
- activation: refers to the set of activation function which has to be used while training the ANN.
- solver: refers to stochastic gradient descent (SGD) based optimizer for optimizing the parameter.
- hidden_layer_sizes: represents the number of neurons to be used in a given hidden layer. For this model only one layer of hidden layer was used.

On running the grid search algorithm using GridSearchCV () method, following result was obtained as the best hyperparameter values: {'learning_rate': ‘constant’, 'activation': ‘relu’, ‘solver’: 'lbfgs', ‘hidden_layer_sizes’: 20} which in turn gave a F1 score of 94.3.

12.5 Conclusion:

This research made use of the CICInvesAndMal2019 dataset to extract the permission data out of the manifest.xml files of the android applications. Further, these extracted permission data were trained using SVM and ANN classification models and fine-tuned using grid search and genetic algorithm. Even with the limited computational resources of our laptop system both the hyperparametric algorithms managed to bring an improvement in the model’s classification accuracy for both SVM and ANN when grid search and genetic algorithm were used. In future, this research could be extended to other new updated datasets of the upcoming years and an in-depth analysis can be conducted i.e., by exploring the other classification models, feature selection techniques and improving further on the hyperparametric tuning factor in a more computationally powerful system so as to get the best classification predictions from these models.

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Table 12.1: ***Overall Classifier Evaluation Metrics for our work as well as some previous work.***

Paper	Dataset	ML Algorithm	Accuracy	F1-Score	Recall	Precision
Elayan et al	CICAndMal2017	Gated Recurrent Unit	98.2	98	99.2	96.9
Taheri et al	CICInvesAndMal2019	Random Forest	N.A.	N.A.	95.3	95.3
Chen et al.	KuafuDet	Random Forest	96.35	N.A.	N.A.	N.A.
Pye et al	CICInvesAndMal2019	SVM + ABC Optimization	95.7	92	92	92
Pye et al	KuafuDet	Neural Network	94.9	96.7	98.8	94.7
DREBIN	DREBIN	SVM	93	N.A.	N.A.	N.A.
Fatima et al	N.A.	SVM + Genetic Algorithm	95	N.A.	N.A.	N.A.

Paper	Dataset	ML Algorithm	Accuracy	F1-Score	Recall	Precision
Fatima et al	N.A	ANN + Genetic Algorithm	94.1	N.A.	N.A.	N.A.
Our Work	CICInvesAndMal2019	SVM + Grid Search	95	94	93	93

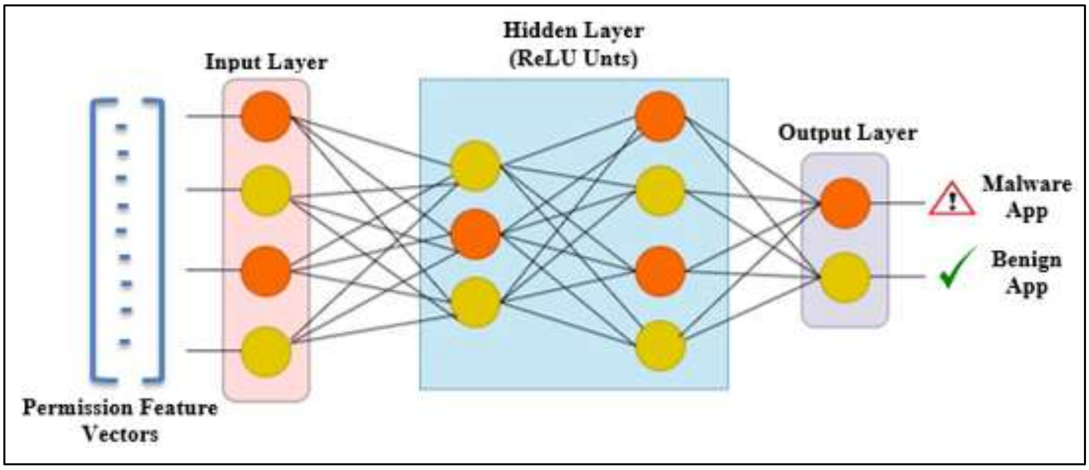

Figure 12.1: ***Architecture of Artificial Neural Network in Proposed Work.***

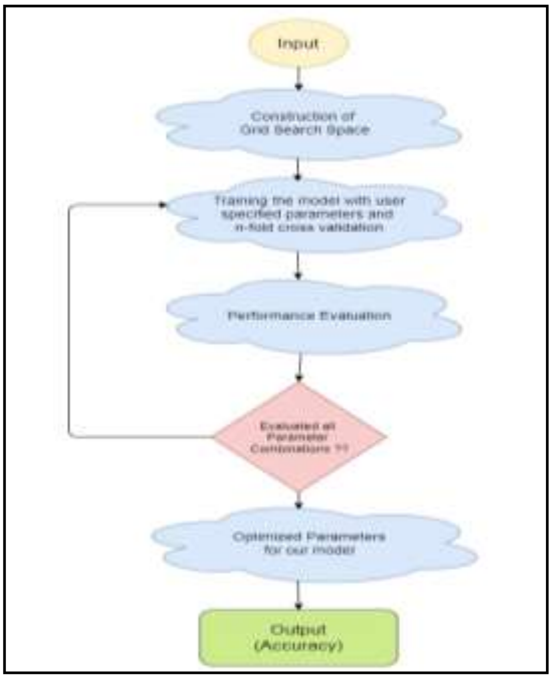

Figure 12.2: ***Grid Search, Working Flow Diagram***

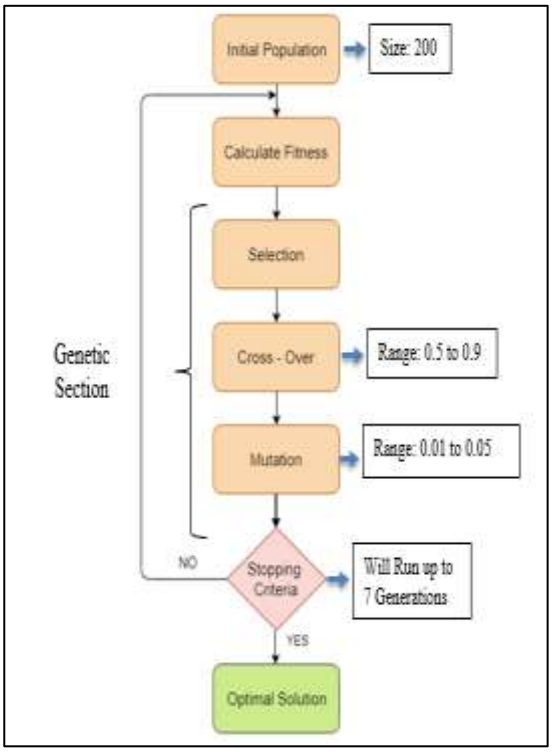

Figure 12.3: ***Genetic Algorithm, working flow diagram***

Figure 12.4: SVM and ANN Predict the App Classes Malware or Not Based on Their Permission Access Values.

