

AN EMPIRICAL STUDY ON THE IMPACT OF FORENSIC ACCOUNTING IN CORPORATE SECTOR AND ITS EXPONENTIAL GROWTH*

BY

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Abstract

Corporate Fraud is a big business in its own way and one of the major challenges for all the size of business, its consequence is not only to the corporations but for the society as a whole, addressing the same is so vital and need immediate attention. Financial frauds and scams in modern organizations are perennial and affected diverse organizations irrespective of its size, nature and type. It includes manipulation of records or accounts, theft and embezzlement, diversion of funds, corruption, etc. As per the Indian Fraud Survey Edition I, it was found that organizations mainly faced three types of frauds in the majority, diversion and theft of funds or goods was on top, then bribery/corruption, and last but not the least was regulatory non-compliance. So, theft & embezzlement, diversion of funds were the top two financial frauds according to the survey. An increase in these frauds made existing or traditional systems of accounting & auditing inefficient and ineffective in the detection and prevention of frauds. So, here a more sophisticated and specialized approach termed as Forensic Accounting requires that is used both for the prevention and detection of financial frauds. This study proposes to identify the effectiveness of forensic accounting as a tool to mitigate corporate fraud and to evaluate forensic accounting for an effective internal control system and to suggest forensic accounting for delivering quality financial reports and effective mechanism to reduce the fraud instance.

Key words: Forensic Accounting, Financial Crimes, Corporate Frauds, Fraud Management.

Received 07July 2021, Accepted 28July 2021, Published 16August 2021

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Introduction

Detecting fraud or white collar crime was assumed to be part of the traditional accounting role until recently. Internal and external auditors were required to keep an eye out for fraud throughout their regular audits. Auditors can only examine for compliance with generally accepted accounting principles, auditing standards, and business rules in a company's records. As a result, a new accounting category was required to detect fraud in businesses that suspected fraudulent transactions. Forensic accounting is the name given to this branch of accounting. During ancient India, Kautilya was the first to mention the renowned forty ways of embezzlement in his book Arthashastra. He was the first economist to publicly acknowledge the value of forensic accountants. Similarly, during King Akbar's reign, Birbal was the Scholar. To investigate various crimes, he used a variety of methods. Some of

his anecdotes provide the fraud examiner with a quick overview of the Litmus test for investigation. The specialty practise area of accounting known as forensic accounting describes engagements that arise from existing or expected conflicts or litigation.

Forensic accountants must work to a standard of quality and prospective conclusion that is "appropriate for use in court. "The forensic engagement is differentiated by its goal, the emphasis on acquiring evidence, and the use of a range of methodologies, many of which are custom-developed to meet the given engagement's needs. Expert testimony from forensic accountants is frequently required at the end of the case. Forensic accountants must be familiar with business information and financial reporting systems, accounting and auditing standards and procedures, evidence collection and investigative strategies, and litigation processes and procedures in order to perform their duties. Forensic accountants are progressively taking on more proactive risk reduction tasks by developing and implementing expanded processes as part of statutory audits, serving as consultants to audit committees, and assisting with investment analyst research.

Background of the study

Many medium-sized and boutique accounting companies, as well as bigger accounting firms, have forensic accounting sections. There may be sub-specializations within these groups: for example, certain forensic accountants may focus on insurance claims, personal injury claims, fraud detection, construction, or royalty audits. According to Accounting Today's data, nearly 40% of the top 100 US accounting firms are expanding their forensic and fraud services.

If this data is representative of the Indian situation, the day will not be far off when forensic accounting will account for a major portion of the total revenue of Indian accounting companies. In short, in the current climate of rising companies and escalating fraud and litigation cases, these services are in high demand and are being supplied at a premium.

The gathering of evidence in a criminal prosecution and the calculation of asset values in a divorce action are two examples of forensic accounting goals. Damages caused as a result of an auditor's negligence are analysed, as well as fact-finding to determine whether an embezzlement took place, how much it cost, and whether criminal charges should be made, among other things. The major goal of forensic accounting is to explain (cause and effect) events introduced into an accounting system area, including the detection (if any) of fraud and its consequences. Objective verification is the principal strategy used by forensic accountants. As a result, forensic accountants are taught to see beyond the statistics and deal with the situation's commercial realities.

The chances for forensic accountants are rapidly expanding. The collapse of the Enron Corporation and the twin towers of the World Trade Center have created a plethora of job prospects for American forensic accountants. The founding of the Serious Fraud Investigation Office (SFIO) in India, on the other hand, represents a watershed moment for forensic accountants. Increasing cybercrime, regulators' failure to detect security frauds, and a sequence of cooperative banks collapsing—all point to the need for forensic accounting, whether we recognise it or not. In the Indian context, forensic accountants are in high demand due to the rising number of frauds. The nature of forensic practise will be demanded by an increasing number of regulatory and administrative agencies.

Review of the literature

Detecting fraud or white collar crime was thought to be part of the standard accounting profession until recently. Throughout their regular audits, internal and external auditors were supposed to keep a

watch out for fraud. As a result, in organisations that suspect fraudulent transactions, a new accounting category is necessary to detect fraud. The term "forensic accounting" refers to this area of accounting. This research examines the definition, significance, and scope of forensic accounting. The demand for forensic accounting, as well as interest in it, is projected to continue to rise. This research proves it. Accounting students, the corporate community, the accounting profession, and accounting programmes all observed that forensic accounting education as important and valuable. (An Investigative Approach of Accounting (Mazumder, MehadiMasud, 2011).

The principles of fraud auditing and forensic accounting are the subject of another study. 'Ninety percent of fraud cases are discovered by mistake,' it says, implying that auditors may need to brush up on fraud's features and characteristics. Fraud Auditing and Forensic Accounting are based on this principl. (Bukics, Rose Marie L. The Internal Auditor 53. 3 (Jun 1996).

The authors define forensic accounting as "the application of accounting for legal objectives" in this paper. The Field and Practice of Forensic Accounting" (Chapters 1 and 2) present an overview and definition of forensic accounting as it has evolved, as well as a comparison and contrast of forensic accounting and fraud auditing. (Forensic and Investigative Accounting, Fifth Edition by D. Larry Crumbley, Lester E. Heitger, and G. Stevenson Smith)

This article says that , forensic accountants are needed for a variety of reasons, including probing fraud and looking into the books and records of a shareholder. Many companies have forensic accounting departments. Within these categories, there may be sub-specializations such as insurance and personal injury claims, fraud, construction, or other types of audits. Forensic technologists use a range of technologies to search computer networks and hard drives for files containing key phrases in order to preserve, investigate, and analyse electronic document and data files. (Forensic Accounting: Exponential Growth Stimpson, Jeff. (Feb 2007)

This article says that, forensic accounting, which deals with the relationship and application of financial data to legal difficulties, was a booming sector in the 1990s. In addition to investigating fraud, forensic accountants perform a range of specialised responsibilities, such as acting as expert witnesses, investigating patent infringement, violation of trust and fiduciary obligation, and so on. (Forensic accounting: The Management Accounting Magazine- Inkster, Norman(Apr 1996).

Companies, large and small, privately held or publicly traded, are all potential targets for persons who commit vocational fraud, according to this article. Neither government agency nor non-profit organisations are exempt. (Fraud investigators, Forensic accountants expect services may be more in demand in wake of corporate scandals McFadden, JoAnne. Business Review(Jan 10, 2003).

As per the study, an audit is designed to find significant deviations from standards and confirm that acceptable accounting and auditing practises were used in the preparation of financial statements, whereas forensic accounting examines a company's books with a more proactive, sceptical approach. (Forensic accounting: A new growth area in accounting - Crumbley, D Larry, Apostolou, Nicholas, Ohio CPA Journal (Jul-Sep 2002).

Another article reveals that forensic accounting was introduced in China due to the following reasons-

- The most important cause of forensic accounting is the dissemination of erroneous accounting information.
- The degree to which laws and accounting can effectively handle the situation is limited by their constraints.

Traditional auditing has a number of flaws. (Analysis of the Necessity to Develop the Forensic Accounting in China - Hao, Xianghua. International Journal of Business and Management (May 2010)

This book illustrates how catastrophic company failures have led some to question the audit's value, with many calling for auditors to take on more fraud detection duty. This book contains new material on the newest PCAOB Auditing Standards, the Foreign Corrupt Practices Act, and options fraud, as well as fraud in China and its ramifications, for forensic accounting specialists—experts in detecting fraud. (Research and Markets: A Guide to Forensic Accounting Investigation Business Wire [New York] 03 Sep 2012).

This article reveals that, forensic accountants are increasingly being sought to assist in the examination of financial and business-related matters. Professionals in forensic accounting are increasingly being called upon to aid in the examination of financial and business-related matters. (FORENSIC ACCOUNTING DEMYSTIFIED Kushniroff, Mindy. GSTF Business Review (GBR) (Apr 2012)

The areas of litigation support services, fraud detection, and acting as an expert witness, usually referred to as "forensic accounting," have garnered considerable attention, according to this article. Forensic accounting procedures should be improved further due to rising demand, diversity, and financial benefits. (Forensic Accounting: Challenges and Opportunities Rezaee, Zabihollah, Lander, Gerald H, Reinstein, Alan, Ohio CPA Journal (Oct 1992).

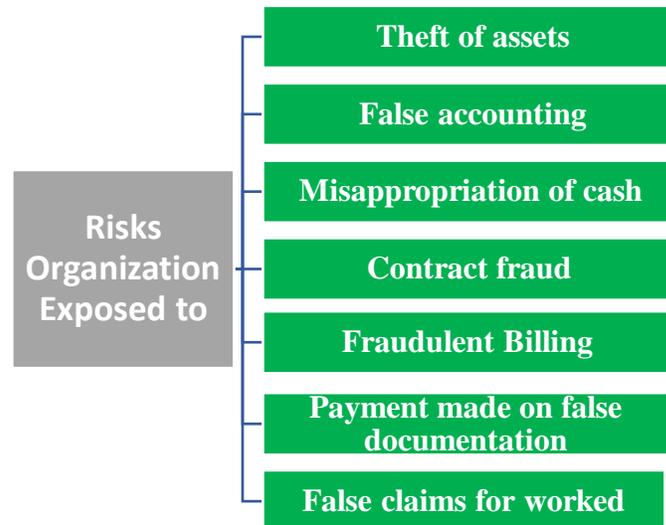
According to this report, the number of Indian organisations using forensic accounting has increased in the last year due to the Satyam fraud and an increase in white collar crimes. According to KPMG, the majority of corporate fraud instances include accounting methods designed to deceive investors and auditors about a company's true financial state. As a result, the number of organisations using forensic accounting has increased by 100 percent in the last year.

The number of Indian corporations using forensic accounting has risen in the last year, according to this article, due to the Satyam scam and an increase in white collar crimes. According to KPMG, the number of organisations using forensic accounting has increased by 100 percent in the last year due to the bulk of corporate fraud cases including accounting techniques aimed to deceive investors and auditors about a company's true financial state. (Forensic accounting helping companies fight white-collar crime Financial Express [New Delhi] 25 Aug 2011).

This paper presents the perspectives of forensic accountants, attorneys, and accounting scholars on the issue of expert witness disclosure in forensic accounting. (An Empirical View of the Transparent Objectivity of Forensic Accounting Expert Witnesses DiGabriele, James A. (Jan 2010).

This article discusses the rapidly expanding opportunities for forensic accountants, who work with insurance firms, banks, police forces, government agencies, and other organisations. This article examines the meaning and nature of forensic accounting as a specialised specialty in the accounting profession, as well as the activities and services offered, core knowledge and personal skills necessary. Indeed, forensic accounting as a separate specialist consulting field has a bright future. (Forensic Accounting: A New Paradigm For Niche Consulting Dr. Madan Bhasin).

Conceptual Framework



(Source: Author)

Statement of the Problem

Detecting fraud or white collar crime was thought to be part of the standard accounting profession until recently. Throughout their regular audits, internal and external auditors were supposed to keep a watch out for fraud. Accountants today understand that auditors can only examine for compliance with generally accepted accounting principles, auditing standards, and corporate rules in a company's records. As a result, a new accounting category is required to detect fraud in organisations that suspect fraudulent transactions. The term "forensic accounting" refers to this type of accounting. In terms of India, forensic accounting is a relatively untapped field.

Objectives of the Study

- a) To find out whether companies are willing to use forensic accounting
- b) To find out whether companies are more reliable on auditing or forensic accounting or both
- c) To investigate whether the companies gain by using forensic accounting
- d) To study the impact of forensic accounting on the companies and its effectiveness

Scope of the Study

1. The Ineffectiveness of Statutory Audits

Despite the fact that audits are needed by law in order to discover financial fraud, audits do not always detect wrongdoing. Internal and external audit failures have increased the demand for forensic accountants to investigate fraud. One topic that could be examined is Why does the statutory audit system often fail to detect fraud, and how can it be improved by enhancing forensic accounting standards?

2. Detection of Mega-Fraud

Large multinational organisations that engage in big fraud are unfortunately not uncommon in the news. These heists are frequently carried out on such a huge scale that only one person can be the perpetrator. This type of financial deception is perpetrated by a group of persons who have banded together to do it. Students studying forensic accounting should look at what protections are required to catch wrongdoers before they inflict irreversible damage.

3. Case Studies by Country

Students interested in the state of forensic accounting around the world can find it interesting to look into forensic accounting standards in various nations. China or India, for example, might be case studies in forensic accounting, especially when compared to the US industry. A student could also compare two countries outside of the United States, such as England and India. This kind of study could reveal information about forensic accounting methods all throughout the world.

4. Forensic Accounting's Growing Popularity

According to the Journal of Forensic Accounting, there is anecdotal evidence that forensic accounting is becoming more popular. Students could conduct study to see if this is correct. And, if that's the case, what motivates students to pursue careers in this field? Another relevant study question is whether forensic accounting graduates are satisfied with their education's outcomes, whether they have found work, and if so, whether it has matched their expectations.

Methodology of the Study

Data Source: The research is based on primary data collected through a questionnaire survey method. and secondary data from journals, reports and websites.

Sampling Design

It is decided to utilise judgemental sampling. Participants are chosen using this method based on an experienced individual's assessment that they will fit the study's requirements. This is utilised when just a small group of persons or a certain type of people has the information that is being sought.

Sample for the Study

The sample size selected is 30.

Implications of the Study

In completing their assessments, exams, and enquiries, forensic accountants seek simply the truth, merely delivering the "actual" conclusion of their findings in a "unbiased" and objective manner.

The services of forensic accountants are in the following areas:

- a) Employee fraud detection
- b) Criminal investigation
- c) Outgoing partner settlement
- d) Arbitration service
- e) Settlement of insurance claims
- f) Dispute settlement
- g) Cases relating to professional negligence

In the accounting profession, forensic accounting is a rapidly growing field. The current litigious corporate environment, as well as the rising amount of fraudulent business activities, are factors contributing to this development.

Limitations of the Study

1. This study is only confined to the companies in Bangalore.
2. The government sector is not included in this study.
3. In this study customers and employees are not considered.

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Submission date: 30-Oct-2021 03:39AM (UTC-0500)

Submission ID: 1688230338

File name: 5_Block_chain_-_Copy.docx (84.64K)

Word count: 2814

Character count: 16810

Block Chain Technology in Health care Sector: An Over view of Concept

Abstract:

Since the introduction of the block chain through Bitcoin, research has been conducted to see if it can be applied to non-financial uses as well. Blockchain technology is predicted to have a substantial impact on the healthcare business, to name just one example. Research in this area is still in its early stages, but it is growing rapidly, and health informatics researchers and practitioners are constantly challenged to keep up with the rapid rate of advancement in this field. The purpose of this study is to present an alternative viewpoint on the implementation of block chain technology in healthcare. There have been numerous studies that have proposed various use cases for the deployment of block chain technology in healthcare; however, there have been few suitable prototype implementations and studies to evaluate the effectiveness of the technology in the sector, according to the research. The findings of the study also emphasise the current state of the art in the development of block chain applications for healthcare, as well as their confines and potential areas for future development and research. As a result, further research is still required in order to better comprehend, characterise, and evaluate the applicability use of block chain technology in the healthcare industry.

Keywords: block chain, healthcare, Advantages of Blockchain, Benefits of Blockchain and Block Application

Introduction

The use of block chain technology in healthcare increased dramatically in recent years, and this has had a favourable influence. Technology has transformed healthcare, and this has had significant impact on the healthcare sector. Following the discovery of a divergence between the blockchain technology and healthcare industry, the inquiry into this matter was commenced. To establish the distribution and use of datasets in different venues, as well as the trend in blockchain technology of healthcare sector, this study used bibliometric analysis, as well as keywords and citations. The researchers also referred and evaluated case studies of E-health and telecare medicine information systems, which they found to be lacking in terms of security and privacy. In this learning, future issues like a scalability and capacity storage, the size of block chains, universal interoperability, and standardisation were investigated. This research has provided us with a better understanding of the rationale for utilising block chain technology in the healthcare industry. Among the interesting areas mentioned were the health data collection and sharing procedure, clinical trials, the pharmaceutical industry, big data, synthetic cleverness, a 5 G device of ultrasonic, privacy and security.

During the first decade of the twenty-first century, this transformative technology will have a significant control on domination of nation, as well as institution-wide activities, business operations, education, and everyday survives. A revolutionary nature of the Internet has the potential to turn it from "The Internet of Information Sharing" to "The Internet of Value Exchange," transforming it from "The Internet of Information Sharing." On a global scale, it is expected that block chain technology would profoundly alter the ways in which organisations, industries, and educational institutions conduct their operations, as well as to accelerate the expansion of economy on the knowledge-based.

Block chain Applications

Transactions on the blockchain network are broadcasted to every peer linked to it; clients, referred to as miners, then employ a cryptographic technique to validate the operation in question. Because of this validation, there are no longer any major concerns with digital currency exchange that previously existed: establishing that the digital asset exists and that it has not previously been exhausted, and ensuring that the digital asset has not already disbursed. It is regarded legal when the miner concludes that the transaction has been correctly generated (that is, that contain both input and output in the protocol just the fields

defined) and that the outputs it intends to send are actually existent on the network. Anyone wanting to invest their time and money to mining does not need to be qualified; miners can be anyone with a desire to help. As an incentive for miners to continue their work as miners, bitcoin are generated and remunerated to them for each block of contacts that is legalized. This provides an additional source of income for miners.

Healthcare Applications of Block chain

The field of healthcare information technology is currently reaping the benefits of this newfound interest and passion. An ideation challenge for block chain in health care was organised by the National Coordinator for Health Information Technology (ONC) in 2016, in recognition of impending relevance furthermore importance of block chain in health care. The challenge solicited white papers on the impending use of blockchain in health overhaul. The Journal of the American Medical Association published the winning white papers when they were awarded. A number of proposed block chain-based healthcare applications have been developed as a result of this challenge. In contrast, while storing the entire well-being record inside a block chain has been proposed as a potential use case in the field of health care, several obstacles have been recognized, including concerns about privacy, compliance with regulatory necessities, and technical challenges associated with data storage and distribution. As a result, the vast majority of short-term recommendations have focused on data validation, auditing, authorisation procedures among other things.

One implementation example stands Guard time, a Netherland-based data security firm, which partnered with the government of Estonia for form a block chain-based framework to validate untiring uniqueness ([Mettler](#)). Upon registration, each citizen was given a smartcard, which linked his or her EHR data to their block chain-based identity. Whenever a change is made in the EHR, a hash is assigned to it and it is stored in the block chain database. Data included inside the EHR is safeguarded by an immutable audit trail as a consequence of this method, and records cannot be intentionally altered as a result of this strategy. It is also feasible to archive the present state of information from existing healthcare stores by utilising the immutable, time-stamped data records that are created during the archiving process. The time stamp and cryptographic signature of every modification to the healthcare database, such as appointment scheduling, are added as part of a block of updates known as a block. Based on A system like this has various potential benefits, including reducing the danger of

arrangement fraud at the Veterans Administration and also the possibility of data tampering in implantable medical devices, such as trendsetters. It can, for example, ensure that any changes made to the healthcare record are secure and auditable, among other things, among other advantages.

Applications in the field of healthcare

In the field of healthcare, block chains may be imagined in five key areas:

- Electronic medical record (EMR) management of data,
- Healthcare protection data,
- Personal health record management data,
- Point-of-care management of genomics,
- Electronic health record management and more.

Only inside an organisation or network of organisations can medical information about a certain patient be automatically updated and shared at this time, according to current state-of-the-art technology. Alternatively, if the information was wrongly arranged so that a collection of detailed information on the blockchain's uppermost layer was the only thing that existed. did not contain PHI, which stands for personally identifiable information, is what this is, could be expanded even further (PII). Researchers and other organisations would be able to access a broad range of data, including Patients in cohorts numbering in the hundreds of thousands as a result of this arrangement. When such huge amounts of data are made available, clinical research, safety event and reporting of adverse events, and detection, as well as public health reporting, will benefit immensely. The following are some of the advantages of block chain technology in the healthcare sector:

- **Patients can move seamlessly between physicians without experiencing any downtime**

Individual patients might use the same information on the blockchain to quickly unlock and those who are willing to disclose their health information physicians or organisations, all through the use of a private key that can be shared. Interoperability and collaboration between diverse users of health information technology (HIT) could be improved as a result of this.

- **Improved patient treatment that is faster, less expensive, and more convenient.**

A blockchain technology has potential to be utilised in a variety of applications. Construct a centralised system for storing and updating health records, which can then be retrieved securely and quickly by authorised users. The avoidance as a result of miscommunication between different healthcare provide a personnel involved in the same patient's care as another can save a plethora of errors, allow for faster diagnostics and interventions, and allow for more individualised care for each patient.