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13. Isolated Spoken Word Transformation Using Feedforward Neural Network in Speaker Independent Speech Recognition

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Abstract:

Advancements in growing technology and amidst the ongoing covid-pandemic period, the This paper presents a methodology for automated speech signal recognition of speaker independent robust isolated words. The use of voice command indeed contributes to a better integrated human-machine interface integration whereby one can give voice command which intelligent machine understand and obeys. It uses a feature set vector consisting of a combination of first-three formant of vocal speech signal tract. In this study, a feedforward neural network with back propagation (FFNN-BP) model based automatic speech-controlled system for speaker independent isolated spoken word recognition with mapping functions has been developed. This system is tested for the training and recognition of spoken commands and has given fairly accurate results with the precise operations of the automated speech recognition system for the given instruction.

Predicted prosodic parameters of the target isolated words independent of speakers are incorporated into neutral speech at multi-layered architecture to produce the resultant output. The whole process is evaluating quality assessment by subjective tests after incorporating inputted words or speech. The proposed model achieved an average recognition rate of 93.44% approximately. Finally, both subjective and objective tests reveal good and an increased accuracy with FFNN-BP model.

Keywords:

Word transformation; FFNN; zero crossing rate; linear predictive analysis; end point detection; multi-layer perceptron; MATLAB; speech recognition;

13.1 Introduction:

Machine learning is currently playing a vital role in the next generation of the computer world [1]. In the machine learning, the computer intelligence expert models are trained by known datasets of the domain context. The communication between human and computer occurs in both directions. This communication should have two important features of speech technology, speech recognition and speech synthesis. It is known that human uses emotions frequently to convey the intended message. Therefore, it is expected that the machine should be able to understand and generate desired emotions [2][11]. Most of the existing speech systems can generate only neutral style speech. In this situation, the transformation of emotion is applied to convert the neutral style speech to desired expressive style speech. Speech recognition can be classified into speaker-independent and speaker-dependent recognition. The speaker-dependent system must be trained for the specific users. This system is most practical choice in several applications and automations since it is very accurate in recognizing the user's voice or speech and may be used to provide a security level for access to some systems through spoken password. Although, speaker-independent system is user independent. Speech recognition can also be classified into single-word recognition (or isolated-word recognition) and continuous speech recognition. The continuous-speech recognition is going to be the ultimate voice or speech interface for the users' applications but nowadays there are some problems such as pause required between the words (while speaking rate restrictions on the users) to determine the end-points or boundaries of individuals words. Pronunciation of a given word which is affected by the words and punctuation around it making the recognition are quite difficult and inaccurate. The solution for this is widely accepted, highly accurate isolated-word recognition technique, which can be used to recognize each individual's words or short phrase by adding a short pause of few milliseconds between each utterance. Training facilitates a learning system for creating an acoustic training dataset [6]. From this, the meaning of entire phrase or sentence can be determined. An isolated-word recognition treats the word as the unit of recognition. That is, in the library are for the entire words rather than for phonemes or other constituents. This paper provides descriptive details for the implementation of neural network-based speaker-independent isolated-word recognition for a robot. Speech recognition in this application is done by considering different features such as STE, ZCR, maximum amplitude and LPA. Initially, few selected spoken words are stored as template speech. These features are then input to the FFNN for training and testing for the recognition of spoken commands. When a spoken command is reuttered, it is recognized by the neural networks.

13.2. Literature Review:

The speech recognition would be complicated enough even if every speaker pronounced every word in an identical manner each time, it was spoken. Successful speech recognition is dependent upon many factors including the application, the task, speaker-dependence, size of vocabulary, speaker physical and emotional state, microphone quality, background noise, channel noise, details concerning language modeling, presence of confusable words in vocabulary, constraints imposed by the grammar and many others. The timing of utterance at recognition time will not be identical to that of during the training. These two utterances can have different duration. As a result, time-dependent features may fail to match because unknown and reference spoken words are out of phrase [12]. Despite the many sources of errors, it is possible to obtain an estimate of accuracy based on error rate measure. The solved problem on speech recognition is not simple due to both time dependence and information redundancy of the speech signal [3][9]. The detection of start and end points of an utterance is required in many of the speech recognition process to extract the speech data window (envelope of interest), which is noise-free. In the explicit methods, the analysis is done over the envelopes to estimate some features like short-time energy, zero crossing rate, etc. [4][5][7]. The function has been widely used for detection through short-time energy (STE). Once the detection function is obtained, it can be easily integrated in an adaptive threshold-based end-point detection system [10]. Optimum results were obtained in speech recognition when each envelope was divided into six frames and from each frame distinct parameters i.e., features were extracted [8]. These features were supplied as input to the neural network for the training. The new way of interaction with machines is speech recognition whereby one can give voice commands, which the machine understands and obeys.

13.3. Methodology:

In this study, a feedforward neural network with back propagation (FFNN-BP) model based automatic speech-controlled system for speaker independent isolated spoken word recognition with mapping functions has been developed. The classification is done using 5-layered FFNN architecture (see Figure 13.1). The classification step involves FFNN based mapping functions to classifying spoken words with multi-layered architectural framework of input, hidden and output layers by applying 10-fold matrix operation for training and testing datasets. These five layers (01 input layer, 03 hidden layers and 01 output layer) have 13, 20, 7, 20 and 13 neurons, respectively.

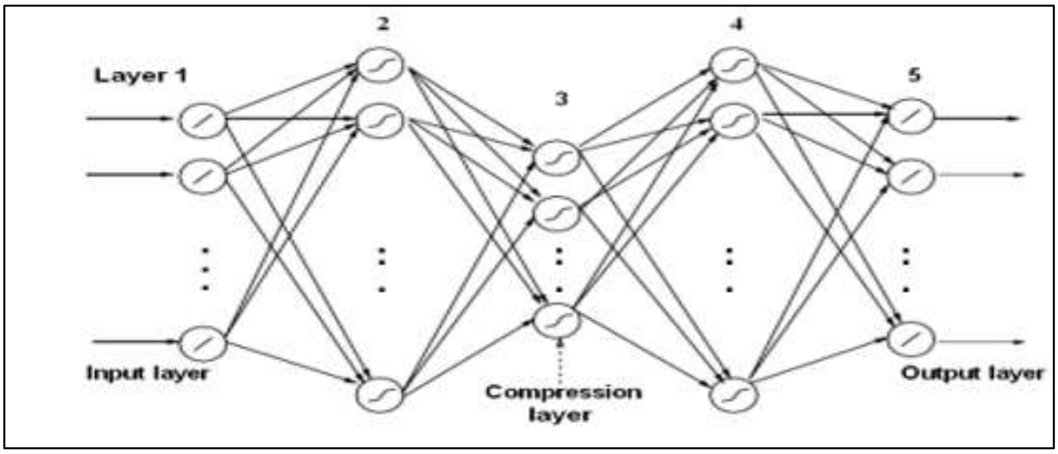

Figure 13.1: The Diagram 5 Layers Feed Forward Neural Network Model

In the proposed work, FFNN is used for recognition of eight different spoken commands. We have selected five sample utterances of six different speakers from the speech database collected from one male and one female speaker. For training & testing purpose, we have used 70 and 30 parallel utterances, respectively.

The multi-layered architecture incorporates the predicted prosodic parameters of target individual words into neutral speech, independent of the speakers, to produce the desired output. Subjective tests evaluate the perceptual quality of the transformed speech after inputted words or speech is included.

13.3.1. End Point Detection:

In speech signals the spacing between phonetic events will not be consistent. Words from different speakers of varying intensity flare up gradually to find the end-points of the energy signal. The start and end points exceed the minimum and maximum threshold values to identify the beginning of the word. The threshold value is obtained by calculating the normalized energy during the silence noise or background noise. The data in the speech lies between start point and end point i.e., speech envelope. This envelope is divided into small frames using a combination of STE, ZCR, maximum amplitude and LPA.

13.3.2. Sort Time Energy (STE):

STE is able to separate the speech segment that changes with every time slice from voiceless to voice. The energy value for the voiceless segment is much lower than voiced segment. The $\mathrm{E_n}$ allow us to distinguish between voice and unvoiced speech segments and locate approximately time of change between these two states. The mathematical calculation for STE is expressed as:

$$E_n = \sum_{m=-\infty}^{\infty} \mathrm{Y}^2(\mathrm{m}) * \mathrm{W}(\mathrm{n}-\mathrm{m})$$

where, $\mathrm{E_n}$ values allow us to distinguish between unvoiced and voice speech segments and locate approximately time of change between these two states, and $\mathrm{W}(\mathrm{n}-\mathrm{m})$ denotes finite length window.

13.3.3 Short Time Average Zero Crossing Rate (ZCR):

ZCR is involved in energy distribution with a strong correlation. A reasonable generalization is that if the short-time averages ZCR are high then the audio signal is not voiced, whereas if it is less, the audio signal is sounded. ZCR also help to characterize the fricatives or sibilants. It only requires a comparison of the signals of successive samples. The amplitude of the ZCR signal allows measurement of the number of times the signal crosses above zero by transition from positive direction to negative or vice versa. Here, rectangular window function employs to split the audio signal into temporal segments between the range of zero to positive direction or negative direction or vice versa. The mathematical calculation for zero crossing rate is expressed as:

$$Z = \sum_{i=1}^{\omega} \left(\frac{Sn(x_i) - Sn(x_{i-1})}{2} \right)$$

where $\mathrm{Sn}(\mathrm{x_n})$ denotes the sign of the $\mathrm{i^{th}}$ sample at the three possible values $+1, 0$ and -1.

13.3.4. Linear Predictive Coding (LPC) Analysis of Speech:

LPC is a most important measure and powerful pre-eminent technique of speech analysis for accurate and fast estimation of basic speech parameters. It is essentially a sequential formulation of problems related to speech wave modeling. One technique in linear predictive coding is auto-correlation method which is used in our application. A set of approximation coefficients is used to minimize the mean square error over a small segment of the waveform. A set of approximation coefficients is used to minimize the mean square error over a small segment $\mathrm{Y_n(m)}$ in the vicinity of sample n is uniformly 0 outside the interval 0 £ m £ $(\mathrm{N}-1)$, expressed as:

$$\mathrm{Y_n(m) = (Y_n(m+n) * w(m))}$$

Where, $\mathrm{w(m)}$ = finite length window in the interval 0 £ m £ $(\mathrm{N}-1)$.

The predictor function of $\mathrm{p^{th}}$ order is expressed as:

$$\mathrm{P(Z)} = \sum_{k=1}^{p} \mathrm{\mathring{a} * \ a_k * Z^{-k}}$$

The corresponding prediction error, $\mathrm{e_n(m)}$ for the $\mathrm{p^{th}}$ order predictor will be non-zero on the interval 0 £ m £ $(\mathrm{N}-1)+\mathrm{p}$. The average prediction error of STA is expressed as:

$$\mathcal{E}_\mathrm{n} = \sum_{m=1}^{N+p-1} \mathrm{e_n^2(m)} = \sum_{m=1}^{N+p-1} \left\{ \mathrm{Y_n(m)} - \sum_{k=1}^{p} \mathrm{a_k * Y_n(m-k)} \right\}^2$$

It can be shown that minimum mean square prediction error takes the form,

$$\mathcal{E}_\mathrm{n} = \mathrm{R_n(0)} - \sum_{k=0}^{p} \mathrm{a_k * R_n(k)}$$

Where, $\mathrm{R_n(k)} = \sum_{\mathrm{m=0}}^{\mathrm{N-1-k}} \mathrm{(Y_n(m) * Y_n(m+k))}$ is the auto-correlation value.

13.3.5 Mel Frequency Ceptral Coefficients (MFCC):

MFCC is an important measuring technique for time and frequency domain analysis of the audio signal processing which is divided into overlapping frames to calculate coefficients values. MFCC describes a Mel frequency cestrum that represents the short-time power spectrum of a signal. This spectrum is based on a linear cosine transform applied to a non-linear Mel frequency.

Let each frame have N number of samples and adjacent frames (multiplied by window) are separated by M number of samples, where M<N. The mathematical expression for the Hamming window is as follows:

$$\omega(n) = 0.5 - 0.4 * \cos(\frac{2\pi n}{N-1})$$

In MFCC, we use Fourier transform method to transform audio signal from time domain (TD) to the frequency domain (FD). Next, FD signal is converted to a matching frequency scale for appropriate perceptions and to find the final feature vector, $(p+1)+1+q+W+W$.

13.3.6. Feature Vector Classification and Recognition:

The recognition operation is divided into two phases, namely learning phase and classification phase. The weights in the neural network will be modified during the processing of learning phase. All weights are modified such that when a pattern is presented, the output is either the correct category or largest value.

The weight of the network remains constant in the classification phase. The input pattern will be transformed into layered network steps until it reaches the output layer. Finally, classification can be done by selecting the class associated with the output layer with the largest value or correct category. The classification phase is very fast phase than learning phase in term of fixed weights of the network and transformation from layer-to-layer iterations until correct and largest output value not achieved with back propagation architectures. The feature vectors consist of two elements, formant frequencies and mean ZCR of the file. The formant frequency is categorized with three elements, represented as F,

$$F = \{ff1, ff2, ff3, Z\}$$

13.4 Results & Discussions:

For implementing proposed FFNN-BP based soft computing system, we have considered MATLAB programming language. In this system, FFNN-BP is used for training and classification of isolated spoken words of eight spoken commands by the different speakers. In this proposed system, we used 5 sample utterances of 6 different users for each of 8 commands (240 speech sample files).

Optimum results were obtained when each speech envelope was divided into six frames and from each frame 7 parameters were extracted (4 pole LPC, ZCR, total energy and maximum amplitude features). The sets of total 42 parameters were given to neural network for 6 different users.