- **Electronic health records that are interoperable**

Organizations can contribute and distribute information using this channel. A single secure system if they use the blockchain to store a specific set of standardised data, as well as Images such as radiographic or other images that are stored separately can be accessed over private encrypted links. This would allow them to submit and share data with greater confidence. The usage of smart contracts and blockchain technology uniform authorisation protocols can be tremendously advantageous in terms of streamlining communication and promoting smooth exchange of information.

- **Data protection and privacy**

Between 2009 and 2017, there were approximately 176 million data breaches involving healthcare information. The secure characteristics connected with the blockchain can aid in the protection of health information to a greater extent. Each individual A secret key, which dismiss only be unlocked when and for the epoch of time required, is used in conjunction with a public identification or key. The ability to hack into a system would also be constrained by the requirement to target each user separately in order to get personal information. Blockchain can be utilised to generate an immutable audit trail of health-related information as a result of this development.

- **Health-related mobile applications and remote monitoring**

The importance of Mobile health applications are becoming increasingly popular. is growing as technology continues to develop at a rapid pace. According to the findings in this case study, blockchain technology can keep electronic medical records (EMRs) private while also allowing the data to be transferred to medical workers quickly and made available for self-monitoring and at-home carefulness as required well as for other purposes. This area, on the other hand, is highly vulnerable in relation to malware, and

notably root exploits, which might grant the hacker gained access to the patient's information personal information.

- **Finding and obtaining medical supplies is a priority.**

Pharmaceutical supply can be made more safe and traceable using blockchain technology, which provides complete transparency. Additionally, it can give monitoring of the labour expenses as well as the carbon emissions associated with the manufacturing of these products.

- **Insurance claims for medical treatment**

In particular, the blockchain is well suited to claim processing since it allows for the presentation of medical events as they occurred, with no possibility of modifying the data at a later time for the purpose of fraud or deception.

- **Keeping track of disease outbreaks and epidemics**

The unique features of blockchain can aid in real-time reporting of sickness as well as the analysis of disease patterns, which can aid in the identification of the disease's origin and transmission factors, among other things.

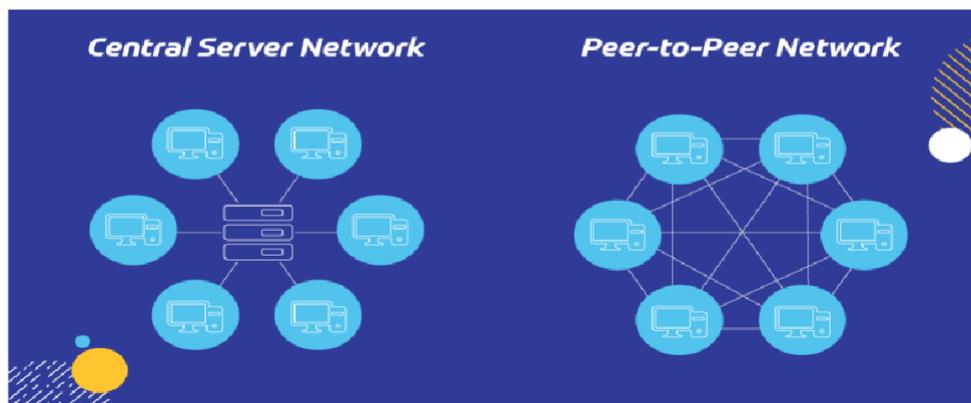
- **Ensuring the security of genetic information**

Genomic data theft has become a significant problem as a result of the proliferation of organisations that provide DNA sequencing to individuals. Blockchain technology can prevent this from happening, and it can even serve as an internet marketplace where scientists can purchase genomic information to use in investigation. This might encourage risk-free selling while also eliminating the need for pricey middlemen. In the field of healthcare, blockchain applications are still in their infancy. Ethereum and Hyperledger Fabric are two blockchain technology frameworks are currently in use. in use on a somewhat limited scale, and are examples of blockchain technology frameworks. Blockchain services could be utilised to improve the administration of health-care information if the security of the blockchain is improved, and systems that encourage synchronised transactions are implemented.

Blockchain represents a significant departure from traditional approaches to data management. In a typical database, the data is stored on a single, central server (or server

network), and the database administrator is located in a central location. A blockchain-based method to data management, on the other hand, is one in which data entries are appended to an electronic ledger that is dispersed throughout a peer-to-peer network with no central administration of the data (Figure 1).

Figure 1. Centralised versus a distributed, peer-to-peer network



Source: HIMSS Blockchain Networks Overview (HIMSS, 2019)

Advantages and issues with blockchains in healthcare

As per secondary source the key concerns with blockchain applications in healthcare include:

- ✚ Network infrastructure security at all levels of the organisation;
- ✚ Identity verification and authentication of all participants; and
- ✚ Patient identification and authentication.
- ✚ Standardized patterns of authorization to access electronic health information and standardised patterns of authorization to access electronic health information

DLT can be used in a variety of healthcare situations, although not every activity in the healthcare industry tied to transactions. Public blockchains, on the other hand, cannot be utilised to store sensitive because the information, such as identifiable health data, is important is confidential contained inside them is freely accessible. In order to maintain patient confidentiality, providers must take into account privacy concerns (PHI).

The second point is that blockchain technology is vulnerable to certain forms of assaults, although it has built-in defence against others, it is nonetheless vulnerable to them. A

consequence of the blockchain code is that it is susceptible to zero-day attacks, vulnerabilities, and social engineering attempts. Therefore, information security must be given extra attention, particularly when it is used in the healthcare industry.

Conclusion

Because blockchain technology's data is unchangeable, it should not be used indiscriminately in the healthcare industry. Large files, as well as those that change frequently, may be excluded. All personally identifiable information should be kept off the chain. As a series of blocks linked together by cryptographic signatures (each of which is referred to as a hash), blockchain defines a chain of data or transactions that are maintained in shared ledgers and backed by a network of interconnected processes known as nodes. Blockchain technology is a sort of dispersed ledger technology that was developed in the early 2000s. Because each node has a copy of the entire chain on its hard drive, they are constantly updated and kept in sync with one another. The fact that it is based on well-known and tested underlying technologies such as networking, hashes, and encryption does not diminish the fact that it is fundamentally different in terms of functionality from traditional programming, networks, databases, and web interfaces. It is required to acquire new expertise in the areas of design, patterns, data sharing, and implementation. Blockchain technology is still in its initial phases of development, nevertheless initial solutions have proven the ability to lower healthcare costs, expedite corporate procedures, and increase access to information among disparate and different stakeholders working toward a single goal.

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Policy Brief: Opportunities and Challenges Of Blockchain In Healthcare © Oecd 2020

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BLOCK CHAIN TECHNOLOGY IN HEALTH CARE SECTOR: AN OVER VIEW OF CONCEPT*

BY

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Abstract

Since the introduction of the block chain through Bitcoin, research has been conducted to see if it can be applied to non-financial uses as well. Blockchain technology is predicted to have a substantial impact on the healthcare business, to name just one example. Research in this area is still in its early stages, but it is growing rapidly, and health informatics researchers and practitioners are constantly challenged to keep up with the rapid rate of advancement in this field. The purpose of this study is to present an alternative viewpoint on the implementation of block chain technology in healthcare. There have been numerous studies that have proposed various use cases for the deployment of block chain technology in healthcare; however, there have been few suitable prototype implementations and studies to evaluate the effectiveness of the technology in the sector, according to the research. The findings of the study also emphasise the current state of the art in the development of block chain applications for healthcare, as well as their confines and potential areas for future development and research. As a result, further research is still required in order to better comprehend, characterise, and evaluate the applicability use of block chain technology in the healthcare industry.

Key words: block chain, healthcare, Advantages of Blockchain, Benefits of Blockchain and Block Application.

Received 06August 2021, Accepted 27August 2021, Published 15September 2021

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Introduction

Block chain is the core technology used to create the cryptocurrency, Bitcoin, through the maintenance of immutable distributed ledgers in thousands of nodes proposed by Satoshi Nakamoto in 2008 (S Nakamoto 2008). Since then, block chain technology has been used in various industries such as business, finance, and healthcare. In healthcare system, block chain technology has a potential in protecting patient information (Mohamad). Block chain is a technology designed to manage electronic data that has the potential to support transparency and accountability. A block chain is a ledger of transactions where an identical copy is visible to all the members of a computer network. Network members validate the data entered into the ledger; and once entered, the data are immutable (OECD, 2020). It has been considered as part of the fourth industrial revolution since the invention of steam engine, electricity, and information technology (Chung and Kim 2016; Schwab 2017).

The use of block chain technology in healthcare increased dramatically in recent years, and this has had a favourable influence. Technology has transformed healthcare, and this has had significant impact on the healthcare sector. Following the discovery of a divergence between the blockchain technology and healthcare industry, the inquiry into this matter was commenced. To establish the distribution and use of datasets in different venues, as well as the trend in blockchain technology of healthcare sector, this study used bibliometric analysis, as well as keywords and citations. The researchers also referred and evaluated case studies of E-health and telecare medicine information systems, which they found to be lacking in terms of security and privacy. In this learning, future issues like a scalability and capacity storage, the size of block chains, universal interoperability, and standardisation were investigated. This research has provided us with a better understanding of the rationale for utilising block chain technology in the healthcare industry. Among the interesting areas mentioned were the health data collection and sharing procedure, clinical trials, the pharmaceutical industry, big data, synthetic cleverness, a 5 G device of ultrasonic, privacy and security.

During the first decade of the twenty-first century, this transformative technology will have a significant control on domination of nation, as well as institution-wide activities, business operations, education, and everyday survives. A revolutionary nature of the Internet has the potential to turn it from "The Internet of Information Sharing" to "The Internet of Value Exchange," transforming it from "The Internet of Information Sharing." On a global scale, it is expected that block chain technology would profoundly alter the ways in which organisations, industries, and educational institutions conduct their operations, as well as to accelerate the expansion of economy on the knowledge-based. Due to its immutability, transparency, and trustworthiness for all transactions executed in a block chain network, this innovative technology has many potential applications (Underwood 2016). Swan (2015) indicated that the development of block chain applications could be divided into three stages; Block chain 1.0, 2.0, and 3.0. Block chain 1.0 is the deployment of cryptocurrencies as a peer-to-peer cash payment system. Block chain 2.0 is the extensive block chain applications than simple cash transactions, including stocks, bonds, loans, smart property, and smart contracts. Block chain 3.0 is developing block chain applications beyond currency, finance, and markets, such as in the areas of government, health, science, literacy, culture, and art (M Swan).

Block chain Applications

The use of block chain for decentralized data management holds potential for applications beyond financial services. An article published in the Harvard Business Review highlights several potential applications of block chain, from the validation of artwork to verification of voting records (Tapscott). Because of this diverse interest, several companies, including IBM, Microsoft, Accenture, and others, have formed organizations to develop block chain-based technology that can be adopted by industry partners (Popper N). Several companies have started to build on this technology for use cases that include identity verification, trade settlements, and supply chain management. This interest is largely driven by the prediction that the automation offered by block chain-enabled software could save the financial service industry \$15 to \$20 billion annually within the next 5 years (Belinky M).