The neural network recognizes the commands and input features extracted from speech envelope. The model is tested with data validation for audio commands and has given fairly accurate results with the precise operations of the automated speech recognition system for the given instruction.

The entire process is evaluated by subjective tests after incorporating inputted words or speech. It uses confidence measures with mapping functions to detect and classify the spoken words by the subjective and objective evaluations.

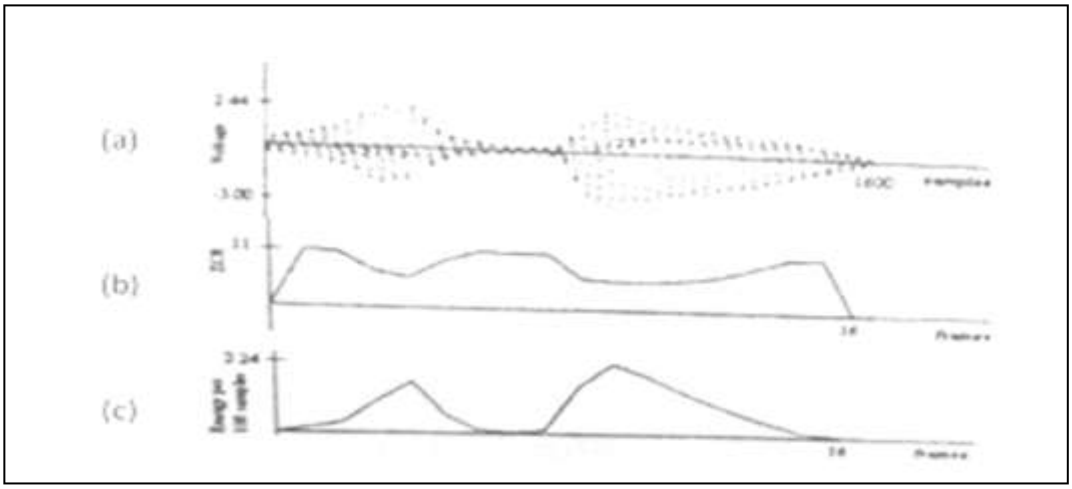

Figure 13.2: (a) Original Signal (b) ZCR of the Signal (c) Energy of the Signal

Figure 13.2 shows plots of number of samples of original signal versus amplitude, ZCR and energy of the signal. It can be seen that the energy contained in the silence period is small as compared to that in the utterance period. Also, the energy depends on the intensity of the utterance.

Figure 13.3 shows the training and testing plots for different features.

Figure 13.3(a) indicates the variation in the value of the first formant frequency ff1 for each of the four words uttered by the six speakers during the training phase while Figure 13.3(b) indicates the same for the other set of six speakers used for the testing phase.

Similarly, Figure 13.3(c) and Figure 13.3(d) shows the variations of the second formant frequency ff2. Figure 13.3(e) and Figure 13.3(f) shows the variations of the third formant frequency ff3, and Figure 13.3(g) and Figure 13.3(h) shows the variations of the mean ZCR during the training and testing phases respectively.

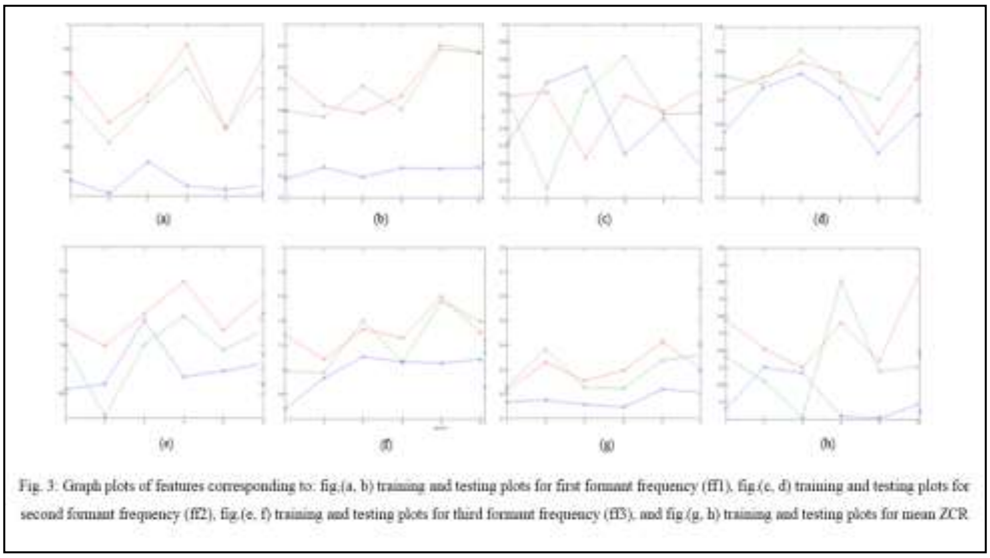

Figure 13.3: Graph plots of feature corresponding to: Figure (a, b) training and testing plot for first format frequency (ff1), Figure (c, d) training and testing laws for second format frequency (ff2), Finger (e, f) training and testing floor of current format frequency (ff3), and Figure (g, h) training and testing plot for mean ZCR.

Thus, energy has been set as a major criterion for the end-point detection. Zero crossing rate of an unvoiced signal is more compared with the zero-crossing rate of voiced signal. It is also observed that the zero crossing rates for different words are different. From the various signal interpolation with traversing data plotting, it has been deducted that the speech envelopes differ with various words and hence the number of samples vary from word-to-word, time-to-time and person-to-person. The overall average accuracy of the proposed model is achieved by 93.44% approximately. Finally, both subjective and objective tests reveal good and an increased accuracy with FFNN-BP based mapping methods.

13.5 Conclusions and Future scope:

Automatic speech recognition is a challenging task for spoken words of different speakers because human speech signals are highly variable due to different aspects such as, speaker attributes, spoken styles, uncertain noises, and many. The decisions for classifying infant cries are quite difficult. In this study, the performance of FFNN-BP model is accessed that classified and recognize the spoken words or commands of the different vocal tracts by applying machine learning algorithms.

In this system, FFNN-BP based automatic speech recognition tool provides fairly accurate results to understand the classification of spoken commands of different speakers on different vocal tract and emotions for isolated words transformation.

We have looked at different papers and noticed that different authors have also used different methodologies and provided different accuracy.

So, we can say that methodology and accuracy both are complementary to each other and if methodology is changed then accuracy will also change and the same conclusion we have obtained from different paper of study. In this work, the mapping function map the associations between spectral parameters of neutral and target isolated words by subjective and objective tests after incorporating inputted spoken words.

The system is tested for recognition and has given fairly accurate result with average recognition rate of 93.44% approximately. Both subjective and objective tests reveal effective results through FFNN-BP based mapping methods. Prosodic and spectral parameters contain complementary emotional information. Thus, the proposed model describes an automated system which is suited to an effective performance for speech signal recognition of isolated words independent of different speakers on different vocal tract by training and testing the spoken word or commands datasets. In the future work, both spectral and prosodic mappings will be performed together to improve the more performance of subjective and objective test evaluations by training and testing large datasets. Many other applications such as voice-controlled wheel chair, voice-interactive enquiry system for railway, bank and insurance sectors, etc. can be developed using similar approach.

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14. Influence of Advertising on Food Habits of Children-Reviewing the Existing Literature and Directions for Future Research Agenda

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Abstract:

Advertising is a method of communication that aims to induce a group of people and influence their behavior in relation to a commercial submission. The main purpose of advertising is to create awareness about a myriad of items to potential customers. In order to influence their dietary choices, food preferences, and eventually food purchasing behavior, marketing maestros today have targeted children and adolescents as potential clients. The goal of the article is to examine how advertising of food affects kids and their food preferences through a comprehensive review of various existing literature.

Keywords:

Consumer Behavior, Advertisement, Food Habit, Children

14.1 Introduction:

The English poet William Wordsworth once said, "Child is the father of man," meaning that children exhibit traits in infancy that foreshadow who they will become as adults. The quote above is well known among modern marketers. The marketer finds that the children's market has enormous potential. Children today are more evolved than in earlier centuries, which is entirely due to the impact of rapid technological advancement. The changes in the sociological and psychological evolution of mankind are primarily due to these technological advancements. Children have become strong consumers as a result of their accessibility to personal assistant devices.

Consumers who are well informed tend to be more satisfied, and satisfied consumers are more likely to remain loyal customers. When segmenting, marketers see the children's market as a very promising one. Children are seen as a superset of the influencers, buyers, and adult consumers who will purchase products in the future. The buyers are the children themselves as present buyers, the influencers are those who actively or inactively shape their parents' purchasing habits, and the future adult buyers are those who will be the prospective purchasers in the future. The "cradle to grave" techniques were created by marketers by evaluating the segment's potential. Even before they are born, children start to consume things. Even before they are born, children start to use a lot of items. They are exposed to many marketing tactics from the moment of their birth; when they are young, their parents are the ones who target them, but as they get older and understand what makes a good consumer, they begin to act independently. Children's cognitive growth has a stronger impact on their efficacy and efficiency as consumers.

14.2 Decoding the Diet Dilemma: Consumer Behavior for Children’s Food Habits

Consumer behavior research is not a recent development in the field of marketing research. However, studies of sociological factors, psychological aspects of the consumption process, and other outside influences on marketing activities began to gain importance in the middle of the 20th century. The marketing concept gained more significance in the field of marketing research in the 1950s. More thorough investigation of the consumer decision-making process resulted from the philosophy of fully satisfying customer demands and achieving their satisfaction. Consumer behavior studies from the past offer a solid conceptual foundation for conducting research in the details of pertinent processes and functions. The conceptual frameworks for consumer behavior in marketing management allowed researchers to comprehend consumer behavior patterns that are based on consumer socialization. Marketers recently showed a greater interest in consumer habits, brand loyalty, and how children are learning to make purchases.

Table 14.1: Children's Five-Stage Shopping Learning Process in Their Consumer Development (Mcneal & Yeh, 1993).

Sr. No.	Stage	Shopping learning Process
Stage 1	Observing	• Child’s preliminary interaction with the marketplace. • Children accompany their parents to shopping malls. • Consumer socialization starts at the perceptual stage (36 months – 7 years).
Stage 2	Making requests	• Children make requests to parents when they see something they want in the store. • Make requests for specific products at home, probably because of the stimulation by television advertisements.

Sr. No.	Stage	Shopping learning Process
Stage 3	Making Selections	• Children experience their first physical contact as consumers by choosing an article and taking it from the shelf.
Stage 4	Assisted Purchases	• Scenes give meaning to the money children receive from their parents or grandparents. • Children start spending money on their own. • Contributes to the child's understanding that the store owns the goods and money is the medium of exchange.
Stage 5	Making Independent Purchases	• Performing independent purchases without parental assistance (John's reflective stage, 11-16 years). • Significant time lag between a child's first purchase with parents and an independent purchase.

Children's consumer socialization occurs in stages and an array of socializing factors, including peer group, media, and family influences it. Advertising and food packaging information are two examples of media that are useful for consumer socialization. The use of the internet, television and other forms of mass communication as consumer socializing tools has also been quite successful. It is possible that the unavailability systematic research on consumer behavior of children, particularly the influence or function of specific factors (such as family member, sellers, and the educational institutes), can be attributed to marketers' possible perception that it is wrong to see children as a "market".

14.3 Literature Review:

Around the world children's diet has been a problem not only for the parents but for the marketers as well. Several studies have been conducted on this topic to churn out the proper knowledge on this matter and for the purpose of present research, the following studies have been analyzed and the essence presented as hereunder.

According to a content analysis by Lewis and Hill (1998) in their article "Food advertising on British children's television: A content analysis and experimental study with nine-year-olds", opined that food is the product category that receives the most advertising on children's television. Confectionery, junk and fast foods receive the most attention. Therefore, 60% of food advertisements targeted at kids are for processed foods, 6% are for junk food restaurants, and the remaining 40% are for breakfast cereals and candy. In addition, they discovered an interaction effect: whereas children of average weight feel less healthy and crave sweets after viewing food advertisements, overweight children do the opposite. After seeing non-food advertisements, the opposite tendency was noticed. Stratton & Bromley (1999) in their study with the title "Families Accounts of the Causal Processes in Food Choice", found that the main concern of parents is making sure their kids are eating enough. Parents make an effort to adjust their food to the family's preferences in order to get kids to eat.

When discussing the eating habits of children in a survey in Britain, there was a conspicuous absence of references to nutrition and health. Numerous studies have been conducted to identify the reasons that affect kids' food habits, and schools and classmates also have a role in shaping their tastes and routines.

Pecheaux and Derbaix (2002) in their study "Children's Reactions to Advertising Communication." investigated a significant number of advertisements focused at children, the most impressionable demographic in any community. Children were viewed as a market category that was not only appealing but also important due to their impact on other family members' shopping preferences, especially for food.

Hastings et al. (2003), opined in their study "Review of research on the effects of food promotion to children", the foods that we should consume the most are the ones that receive the least amount of advertising. In the year 2004, a poll was conducted in the United Kingdom for the national family and parenting institute, parents felt that their kids are being dominated with advertisements aimed at ever-younger kids across an increasing number of social media sites.They claim to be stressed, agitated, and concerned, especially in light of the numerous interpersonal disputes they allege that consumer expectations from kids produce inside the family.

Young (2003) with his study "Advertising and Food Choice in Children: A Review of the Literature" came to the conclusion that youngsters begin to grasp advertising between the ages of eight and nine and that they actively participate in their families' food purchases. Children's dietary choices are said to be determined by the age of five before they can comprehend advertising. The author continues by stating that there are numerous factors that influence eating habits, among which viewing the television or commercials is just one.