Transactions on the blockchain network are broadcasted to every peer linked to it; clients, referred to as miners, then employ a cryptographic technique to validate the operation in question. Because of this validation, there are no longer any major concerns with digital currency exchange that previously existed: establishing that the digital asset exists and that it has not previously been exhausted, and ensuring that the digital asset has not already disbursed. It is regarded legal when the miner concludes that the transaction has been correctly generated (that is, that contain both input and output in the

protocol just the fields defined) and that the outputs it intends to send are actually existent on the network. Anyone wanting to invest their time and money to mining does not need to be qualified; miners can be anyone with a desire to help. The incentive for miners to continue their work as miners, bitcoin are generated and remunerated to them for each block of contacts that is legalized. This provides an additional source of income for miners.

Healthcare Applications of Block chain

The field of healthcare information technology is currently reaping the benefits of this newfound interest and passion. An ideation challenge for block chain in health care was organised by the National Coordinator for Health Information Technology (ONC) in 2016, in recognition of impending relevance furthermore importance of block chain in health care. The challenge solicited white papers on the impending use of blockchain in health overhaul. The Journal of the American Medical Association published the winning white papers when they were awarded. A number of proposed block chain-based healthcare applications have been developed as a result of this challenge. In contrast, while storing the entire well-being record inside a block chain has been proposed as a potential use case in the field of health care, several obstacles have been recognized, including concerns about privacy, compliance with regulatory necessities, and technical challenges associated with data storage and distribution. As a result, the vast majority of short-term recommendations have focused on data validation, auditing, authorisation procedures among other things.

One implementation example stands Guard time, a Netherland-based data security firm, which partnered with the government of Estonia for form a block chain-based framework to validate untiring uniqueness (Mettler). Upon registration, each citizen was given a smartcard, which linked his or her EHR data to their block chain-based identity. Whenever a change is made in the EHR, a hash is assigned to it and it is stored in the block chain database. Data included inside the EHR is safeguarded by an immutable audit trail as a consequence of this method, and records cannot be intentionally altered as a result of this strategy. It is also feasible to archive the present state of information from existing healthcare stores by utilising the immutable, time-stamped data records that are created during the archiving process. The time stamp and cryptographic signature of every modification to the healthcare database, such as appointment scheduling, are added as part of a block of updates known as a block. Based on A system like this has various potential benefits, including reducing the danger of arrangement fraud at the Veterans Administration and also the possibility of data tampering in implantable medical devices, such as trendsetters. It can, for example, ensure that any changes made to the healthcare record are secure and auditable, among other things, among other advantages.

Applications in the field of healthcare

In the field of healthcare, block chains may be imagined in five key areas:

- Electronic medical record (EMR) management of data,
- Healthcare protection data,
- Personal health record management data,
- Point-of-care management of genomics,
- Electronic health record management and more.

Only inside an organisation or network of organisations can medical information about a certain patient be automatically updated and shared at this time, according to current state-of-the-art technology. Alternatively, if the information was wrongly arranged so that a collection of detailed information on the blockchain's uppermost layer was the only thing that existed. did not contain PHI, which stands

for personally identifiable information, is what this is, could be expanded even further (PII). Researchers and other organisations would be able to access a broad range of data, including Patients in cohorts numbering in the hundreds of thousands as a result of this arrangement. When such huge amounts of data are made available, clinical research, safety event and reporting of adverse events, and detection, as well as public health reporting, will benefit immensely. The following are some of the advantages of block chain technology in the healthcare sector:

The following are some of the advantages of block chain technology in the healthcare sector:

- **Patients can move seamlessly between physicians without experiencing any downtime**

Individual patients might use the same information on the blockchain to quickly unlock and those who are willing to disclose their health information physicians or organisations, all through the use of a private key that can be shared. Interoperability and collaboration between diverse users of health information technology (HIT) could be improved as a result of this.

- **Improved patient treatment that is faster, less expensive, and more convenient.**

A blockchain technology has potential to be utilised in a variety of applications. construct a centralised system for storing and updating health records, which can then be retrieved securely and quickly by authorised users. The avoidance as a result of miscommunication between different healthcare provide a personnel involved in the same patient's care as another can save a plethora of errors, allow for faster diagnostics and interventions, and allow for more individualised care for each patient.

- **Electronic health records that are interoperable**

Organizations can contribute and distribute information using this channel. a single secure system if they use the blockchain to store a specific set of standardised data, as well as Images such as radiographic or other images that are stored separately can be accessed over private encrypted links. This would allow them to submit and share data with greater confidence. The usage of smart contracts and blockchain technology uniform authorisation protocols can be tremendously advantageous in terms of streamlining communication and promoting smooth exchange of information.

- **Data protection and privacy**

Between 2009 and 2017, there were approximately 176 million data breaches involving healthcare information. The secure characteristics connected with the blockchain can aid in the protection of health information to a greater extent. Each individual A secret key, which dismiss only be unlocked when and for the epoch of time required, is used in conjunction with a public identification or key. The ability to hack into a system would also be constrained by the requirement to target each user separately in order to get personal information. Blockchain can be utilised to generate an immutable audit trail of health-related information as a result of this development.

- **Health-related mobile applications and remote monitoring**

The importance of Mobile health applications are becoming increasingly popular. is growing as technology continues to develop at a rapid pace. According to the findings in this case study, blockchain technology can keep electronic medical records (EMRs) private while also allowing the data to be transferred to medical workers quickly and made available for self-monitoring and at-home carefulness as required well as for other purposes. This area, on the other hand, is highly vulnerable in relation to malware, and notably root exploits, which might grant the hacker gained access to the patient's information personal information.

- **Finding and obtaining medical supplies is a priority.**

Pharmaceutical supply can be made more safe and traceable using blockchain technology, which provides complete transparency. Additionally, it can give monitoring of the labour expenses as well as the carbon emissions associated with the manufacturing of these products.

- **Insurance claims for medical treatment**

In particular, the blockchain is well suited to claim processing since it allows for the presentation of medical events as they occurred, with no possibility of modifying the data at a later time for the purpose of fraud or deception.

- **Keeping track of disease outbreaks and epidemics**

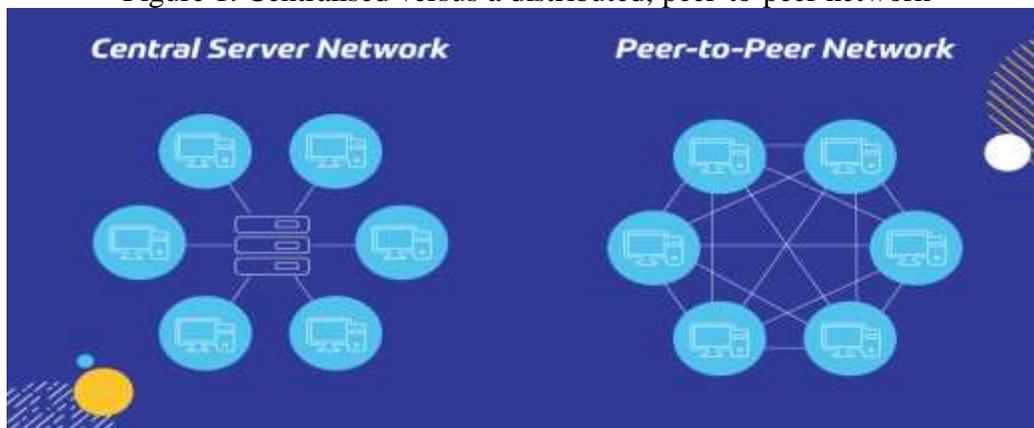
The unique features of blockchain can aid in real-time reporting of sickness as well as the analysis of disease patterns, which can aid in the identification of the disease's origin and transmission factors, among other things.

- **Ensuring the security of genetic information**

Genomic data theft has become a significant problem as a result of the proliferation of organisations that provide DNA sequencing to individuals. Blockchain technology can prevent this from happening, and it can even serve as an internet marketplace where scientists can purchase genomic information to use in investigation. This might encourage risk-free selling while also eliminating the need for pricey middlemen. In the field of healthcare, blockchain applications are still in their infancy. Ethereum and Hyperledger Fabric are two blockchain technology frameworks are currently in use. in use on a somewhat limited scale, and are examples of blockchain technology frameworks. Blockchain services could be utilised to improve the administration of health-care information if the security of the blockchain is improved, and systems that encourage synchronised transactions are implemented.

Blockchain represents a significant departure from traditional approaches to data management. In a typical database, the data is stored on a single, central server (or server network), and the database administrator is located in a central location. A blockchain-based method to data management, on the other hand, is one in which data entries are appended to an electronic ledger that is dispersed throughout a peer-to-peer network with no central administration of the data (Figure 1).

Figure 1. Centralised versus a distributed, peer-to-peer network



Source: HIMSS Blockchain Networks Overview (HIMSS, 2019)

Advantages and issues with blockchains in healthcare

As per secondary source the key concerns with blockchain applications in healthcare include:

- Network infrastructure security at all levels of the organisation;
- Identity verification and authentication of all participants; and
- Patient identification and authentication.
- Standardized patterns of authorization to access electronic health information and standardised patterns of authorization to access electronic health information

DLT can be used in a variety of healthcare situations, although not every activity in the healthcare industry tied to transactions. Public blockchains, on the other hand, cannot be utilised to store sensitive because the information, such as identifiable health data, is important is confidential contained inside them is freely accessible. In order to maintain patient confidentiality, providers must take into account privacy concerns (PHI).

The second point is that blockchain technology is vulnerable to certain forms of assaults, although it has built-in defence against others, it is nonetheless vulnerable to them. A consequence of the blockchain code is that it is susceptible to zero-day attacks, vulnerabilities, and social engineering attempts. Therefore, information security must be given extra attention, particularly when it is used in the healthcare industry.

Conclusion

Because blockchain technology's data is unchangeable, it should not be used indiscriminately in the healthcare industry. Large files, as well as those that change frequently, may be excluded. All personally identifiable information should be kept off the chain. As a series of blocks linked together by cryptographic signatures (each of which is referred to as a hash), blockchain defines a chain of data or transactions that are maintained in shared ledgers and backed by a network of interconnected processes known as nodes. Blockchain technology is a sort of dispersed ledger technology that was developed in the early 2000s. Because each node has a copy of the entire chain on its hard drive, they are constantly updated and kept in sync with one another. The fact that it is based on well-known and tested underlying technologies such as networking, hashes, and encryption does not diminish the fact that it is fundamentally different in terms of functionality from traditional programming, networks, databases, and web interfaces. It is required to acquire new expertise in the areas of design, patterns, data sharing, and implementation. Blockchain technology is still in its initial phases of development, nevertheless initial solutions have proven the ability to lower healthcare costs, expedite corporate procedures, and increase access to information among disparate and different stakeholders working toward a single goal.

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**CHALLENGES OF ONLINE TEACHING-LEARNING DURING COVID-19
PANDEMIC: A STUDY ON LEARNERS POINT OF VIEW**

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Abstract.