Helen Dixon, et al. (2007) examined the relationship between children's frequent television viewing and attitudes about food in their study "The Effects of Television Advertisements for Junk Food Versus Nutritious Food on Children's Food Attitudes and Preferences". They also attempted to assess the impact of various television commercials for healthy and harmful foods on children's understanding of their diets, attitudes, and intentions and opined that it is easy to influence their dietary habits through consistent advertising in television.

Matthews (2007) investigated how channels and promotional tactics in the marketing of food to children affected sales in the study "Children and obesity: a pan-European project examining the role of food marketing'". Children's culture was linked by referencing kid's movies and their protagonists, including games and fictional elements.

These and other inventive strategies were found to be used by food advertisers to target children in the UK and other nations. In addition to this, a lot of businesses featured cartoon characters or celebrities in their ads to entice kids. However, it was discovered that television being the main promotional medium mostly promoted unhealthy junk food instead of healthy foods. Powell et al. (2007), observed in their study "Exposure to Food Advertising on Television Among US Children" that television advertising in Singapore likewise makes extensive use of this method, with one campaign even going so far as to provide a complimentary soft drink with the purchase of uncooked rice.

In addition to clouding children's perceptions of healthy and harmful diets, these adverts constantly cause them to link rice with soft beverages. It is also observed that toys are used in several commercials to sell unhealthy food.

Khanna (2012) in his study "Children's attitude towards television advertisements and their impact on family purchase decisions" compared the attitudes of children in rural and urban areas regarding television commercials and their influence on family purchasing decisions. Data were gathered through interviews and questionnaires from a sample of 480 parents and kids. It was determined that television viewing was more common in cities than in rural regions. Urban parents cited friends, stores, and the internet as significant information sources, and parents in rural areas cited television as their primary source of information. According to the report, parents are concerned about food commercials and think that they mislead them into thinking that kids get obese.

Rathod R. M. & Par mar B.J. (2012) in their study on chocolate brands "Impact of Television Advertisements on Children: An Empirical Study with Reference to Chocolate Brands" discovered that kids don't think about price when they desire to buy the marketed foods. Additionally, they do not take into account if it is good or bad for them. The purchasing of the merchandise is the only thought they have and advertisements affect younger children the most.

Pettigrew et al. (2013) investigated in their study "The effects of television and Internet food advertising on parents and children" looked into how children's food choices were impacted by their understanding of nutrition. Focus groups, experiments, and surveys were used to gather data, which was then evaluated using ANOVA and structural equation modelling (SEM). The study found a correlation between children's repeated eating of unhealthy foods and increased societal norms around fast food, diminished parental nutritional understanding, less frequent food-related conversations with their parents, and exposure to food advertising. As a result, frequent eating of unhealthy foods by youngsters was linked to increased weight.

Sharma (2014) in his study "Influence of Children on Family Purchase Decisions in Urban India: An Exploratory Study" investigated the value of family communication and brand knowledge while taking into account how much impact kids have on purchasing decisions. 229 mother-and-child couples made up the sample. The study was carried out in Pune. It was discovered that a child's position is not one of a student but rather one of a teacher, depending on the family's demographics and communication patterns. Brand recognition is a crucial factor in influencing a youngster with the help of constant advertising, especially in the food sector.

Ussaima (2015) examined the impact of television ads and their function in raising children's product awareness in the study "Influence of television advertisements on children and their buying behavior a study". 354 kids and 250 parents were randomly selected from the city of Madurai. Ads were shown to be the second most important source of product awareness after schoolmates and parents, and 14% of kids immediately requested purchases after seeing ads. Children asked their parents for purchases in proportions of 45.48% to father, 44.35% to mother, 7.6% to grandparents, and 2.5% to siblings.

14.4 Further Scope of Study:

Nowadays it is observed that children are being targeted in the food and beverage industry. The marketing of food to children is therefore inevitable, and they are exposed to unprecedented levels of advertising, and consumerism via an array of media. Numerous studies have found links between the amount of time spent watching television and children's obesity rates. Many child advocates and media professionals believe that because marketing to children and adolescents has grown so pervasive, there is a growing public health concern. One might contend that young children in particular are a sensitive group that needs to be protected from commercials that might be harmful to their health. Further studies can be done on the other factors apart from advertisements which influence children for their consumption habits.

Reviewing the existing literature, it can be said that further exploration of the topic can be done on the basis of age in children specifically any comparative study between children, adolescents and teenagers. Limited studies have been conducted in India, therefore a comparative study between urban and rural populations will also be fruitful. Nowadays internet plays a pivotal role in children decision making process, therefore advertisements provided on the internet can also be taken into account for the purpose of the holistic study on this topic.

Therefore, we can infer ample scope for investigation exists in the abovementioned areas and future research can be undertaken to fill in those research gaps which will contribute to the development of the current field of study and significantly enrich the reservoir of existing knowledge.

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15. Study on the Improvement of Human Resources in the Information Realm

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Abstract:

Today because of the digital revolution whole world is running behind it. It is the need of the hour to use different digital techniques which may be symbolized with big data, cloud computing, artificial intelligence etc. To remain competitive in this world almost all enterprises are trying to hold new business environment through electronic conversion.

Because of this digital revolution the business models need to be modified as a result human resource department which is considered as one of the vital functional partners also making it more presentable by adapting and developing digital and standardized operational environment.

The paper gives an overview about the requirement, meaning and also problems that will be faced to make digital and standardized conversion of human resource from various perspectives and to try to frame some feasible solutions and suggestions.

Keywords:

HRM, Electronic conversion

15.1 Introduction:

Human resource management is an integral aspect of running a successful company and ensuring its continued success in the future. Recently developing digital technologies namely big data, cloud computing, artificial intelligence etc., have presented fresh challenges to the conventional approach to HRM.

It's become a common issue for businesses to wonder how they can establish a modern HRM model, which requires combining the ideas of digitization and standardisation with HRM, and how HR departments will find the best way to implement reform, alter the conventional business model, optimise the operational framework, and build a digital workplace.

To that end, this paper has investigated challenges and proposed solutions in the hope of resolving all clashes and problems in the process of digitalizing and standardising present HRM. If successful, this endeavour will raise the bar for corporate management and significantly boost the economic growth of the country.

15.2. Concerns and Challenges Associated with HR System Changes in the Context of Electronic Conversion:

Some aspects of modern HRM include the need to accommodate a wider variety of organisational structures, a greater involvement of upper-level management in day-to-day operations, a greater mobility of top talent within and between organisations, and greater emphasis on the availability and accessibility of personnel data. That's why it's crucial for businesses to adopt a powerful HRM model that will help them better connect HR data, use scientific management tools fairly, standardise HR processes, and contribute effectively to their growth plan (Mayhew, 2012; Xin,2011). To this day, the vast majority of companies have successfully adopted informational reforms such as office automation, web-based services for managing financial funds, long-distance services for managing projects, and so on, and have made progress toward group company centralization. Nevertheless, HRM's information building lags significantly behind that of other components due to the company's complicated people structure, mandated policy of HRM work, and the variety of the professional talents of HR practitioners. The following factors have contributed to the present reform of HRM digitization and standardization's difficulties.

15.2.1 Positioning Deviance:

Longstanding issues with "focused on production, while disregarding management" inside businesses have not been addressed, leaving organisations vulnerable to inactive mechanisms and subpar management practises. These issues have become an internal element that limits the expansion of businesses, despite the fact that their size is growing and their economic gain is not. While the real purpose of HRM is to methodically gather, gather, and analyse the human resource information through management against the historical backdrop of big data, and to deeply act on strategic direction planning of human resources, optimization of organisational structural construction, the current positioning of HRM system digitization at a few companies is still partial to the electronization of recent business work., and the lean completion of tasks.

Human resource management consists of the real contents of methodically collecting, gathering, and analysing human resource information against the historical background of big data. In spite of the fact that one of the functions of HRM is to manage and analyse data pertaining to human resources in connection with a project, this purposeful role is rarely carried out. Despite the fact that HRM's stated "Systematically gather, compile, and analyse the human resource information through management" is the intended outcome against the core function of HRM is to collect, collate, and analyse data related to human resources for the benefit of management, HRM is often misunderstood. The HR database we utilise now lacks essential supporting data due to its unclear location. Companies may act secretly due to the system's poor analytical capabilities [3] since it just functions as HRM operational software and does not interface with the "finance information and production management system" that is closely related. Human resource information systems are abandoned by senior management because different layers of management cannot use the same system to oversee administrative tasks, manufacturing, or human resources [4]. While progress is being made in the area of information building, top executives still engage in inefficient, time-consuming, and costly offline work flows.

15.2.2 Poor Combination:

Decentralized internal system, weak horizontal integration, and sluggish longitudinal connectivity are all issues with the standard model of management and information technology [5]. As a result, the "forlorn island" and "vent" in the company's present digital information system adversely impact their attempts to maintain consistent management. Ineffective data, a lack of comprehensive data planning, and an inability to integrate into a comprehensive management information platform are all results of a business system that is in disarray. Due to the separation of personnel planning and actual production, annual budget and financial management, and human resources and other business systems, it is difficult to realise the sharing of information because of the independent, fragmented, and segmentary relationships that exist between businesses or even different parts of the same business. This makes it even more difficult to realise the sharing of information. It's tough for all levels of management to be abreast of the latest developments in the basic units' human resource situations.

In addition, it lacks the information and business procedures necessary at both the team and enterprise levels as well as effective integration of basic data and a lower standardisation level [6]. As a result, information coding is not standardised under a single definition, making it hard to comprehend the interplay and complementarity of various sets of information. Additionally, the poor portability of certain outstanding subsystems is a direct effect of the low availability and integration, it, in turn, hinders the integration and promotion of business as well as the effective support of company-level business analysis [7].

15.2.3 Standardization on a Lower Level of Both the Data and the Business Process:

The difficulty with the conventional HRM model is that it doesn't consider the nuances of the manufacturing process, the value that employees provide to a business, or the challenges of controlling the labour costs that are directly attributable to those employees, so it focuses primarily on the management and control of specific businesses. This scarcity cost cannot be sensibly allocated to the control centre of the company's overall cost, making the standard HRM model inadequate for the task. Information used in management seldom changes. Because it can't do analysis, doesn't help with making decisions, and can't be managed or controlled well, the traditional model places a greater emphasis on past experience in the decision-making process and places more weight on the competence of individual managers in the face of greater uncertainty [8].

The system lacks the group and company-level data, as well as the operating standard and standard business flow, and has a lower standardisation level for its data. As a result, information coding is not standardised under a single definition, making it hard to comprehend the interplay and complementarity of various sets of information.

Also, the poor portability of certain outstanding subsystems is a direct effect of the low availability and integration, it hinders either business development and integration or effective company-level business analysis help.

15.3 Importance of the Human Resources "(HR) Standardization Reform in the Process of Electronic conversion":

The emergence of digital technology is now crucial to the development of company. Human resources traditionally used progressive optimization, which included looking at historical patterns to make adjustments for the future. However, because of the digital revolution, the whole business model has shifted, and HR is now equipped to swiftly carry out innovation and exploration thanks to its access to an endless imaginative space.

Human resources need to approach the future of exploration by looking at system innovation from two fundamental disciplines' perspectives. Value creation the first one, which indicates that HR initiatives should lead to increased profits for the business, and the second is effectiveness improvement, which refers to whether or not the HR initiatives have a positive impact on the company's bottom line.

One definition of a "human resources digital management information platform" is "a set of centralised information systems that can organically connect with information technology to realise personnel's full life cycle management." This definition covers everything from the approval of the onboarding process all the way through the management of daily personnel and salary dispatching. The business process can be regular and standardised if roles and responsibilities are made clear, and Internal controls, internal business procedures, and warning can be realised with the aid of flexible and powerful workflow technology. This provides the foundation for the efficient control of various management levels, limits arbitrary decisions, and strengthens the internal control the company. simultaneously, changing the mindset, values, and routines of employees may free them from tedious tasks in favour of more creative ones, boost productivity, lead to more well-informed business decisions, and boost overall company effectiveness.

15.3.1 The relentless march of business toward a more modern, information-based model of operation is unstoppable:

A lack of management and a shaky internal management and business structure were prevalent issues for organisations that used monopolistic management in their formative years. Companies face a significant challenge and are compelled to undergo a management model transformation as a result of the introduction of cutting-edge management ideas, methodologies, and techniques made possible by the opening of markets after participation the WTO. The criteria that are put on the institution's supervision, the pay process, and the health of the company's management and personnel have increased in conjunction with the company's growth [10]. To assure the company's breakthrough development, it is now crucial for businesses to further expand the function and application range of information systems. Real-time data support information system is necessary that is integrated, inside the regional scale, to direct the business operation. This is because the information system is required to be able to guide the business operation. On the one hand, implementing a digital human resource management information platform will speed up the enterprise's informatization construction; on the other, it will allow the business to set up an information platform that links its internal data with external sources so that it can respond to market fluctuations with precision.

15.3.2 Important for the Government to Continue Business Reforms:

In today's information culture, the old management paradigm has become outmoded as a result of the rapid speed at which the state is expanding the business reform. Information has evolved into the sixth type of energy.

In addition, an increasing number of businesses, both domestically and internationally, are turning to the gathering of computerised information as their secret weapon in their quest for higher levels of labour productivity, increased levels of efficiency, and the ability to seize opportunities in the market.

As the HR digital information system is able to effectively monitor and analyse the flow status of HR both within and outside the organisation, it is possible to exercise stringent control over the medium- and long-term budget for the HR department and to receive early warning of the issue of contract violation. In this way, it can affect how managers at various levels think about their organisations' working conditions, leading to a radical shift in management practise, a significant increase in the efficiency with which companies can manage and control their operations, and a significant expansion of the scope of enterprise reform.

15.3.3 Enhancing Management of Emergencies at Businesses While Cutting Operating Expenses:

By bringing together all aspects of HR's internal and external operations, the HR digital management information platform increases data reliability and makes simultaneous logistical, capital, and information flows a reality. Because everything is stored in one location, the system has the potential to make on-demand manufacturing and cooperative production work a reality.