Considering the sudden shift to online teaching due to COVID-19 pandemic, a qualitative survey was conducted on 200 teachers to uncover their perspectives on online teaching-learning. The data, collected by questionnaire, were analysed, using percentage and frequency. Teachers are working as same as regular online mode and results indicated that students were enjoying online learning. Flexibility was found to be the most liked and poor network and connectivity, the most disliked elements of online learning. Adding to it, lack of interaction, distractions and one-sided teaching were mentioned as its disadvantages. Online safety and security issues were not addressed and teachers experienced difficult to control all the students in the online mode.

Key words: Online teaching-learning; COVID-19 pandemic; learning challenges, Online learning.

Introduction

COVID-19 has disrupted most of the industries in the world. Education is the only industry that is completely transferred to online mode in most countries around the world. Online learning was the best solution for continuing education during the pandemic, especially in tertiary education.

The need for education updating was required because of the fast advances in technology. They need to learn at any time, and any place was in its way to be achieved. (Wolfinger, 2016). Over the past two decades, online learning has been activated in some global institutes. However, most schools, colleges, and universities do not use this education mode, and their staff does not know what is involved in e-learning. MOOC (Massive Online Open Course) has facilitated and increased academics' awareness of online learning and its involvements (Lynch, 2004). The utilization of guidance for students to be motivated in virtual learning depends on practical orientation on cognitive, emotional, and behavioral engagement (Hartnett and Louwrens, 2015). The transition to a new environment of education, learners need special social care to improve their concentration and motivation to online learning in such a crucial crisis (Eccles et al., 1993; Harter, Whitesell, & Kowalski, 1992; Midgley, Anderman, & Hicks, 1995; Roeser& Eccles, 1998).

The study answers the following questions:

- Q1. What are the challenges of online commerce and management related subjects learning and what will be the provided facilities to students during online learning?
- Q2. Can students in remote towns get a good quality of internet connectivity during online learning?
- Q3. How to make online commerce and management classes more engaging, motivating, and innovative during e-learning since many papers are practical?
- Q4. Will commerce and management learners become familiar with online platforms and get enough experience and confidence to continue online learning?
- Q5. Do the recent social media applications facilitate students' technical skills needed for online education?

The objectives of this research are as follows:

- Identify the challenges and obstacles of e-learning during the COVID-19 crisis encountered by commerce and management learners.
- Understand and utilize the best methods and modes to engage and motivate the commerce and management learners in e-learning.
- Familiarize the commerce and management learners and teachers with the currently used platforms and applications that can assist in enhancing and reinforcing education during pandemics.
- Explore the reflection results of the mass movement by the university to the online

Literature review

In online learning environment, the traditional classroom lectures are replaced by web-based learning material and resources. As a learning tool, web-based technologies provide students with flexibility to learn at their own pace and at the time most suited to them. (Heidari & Galvin, 2002; Rouse, 2000; Kozlowski, 2002). Online learning environment also provides students with opportunities to learn the skills of creative thinking and problem solving (Sit et. al., 2005). The online learning designs also encouraged students to be responsible for their own learning and develop competencies and confidence to deal with difficult situations (Sit et. al., 2005). Instructors' accessibility, prompt feedback and clear instructions in terms of performance and learning expectations from students are found to be the key elements of learners' progress in online teaching and learning. (Hara & Kling, 2000).

E-learning platforms make information access convenient. It is found to be flexible in adapting to the needs of learners and its wider reach opens the door of quality learning for many learners (Poole, 2000; Soon et al., 2000; Cuellar, 2002). Online learning platforms develop deep level of understanding about subject matter (Petrides, 2002). It encourages, facilitates and develops creativity and higher level cognitive functioning (Petrides, 2002; Womble, 2008). Online learning is a new, exciting and dynamic experience for the learners which improves their learning as well as their academic performance i.e. their exam results (Smaldino, 1999; Leonard & Guha, 2001).

In Indian context, online teaching is a relatively new phenomenon as compared to traditional classroom teaching and this COVID-19 induced sudden lockdown made the transition to online teaching more cumbersome and unworthy to many learners. Meaningful online learning and teaching needs proper planning to cater diverse needs of students. Compromise in this planning leads to unproductive learning, resulting in non-accomplishment of learning objectives and learning outcomes. This sudden but much needed shift lacked this planning and analysis of students' needs and skills. Affordability and accessibility of computer and internet technology to vast majority of India's population combined, with lack of comfort and support; and familiarity with technological tools, may make learning unworthy, time-consuming and stressful to many learners. Online learning has also not undergone the same scrutiny as classroom teaching and researches on online teaching demonstrated mixed results (Ryan et al., 1999; Kenny, 2002; Atack and Rankin, 2002; Kozlowski, 2002). Amid this unprecedented crisis, there is a timely need to assess the efficacy of online learning to see whether the intended objectives of using online learning to support students' learning is achieved or not.

The idea that technology users have clearly defined preferences towards the use of technology, and so adoption of technology is an undoubtedly rational decision (Schoonenboom, 2012). Some people may have strong preference for technology, but this is not the absolute fact. Enthusiastic but uncritical use of technology is not a rarity; use of technology is also regarded as following the trends (Wang, 2010). Some people may be indifferent or may resist technology adoption (Sanford & Oh, 2010).

Theoretical framework

The application of technologies and digital literacies have been developed and improved (Coiro, Knobel, Lankshear, & Leu, 2008: p.4). The pedagogical theories and teaching approaches need to respond to the novel methods of using technology and how it can be integrated into learners' education effectively. Many theories are involved in educational processes, techniques, and approaches. However, they still adhere to traditional methods of learning. The theoretical perspective which reinforced the development of the new pedagogies is the activity theory (Mwanza & Engeström, 2005). In this theoretical approach, the focus is on the interaction between humans and computers. It played an essential role in learning expansion using instruments, tools, mediation, etc. this theory highlights the potential impact on teaching and learning using new tools as vehicles for modernizing, contextualizing, and transforming activity procedures (Engestrom, 1987). Vygotsky (1978) focused on learning development and social interaction, (Cole & Wertsch, 1996). Attwell (2010, a) explored Vygotsky's ideas in terms of technology-enhanced education and personal contextual learning. Coffield (2008) said there is no "convincing evidence that learners can be divided by their learning preferences into four groups: visual, auditory, kinaesthetic or tactile" he

added (p.32) “this movement allows its disciples the pretense of student centered teaching, and it neatly transfers the responsibility of students’ failure to learn to tutors, e.g. ‘You didn’t match your teaching style to their learning styles”.

Methodology

The study adopted descriptive research methods for the analysis of the obtained data, and its findings focus on certain factors.

Participants

The study was conducted at the post graduate level for Commerce and Management learners in the Rural Bangalore, India. It was performed after completing online teaching classes and during the final examinations of 2020. The sample comprised 100 students: 42 male and 58 female students in the master degree with English major commerce and managements. Students in the commerce and management department form the highest number of students whereas other departments have few students only. Most of the students do not have any previous experience with online learning before the recent crisis.

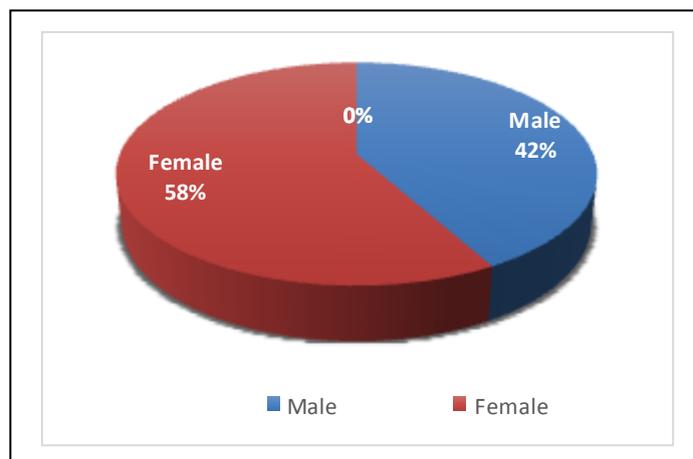


Figure1. Sample structure distribution

Research Instrument

For the investigation and data collection, an online survey-based questionnaire was designed to estimate the commerce and management online learning challenges during the unprecedented health and economic crisis. The survey-based questionnaire contains 15 multiple questions (yes/no, multiplechoice and open-ended questions), which covered the study’s objectives. It was designed via Google Forms and distributed among students using WhatsApp groups at the end of the 4th semester 2020. The questionnaire consists of different parts; the first part is about students’ demographic information, the second part includes a set of questions about learners’ experiences with online learning platforms (Blackboard, and other platforms) and the facilities which they could use, the third part is about the problems which they encountered during online learning, the fourth part is about their satisfaction with online learning, and finally, open-ended questions to get any extra information about online education -during the crisis- students want to add or mention. The questionnaire was checked for validity and reliability fulfilment.

Results

The study adopted descriptive research methods for the analysis of the obtained data, and its findings focus on four main factors:

- The use of available activities and services in the Blackboard tool.
- The alternative tools used during online learning other than Blackboard.
- The challenges and obstacles encountered during online English learning classes.
- EFL Learners’ satisfaction with face-to-face virtual learning during COVID-19.

The first research question was about the learners’ ability to use all the Blackboard facilities to perform online learning activities. The results revealed that 67.10% of learners could use all the Blackboard services for online learning. They could join the online classes, participate effectively, submit their assignments, and perform the examinations. 11% attend and participate during the lectures, they could not submit their assignment and could not complete the examinations online,

10.90% only could attend classes, 6% of learners attended, participated, and submitted the projects, and 5% they could not perform the mentioned activities using the Blackboard platform. Figure two below displays the percentage of used facilities of the Blackboard tool in online English learning during COVID-19.

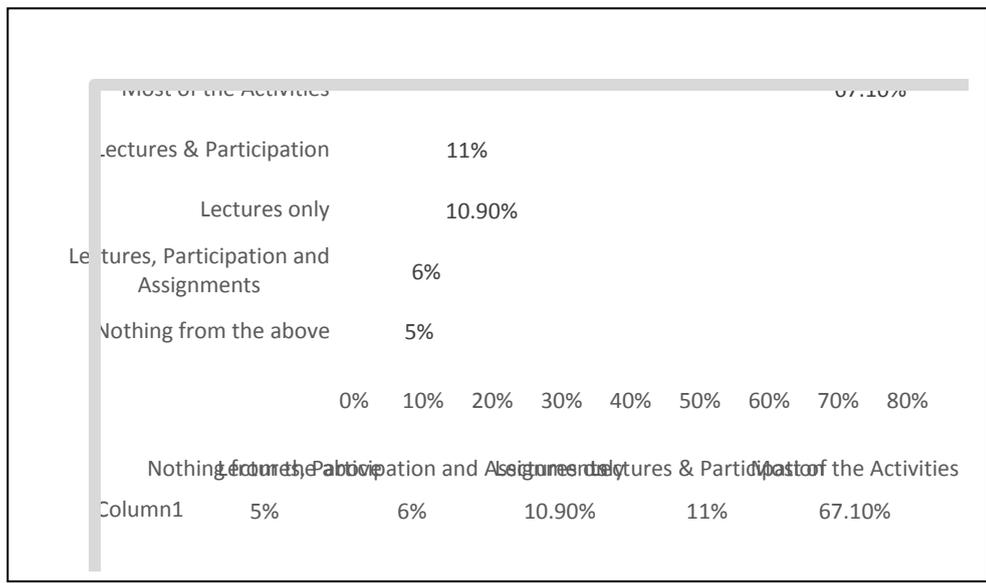


Figure 2. Activities carried out using Blackboard Platform

The second research question was about the alternative tools used by some commerce and management learners when they failed to use the Blackboard tool. WhatsApp was used to send and receive homework and other assigned tasks. Some teachers used WhatsApp for conducting classes; the highest percentage was in using WhatsApp with a ratio of 65%, the second alternative platform is emails with a ratio of 45.10%. The third platform was Zoom, with a percentage of 29%. Other platforms like google classroom and Microsoft team etc., were used with 22% and WebEx and Big blue button used 20%. The percentages of operating platforms and tools other than Blackboard in online learning during the COVID-19 outbreak are shown in figure three below.