It can also increase efficiency, integrate resources, significantly reduce waste, and lessen the impact of operational crises. Additionally, HRM, pay management, reporting and statistics, and talent development and management may all benefit from the integration, modernization, standardisation, and automation made possible by real-time data analysis. Furthermore, real-time data analysis has made it possible for businesses to successfully use the ever-increasing amounts of data at their disposal to anticipate, prepare for, and recover from economic downturns.

15.3.4 Rationalizing Workflows and Developing a More Proactive Approach to Management:

A digital management information platform for human resources is required in order to complete some pressing tasks, include novel approaches to information application and informatization management, as well as improvements to the paradigm for entrepreneurial management. This type of platform should be able to combine inventive management facts with management process, as well as internal resources and external environmental information.

This platform combines and optimises the business process and corporate resource allocation based on the real situation, in addition to this; it is a violation of the well-established management paradigm, which is all helpful in providing an information management system that is integrated, effective, and highly efficient.

There will be less unnecessary back-and-forth because of the more sensible business approach. The HR digital management information platform helps to increase management efficiency by reducing the likelihood of low-level errors caused by humans when it is conducting flow control and data verification.

As a result, the importance of continuing the HR digitalization and standardisation reform has been brought to light; this will be the future path of contemporary HRM.

15.4 Advice for HR Standardization Change in the Age of Electronic conversion:

When it comes to human resources, the rate of adaptation and transformation will increase dramatically as a result of the standardisation and digitalization reform. The creation of a administration replica and design system outline to standardise the essential business process stands on real business condition and evaluations of processes is an effective method for increasing a company's total competitive forces and fostering sustainable development.

This is accomplished through one of the most efficient methods available. By ensuring the modularization, standardisation, and functionization of the system creation, it is possible to simultaneously streamline the HRM business operational process, develop a multi-operating platform in a timely manner, and solve all of the problems that exist within the HRM system.

15.4.1 Leadership and Staffing Decisions to be Made Accurately:

Management at all levels must pay close attention to the HRM digitization and standardisation reform, define who on their team is in charge of the initiative, and work together to ensure the success of the initiative. To ensure that the project is constructed in accordance with the unified progress that is being made at the headquarters, the HR managers at each level of the organisation need to ensure that there is effective cooperation and organisation throughout the entire process.

Additionally, they need to provide a guarantee from aspects such as legal compliance and data security.It is also important to put effort into ensuring the system runs smoothly after it has been implemented, to build a strong HR IT team, to develop a realistic strategy for bringing in new employees, to encourage the growth of individuals with expertise in both business and technology, and to train and develop a cadre of HR informatization experts.

When promoting a project at any level, it is essential to provide sufficient training time and excellent training outcomes by ensuring that the whole team and different types of users are trained.

15.4.2 Functional Positioning in System Modularization: An Issue That Must Be Correctly Resolved:

Whether or whether the HRM information system is effectively implemented relies heavily on its sensible functional placement. Rather than being developed in a vacuum, HR digitization and standardisation reform should be grounded in the current state of the company, take into account the main conflict, and zero in on the most important aspect of management and control. Complexity can be minimised by adhering to the principles of comprehensive planning and methodical implementation, segmenting the application system based on the strength of the connection between connected functional modules and the business relevance, integrating related and similar systems, and actualizing the function of one or occasionally multiple of the basic functional modules like organisation management, personnel management, and salary management. All of these factors contribute to reducing the complexity. The central office must oversee the HRM digitalization and standardization reform, ensuring that all aspects of system planning and marketing are kept under one roof. The solution enables you to improve the level of service provided by workers at all levels, as well as the professional quality of those employees, change the work patterns now followed by employees, and shift employees' focus from operational decision making to strategic decision making.

In addition, enhance working efficiency and data and information quality by selecting an appropriate business process in the system in light of the current circumstances, allowing the basic unit to get more deeply engaged with the aid of reasonable and standardised operations.

15.4.3 How to Fix Standardization Issues the Right Way:

Conflicts between individual preferences on how to get things done and the need for uniformity in the workplace are an inevitable by-product of the wide range of tasks involved in human resource management. As a result, it is crucial to establish a standard that is constant, as this will provide a stable basis for future data analytics and analysis. The HRM digitization and standardisation reform is comprised of several steps. An in-depth analysis of the HR industry's distinctive characteristics will be performed in order to determine the requirements of the HR business.

This will be followed by the identification and isolating of relevant professional indicators, the clarification of indicator properties such as name, definition, calculation formula, statistical calibre, dimension, and metric, and finally the classification of indicators and the formation of classified documents. Standards for information coding, information management, and information technology should serve as the pillars of any successful endeavour to standardise. The standards for management code cover a wide variety of subjects. These subjects range from the rules, methods, and technology used to generate the code to the standardisation of fundamental and professional words, structured data, data transfer, and interconnects, as well as a number of other topics. Information technology standards also include the standardisation of business processes, management processes, maintenance processes, and an external reporting template used by the related industry and the company.

Both the hard data criteria and the more abstract process requirement are part of the standard. The hard data criteria stipulate that in the event of a difference between standards, the highest standard will be used, and that the system will only allow for a single unified information code to be used. Future integration with platforms for finance management and control and production management and control is aided by the use of the unified standard. In order to maintain the vitality, stability, and scalability, as well as the consistency of the hard data standard, it is important to have a strong footing in the present while keeping an eye on the future. If businesses want to fully realise the unification of process and standard, among other things, ad hoc meetings need to be held, the unified standard level needs to be maintained, the work process of "establishment-using-feedback-maintenance-upgrading" needs to be established and improved, the standardisation ideas need to be integrated into daily work, the common value concepts need to be provided, and a unified code of conduct for professional personnel needs to be established.

15.4.4 Optimization of Real-World Systems, Correctly Addressed:

In addition to being the most common complaints from actual users, a lack of user-friendliness in the system's operating interface and a lack of polish in the statement-forming and inquiry processes are the primary issues that limit the system's actual usability in real-world business settings. In addition, the HRM information system in the company's branches and subsidiaries will have a large number of users and general system data, therefore a group has been formed to thoroughly investigate and appropriately address the issues of system optimization to guarantee the system's operating efficiency.

Integrating data organically inside a system, resolving the issue of data interaction, and optimising the distribution of diverse information resources have all been achieved via the development of a single, comprehensive solution, which has been fully shown and rationally designed.

15.5 Conclusion:

It is necessary to adhere to the overarching “a method of coordinated planning, high-level design, gradual implementation, and ongoing improvement” in order to completely improve HRM quality and accomplish the ultimate goal of HRM digitization and standardisation. This involves highlighting the value of relevant business, refining the procedure, and eliminating “the individual Information Island through business integration”. In addition, we need to converge on a standardised "weighting system" for management, make high-level resource sharing a reality, and progressively broaden the scope of applications in order to achieve our ultimate goal.

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