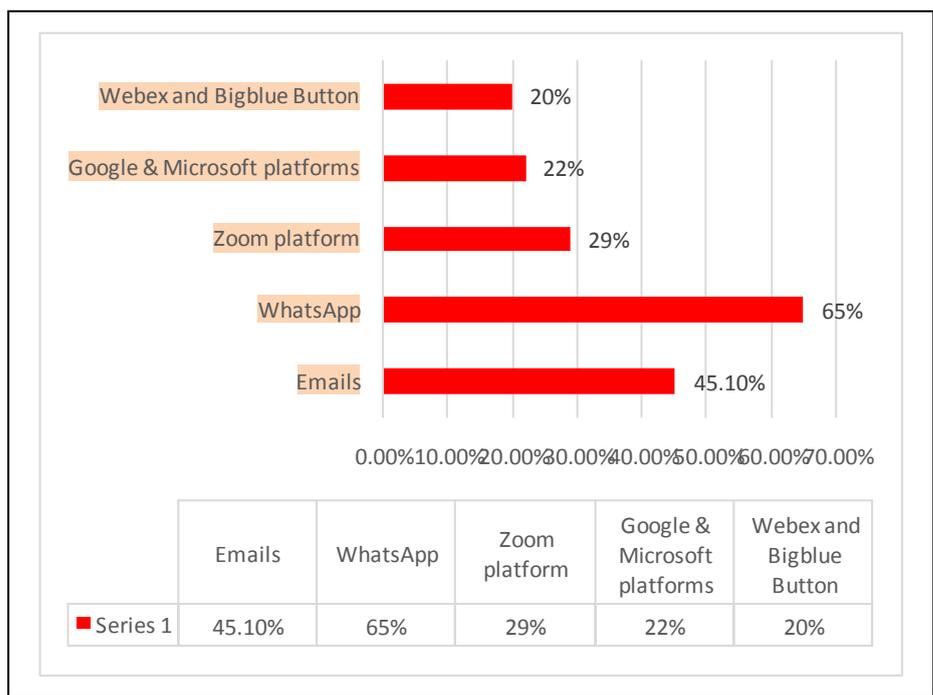


Figure 3. Alternative online educational platforms

The third research question was about the reported challenges and obstacles; the first issue is

internet speed, where about 48% of learners face this problem. The learners who did not encounter any problem during e-learning is 18% only. Online access and the material downloading score is 14%. Issues in conducting online exams score 13% as some students could either not access the online examinations or have internet connectivity problems. No lab session score is 8%. Figure four below addresses these online learning-related issues:

Challenges of e-Learning during the COVID-19 Pandemic

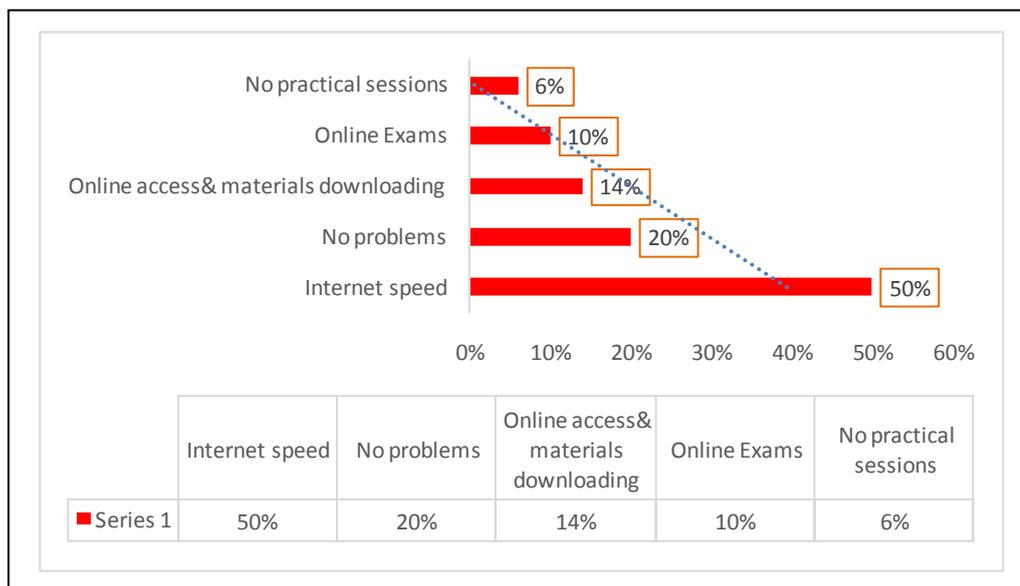


Figure 4. Issues encountered during online learning

The last research question discusses the learners’ satisfaction with online learning during the pandemic. 44% of learners were satisfied with online learning, whereas 40% were somehow satisfied with some preservations. 16% of learners were not happy with online learning.

The following figure indicates the learners’ responses to their satisfaction with online learning.

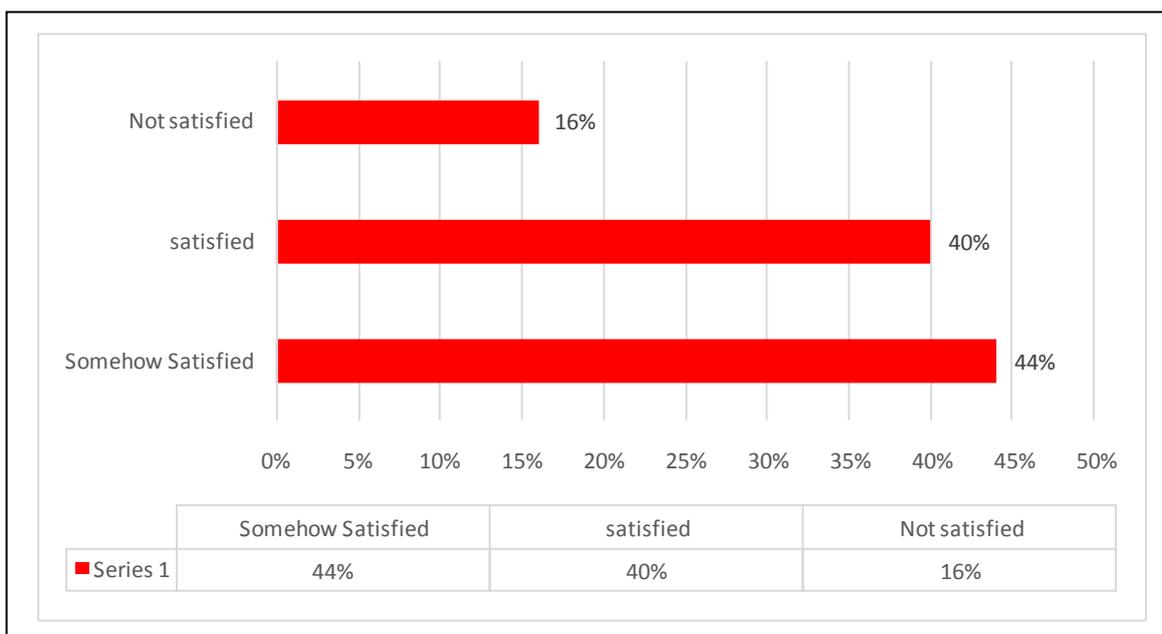


Figure 5. General Satisfaction with online learning

Table one summarizes the descriptive statistical analysis of the study. It is noticed that the highest scores of all the statistical measures (Mean, Standard Deviation, Sample Variance, Kurtosis, Skewness, and Confidence Level (95.0%)) are listed in the challenges and related online issues in online Commerce and Management learning during the pandemic. The mean score is 3.65 in the

challenges variable whereas other variables' scores are less than one as it is depicted in the table below, Blackboard facilities' mean score is 0.199, the alternative used platforms' mean score is 0.458, and Learners' satisfaction with online learning is 0.333. That means the challenges negatively influenced EFL online learning during the COVID-19 pandemic.

Variable	Mean	Standard Deviation	Sample Variance	Kurtosis	Skewness	Confidence Level (95.0%)
Blackboard Facilities	0.1996	0.279429	0.07808	4.884151	2.203594	0.346956
Alternative Used Platforms	0.45825	0.214812	0.046144	-1.95412	0.440486	0.341814
Challenges	3.6514	7.520839	56.56302	4.984711	2.231877	9.338355
Satisfaction	0.333	0.168882	0.028521	--	-1.73144	0.419525

Conclusion

Nevertheless, the effectiveness of online learning varies amongst students. The general consensus on students, especially younger ones, is that a structured environment is required, because they are more easily distracted. To get the full benefit of online learning, there needs to be a concerted effort to provide this structure and go beyond replicating a physical class/lecture through video capabilities, instead, using a range of collaboration tools and engagement methods that promote 'inclusion, personalization and intelligence', according to Dowson Tong, Senior Executive Vice President of Tencent and President of its Cloud and Smart Industries Group. Since studies have shown that children extensively use their senses to learn, making learning fun and effective through use of technology is crucial, "Over a period, it is observed that clever integration of games has demonstrated higher engagement and increased motivation towards learning especially among younger students, making them truly fall in in the line of learning.

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CRITICAL INFRASTRUCTURE UNDERPINS THE HIGH INCLUSIVE GROWTH IN A COUNTRY

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Abstract:

Inclusive growth has become a strategic pillar for managing the exercises of the any country. India has coordinated the sustainable development as a focus area in its growth strategy plan of 12th 5-year plan, where it is referenced faster sustainable and more inclusive growth. It has given importance to education to play significant role in advancement inclusive economic development.

Inclusive growth is now at the heart of mainstream of developing economies. A country needs to move its development focus from poverty reduction through education by providing equal opportunities to all and hence inclusive growth in a country. India is having poverty reduction as the central goal of policy over the last 60 years. Now it is focusing on raising economic growth and making growth more inclusive but even then also India ranks among the countries with highest income inequality. This paper explores the Inclusive growth framework based on the various suggestions given in the previous research work on operationally usable model for the evaluation of growth inclusiveness and highlight its development based on the information with regard to growth, poverty and inequality which allows for the quantitative assessment of growth inclusiveness. Further this paper reviews existing literature of inclusive growth and elucidate an approach to define and measuring inclusive growth. It high lights the various aspects such as rural transformation, good governance, development of infrastructure, better healthcare, educational inclusion, environmental protection, reducing regional disparities, financial inclusion and agriculture developments to have inclusive growth. Therefore, inclusive growth is increasingly becoming a development agenda nationally and internationally with the necessary infrastructure and hence the present study.

Key Words: Inclusive Growth, Infrastructure, Growth Strategy, Integrated Sustainable Growth and Economic Development.

Introduction

Inclusive growth is described as economic growth that provides equal opportunities for all economic participants while also providing equal benefits to all members of society during economic growth. This is done through education by empowering people and developing required skills in them. It also comprehends a growth which is environmental friendly and target for giving good governance and as a result helps in creation of a sustainable economic growth which is required for inclusive growth. The special efforts are required to be made on increasing employment opportunities for bringing about an improvement in the standard of living of the people. The Government of India's main strategy is inclusive growth, which is described as rapid development that benefits all segments of the society. As a result, the pattern and magnitude of disparities in different areas have a huge impact on inclusive growth. The country's economy has experienced rapid growth in recent years, and the Indian market is the world's second largest consumer market. On the other hand, there are significant geographical, socioeconomic, cultural, and gender inequalities across the world.

India has huge population of around 17.74% of the total world population with the high levels of income inequality with larger extent of demographic diversity. In our country 10% of richest have access to all

shares of total income and only rest is distributed among the majority of remaining population. Hence, the inclusive growth has become very important through providing various infrastructure to alleviate poverty and ensure the fulfilling of necessities like health, education and other basic facilities are accessible to everyone. Hence, inclusive growth is studied in a very broader sense since it is not only benefits the poor but also it encourages poor to participate in the process of growth.

As a result, it creates new economic opportunities and also ensures the equal access to all and maximum extent to poor. Investments in infrastructure are most important for economic growth and made accessible services at affordable price, hence in this regard the investments planning should be done. For this purpose, a government can go for a popular public-private-partnerships of financing infrastructure of combination as per the project requirements .

Literature Review

Ali and Son (2007) explained, inclusive growth is a development mechanism that increases the social opportunity feature by analyzing the community's average opportunities and how these opportunities are distributed among the population. The key elements of inclusive growth, according to him, are employment and productivity, development of human capabilities, and social safety nets and the targeted intervention.

Habitat (2009) presented a report on inclusive growth, which is a mechanism of overall inclusiveness in economic growth that raises the gross domestic product and reduces poverty.

World Bank (2009) presented a report on how to achieve inclusive growth by concentrating on widening the regional reach of economic growth, expanding access to assets and vibrant markets, and increasing equity in future generation opportunities.

Elena and Susana (2010) explained inclusive growth as a way to minimize poverty by allowing people to contribute to economic growth and get benefit from the growth process. They emphasized that rapid growth is unquestionable because it is needed not only for significant poverty reduction but also for long-term growth sustainability. Hence, it is broad based across the sectors and encompasses a substantial portion of the country's workforce. The micro and macro determinants of growth are linked in this definition of inclusive growth.

Growth Report (2010) notes that inclusiveness is a field that encompasses justice, equality of opportunity and security in market and job transitions, according to.

McKinley (2010), has identified that inclusive growth means achieving sustainable growth that enhances economic opportunities while also ensuring greater access to these opportunities so that all members of society can benefit from it.

Raumiyyar and Kanbur (2010) by reviewing the ADB report, authors have pointed out that although there is no universally accepted concept of inclusive growth or inclusive development, the word is generally understood to mean "growth that is followed by equal opportunity and encompasses economic, social, and institutional dimensions." They went on to say that inclusive growth is accompanied by a reduction of income disparities, so that the increase in income goes overwhelmingly to those with lower income.

Asian Development Bank (ADB, 2013) has described inclusive growth as economic growth that provides a greater number of people, regions, or countries with sustainable socio-economic opportunities while protecting the vulnerable, all being done in an atmosphere of equity, equal justice and political plurality.

Maritns and Lucy (2013), expressed that poverty reduction is the ultimate goal of any policy discussion over time, the inclusiveness of development is expressed as a growth elasticity of poverty. It is determined by two variables (a) income growth and (b) income distribution (Anand et al, 2013). Inclusive growth allows the vulnerable to fully engage in the growth process and get benefit from it. Inclusive growth means which involved both poverty and inequality reduction.

Asian Development Bank's long-term strategic framework 2008-2020 (Strategy, 2020) identifies inclusive growth is ranked first, followed by environmentally sustainable growth and regional integration. It identifies two key factors that influence inclusive growth: (i) achieving long-term growth that creates and expands economic opportunities, and (ii) ensuring greater access to these opportunities so that members of society can participate in and benefit from growth.

According to the official statistics, more than half of the potential working population do not even count in the economy, they are not part of the GDP and the growth spectacle. This is particularly striking because India is apparently at the peak of its demographic dividend that means it is primarily a youth driven economy.

To conclude overall the inclusive growth as per the various reviews, it is a growth of economy which should provide an equal opportunity to all in society in a large scale and also create an opportunity to members for participate in and facilitate to get benefit from the growth.

Objectives of the Study

1. To study and understand the meaning and need for Inclusive Growth
2. To study the Economic Growth required for Inclusive Growth
3. To know the extent of Inclusive Growth in India
4. To understand the extent of diversity in Indian States with regard to Inclusive Growth

Methodology and Sources of Data

The study has been done through secondary source of data. For the purpose of the study the secondary data has been collected to achieve the formulated objectives. Analysis of study has been made on the basis of country GDP and other parameters which will contribute towards the Indias' inclusive growth. The secondary data is collected from annual reports of ADB, OCED, World Bank and RBI, other magazines, journal, periodicals, books, newspapers and websites.

Conceptual Framework for Inclusive Growth:

The conceptual framework displays the key drivers of inclusive growth in India. The sustainable economic growth is the first and foremost important for any country and it is also a requirement for inclusive growth. Perhaps this explains why emerging economies such as Brazil, China, India, and others have put a greater emphasis on rapid economic growth in recent decades. The growth of the economy should facilitate the rural transformation, good governance, development of infrastructure, better health care, educational inclusion, environmental protection, reducing regional disparities, financial inclusion and agriculture development.



Source: Author

The conceptual framework's drivers for inclusive growth include basic socioeconomic amenities such as rural transformation, food, health, education, and electricity to everyone, as well as ensuring that everyone has access to good weather, good roads, and clean drinking water. The government ought to enhance administrative overall performance and ensure gender equity **in order to feel the impact** of growth. Human skills will be enhanced by good governance and gender equity. Jobless development is just as risky as inflation because it is followed by economic growth that provides sustainable jobs, which is the main driver of inclusive economic growth. Increased labour efficiency can be achieved by productive employment. Inclusion has a major impact on employment outcomes. The employment should contribute to poverty reduction. Inclusive development is important because it is the only way to eradicate total poverty. Inclusive growth has the potential to significantly reduce income inequality on both a vertical and horizontal level. Both of these things would help to improve the efficiency of human capabilities. As a result, sound foundations are needed for economic growth, including universal access to education and health care, financial services, emerging technology, and affordable bank loans, gender equality, and a more equitable distribution of resources can all support economic development. Private sector investments require a safe and predictable operating environment. In both fields, good governance should be encouraged and corruption should be combated at all levels. Infrastructure development must be inclusive, ensuring that all members of society have access to clean drinking water, electricity, housing, sanitation, transportation, and other necessities. Inclusive growth results in a wider access to

sustainable socio economic opportunities for a larger portion of a population.

As per the review of various literature, some of the key drivers for inclusive growth are identified and explained here as under:

- **Rural Transformation**

India is a nation of villages. Rural India constitutes 68.8 percent population and provides employment to more than 70 percent workforce of the country. Agricultural and allied activities are still a major head of vocation. Mahatma Gandhi also highlighted the relevance of rural transformation for the development of the nation in real sense. India cannot emerge as a developed economy without its rural upliftment. Electronic Revolution (or it should be termed as Digital Kranti / e-Kranti) with the intensive usage of Information and Communication Technology (ICT) has become a key factor for rural transformation in modern times is Development of Infrastructure and thus it facilitates the rural transformation.

- **Governance**

Inclusive Growth from integration to governance is a particularly **challenging task**, since it is a complex and often ill-defined concept, many **of which** are often **controversial**. There are several **comprehensive** good governance **indexes that can** be used to **measure the** progress of inclusive growth **in governance**. But due to giant disagreements stay on a way to outline exact governance, using such composite indices is not always encouraged without a thorough, vital assessment and experimental utility to international locations in Asia and the Pacific.

- **Agriculture Development**

Inclusive growth approach relating to agriculture sector in India has got importance during the 11th five year plan and it was considered as one of the most important approach as a critical strategy for development, driving the future growth and sustainability. The **method developed** by the **planning committee** was aimed to achieve faster and more **comprehensive manner of inclusive growth. in Twelfth Plan (2012-13 to 2017-18)**. **Therefore**, agricultural development is an **indispensable part of an** inclusive growth approach. The growth of agriculture and **related** sectors is still a **key factor** in the overall growth performance of **India's economy, because** even after 74 years, **the agricultural sector is still the main pillar of nearly 60% of the rural population. Over the years, agricultural farming in the economy has steadily declined and now more than 18% of GDP.**

- **Financial Inclusion**

Financial inclusion refers to providing financial services including banking and credit services various disadvantaged and low-income groups included **at an affordable cost**. **Therefore**, financial inclusion is **critical to India's** inclusive growth, as nearly 21.9% of **the** population lives below **the** poverty **line**.

Inclusive finance is one **of the** measures **that can** provide **appropriate** solutions to the **serious** problems of poverty and unemployment of target groups. India is one of the largest and fastest-growing economies **in** the world, but **there is** no uniformity in terms of **growth**. Lot of disparities in distribution of developmental benefits to certain sectors of the economy. **As a result**, the need for inclusive growth is **reflected** in India's economic development **prospects**. Financial inclusion is **important for achieving** the goal of inclusive growth through access **to**, generation and mobilization **of resources**. **Therefore**, it plays a very **important** role in the process of economic growth and is used as **a tool to achieve** inclusive growth in Indian States.

- **Reducing Regional Disparities**

The government must build an enabling atmosphere in which economic opportunities are expanded and household revenue, spending, and savings are influenced. The adequate infrastructure should be provided to offer a job and growth opportunities. The disparities in aggregate productivity and growth results in differences in living standards. A country should facilitate the good infrastructure to have transportation facility for connecting various regions to attract more companies and workers. Hence the country has to focus more on infrastructural investment to link between and within cities. Therefore, can improve local business through spending more on research and development and increased support for investment and skills. It encourages the more decentralization to cover larger parts of the country and involves greater transfer of powers and responsibilities at the local level. Rural-to-urban and small-town-to-metro city migration are becoming increasingly common. As a result, cities in high-income states are under more pressure to create jobs and build infrastructure. Low-income countries are also under pressure to provide an enabling atmosphere for their citizens by building infrastructure and thereby generating job opportunities. In this regard, the government could look into public-private partnership programs, or it could focus on attracting FDI through well-targeted measures involving both the state and the federal government.

- **Environmental Protection**

The Environmental Performance Index (EPI) of Yale University ranked us 177th out of 180 countries in 2018, based on 24 performance metrics spanning ten problem categories covering environmental health and ecosystem vitality. According to the World Health Organization, Delhi has the worst air quality in the world. As a result, there should be a strong focus on the importance of natural resources and the environment in eradicating poverty through job creation while also ensuring inclusive and long-term economic development. After fulfilling basic needs like a food, cloth and shelter the next is the environmental quality comes into consideration. So countries should have to focus more on economic growth initially even if it comes at the expenses of environmental quality and as country grows financially then it should spend more on pollution cleaning. Hence, the governments should enact and enforce the rules and regulations strictly towards pollution control. Now in India more employment opportunities and hence allowed to emerge from poverty. India has made the remarkable growth recently but environment degrading has happened to a greater extent and hence growing scarcity of natural resources.

- **Educational Inclusion**

India has made a considerable progress in improving access to education. Education system be accompanying by qualitative improvements. Inequality in education is pronounced across India and has implications for social cohesion and growth. OECD as well as National data confirms the accumulation of sources of inequalities that prevent a large share of India's population from developing the skills needed to fully participate in society and contribute to the economy. The economic development can create significant employment opportunities for the youth and ensures the new jobs in the knowledge intensive organizations. Institutions should produce the highly qualified population as output. The government should provide vocational training opportunities to ensure graduates skill useful and bringing knowledge about the current work environment in addition to general know how.

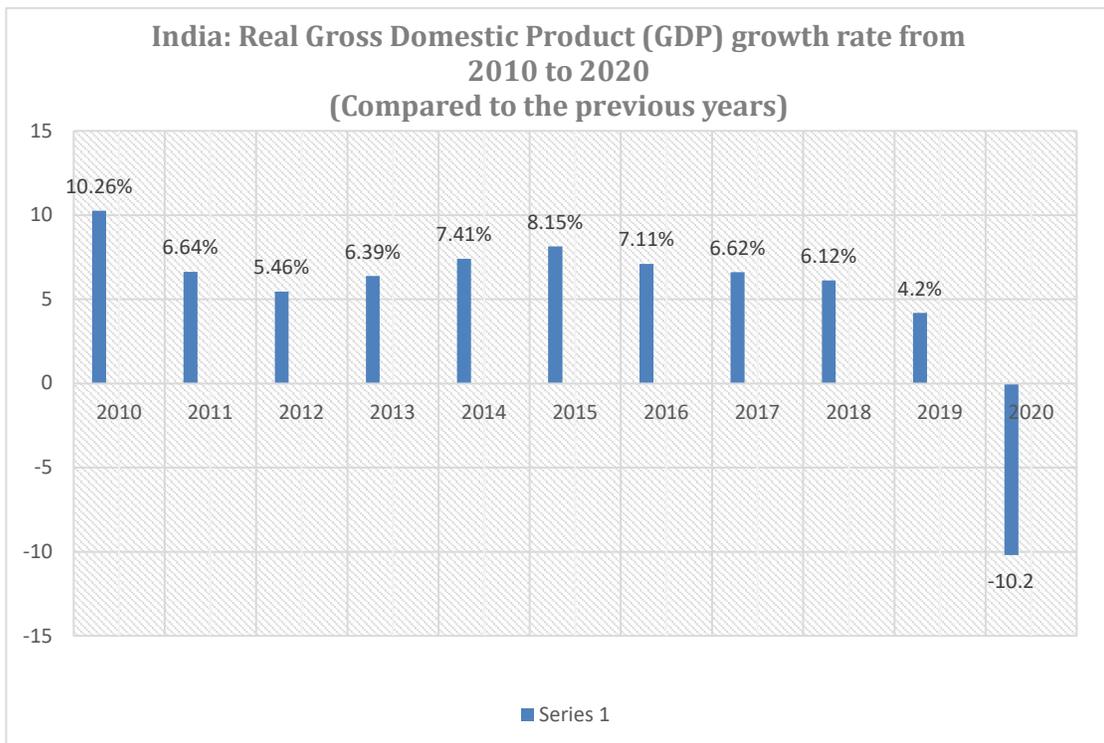
- **Better Health Care**

Healthcare has now evolved into a vital leverage point where government intervention can have the greatest effect. The country's health-care system has a major effect. It will have an effect not only on people and their quality of life, but also on a country's ability to develop and expand economically. India is in dire straits when it comes to health care, owing to a lack of facilities and dwindling resources. Even today India's healthcare infrastructure metrics is lowest amongst in the world. According to World Health Organization statistics from 2018, India spends 1.16 percent of GDP on health, ranking 187th out of 194 countries. The amount of money spent on healthcare is insufficient. Simple healthcare needs are difficult to address unless a country spends at least 5-6 percent of its GDP on health, according to global evidence. Even small countries now invest more than this, so India will have to put in more effort.

- **Development of Infrastructure**

Infrastructure as a platform for economic growth and social development to build the communities for tomorrow. The infrastructural problems make movement from rural to urban due to bad roads, traffic congestion, unreliable and crowded public transport, erratic supply of electricity and water. The lack of access to basic facilities like healthcare, education, banking facilities, internet and mobile connectivity will also make public to move from rural to urban. The most common problem for the Indian infrastructure projects is lack of anticipation of future needs and capacity. Hence the implementation of projects is effective public private partnerships and these partnership helps both government and companies in sharing cost, risk and reward through ensuring funds available for construction and maintenance.

GDP growth is better understood as a top-line indicator of national economic efficiency, in the sense that it is a means (albeit a critical one) to the bottom-line societal measure of success: broad-based improvement in living standards. The revenue–Gross Domestic Product Ratio is a primary indicator of a government's ability to raise funds from domestic sources. Governments will be unable to carry out many of the functions implied by the recommended programs to foster inclusive growth without a substantial resource base. Furthermore, the public investment–Gross Domestic Product ratio is critical because it indicates governments' ability and willingness to invest in development. Many low-income or lower-middle-income countries in Asia and the Pacific need increased public spending to fund the infrastructure needed to provide basic economic and social services.



Source: CSO

Inclusive Growth Index

The World Economic Forum's Inclusive Development Index (IDI-2018) has India ranked 62nd among
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emerging economies (WEF). Among the 74 emerging economies, India ranks well behind China (26th) and Pakistan (47th). This index considers living standards, environmental sustainability, and future generation security. The details of inclusive growth index have been shown below as:



Inclusive Development Index. PTI GRAPHICS

Conclusion

One of the main agenda of India is moving our pride India to Inclusive India. We must achieve the Inclusive growth to minimize poverty and other forms of social and economic disparity, as well as to keep economic growth going. The Planning Commission has made sustainable development a goal in the Eleventh Five Year Plan in this regard (2007-2012). Some of the obstacles to focusing on inclusive growth are mentioned in the overview of the twelfth five-year plan (2012-2017). These include job creation, increased growth potential, infrastructure development, improved healthcare, improved access to quality education, rural transformation, and continued agricultural growth. India is one of the largest and fastest growing economies of the world, the problem in our country is uneven distribution of wealth and as well as the benefits of development will not reach properly the all segments of the society. Hence, this is the major drawback for the nation, even though country is fastest growing economically. The country has no uniformity in its growth performance and there is no connection with regard to distribution of growth benefits specially for particular sector of the society. Thus, the need for inclusive growth comes in the picture of Indian economic development. However, for attaining the objectives of inclusive growth there is a need for good governance, rural transformation, development of

infrastructure, better health care, educational inclusion, environmental protection, reducing regional disparities, financial inclusion and agricultural developments.

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Effectiveness of the Lifeline Thrown to MSMEs during the Covid-19 Phase

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Abstract: The Covid-19 pandemic has wreaked havoc on sectors like primary, secondary, tertiary, startup ecosystems, and micro, small and medium enterprises (MSMEs). The collateral damage has followed promptly – the pandemic-induced lockdown has brought the economy to a screeching halt; unemployment rate has risen to 20 percent plus levels; one out of every three MSMEs believes that recovery is beyond them. On its part, the government of India initially came out with an INR 3,00,000 crore stimulus package called the “Emergency Credit Line Guarantee Scheme (ECLGS)” for the MSMEs. The package has since been revised twice and is now a segment of the comprehensive INR 2.65 lakh crore Atmanirbhar Bharat 3.0 package. To ascertain the implications of the package, the researcher interacted with two major categories of respondents, namely, MSME experts and MSME borrowers. The interaction led the researcher to infer that the package has not factored in the unorganised MSMEs that are outside the formal financial system. But this fact should not detract from the valuable contribution they make to the local economy and the national economy. Some bespoke financial instruments must be devised to finance these MSMEs at least during a crisis of this nature and magnitude. Further, denying the incremental loan to SMA-1 and SMA-2 MSMEs under ECLGS at this critical juncture goes against the objectives underlying the scheme. SMA-1 and SMA-2 MSMEs have been in operation for quite some time and owing to reasons beyond their control, may have defaulted to the lending institutions. The Government of India should extend salary support to MSMEs by dipping into the idle corpus of the *Employees State Insurance Corporation*. The latter is sitting on cash reserves of at least INR 80,000 crores. This corpus can be drawn upon to help the MSMEs settle at least two months’ salary bills of their employees.

Keywords: Bespoke; Corpus; Collateral; Detract; Factor; Havoc; Pandemic; Screeching.

1. Theoretical background

The Covid-19 pandemic has inflicted heavy losses on sectors like primary, secondary, tertiary, startup ecosystems, and micro, small and medium enterprises (MSMEs). Experts believe that the unemployment rate has risen to 20 percent plus levels, during the various phases of lockdown (Nag, 2020). From a June 2020 survey covering 46,000 MSMEs, the All-India Manufacturers Association inferred that one out of every three MSMEs believed that recovery was beyond them (Saluja, 2020). On its part, the GOI initially came out with an INR3,00,000 crore stimulus package called the Emergency Credit Line Guarantee

Scheme (ECLGS) for the MSMEs. The package has since been revised twice and its scope has been widened to cover 27 other sectors. The package is now a segment of the comprehensive INR 2.65 lakh crore Atmanirbhar Bharat 3.0 package (Business Standard, 2020).

2. Review of Literature

The following paragraphs include a synopsis of previous research on the problem as well as key findings on the theme under investigation. The review summarises the existing state of investigational awareness. It highlights areas that have been investigated, discusses the research gaps, and describes how the current study attempts to fill those gaps. In short, the intention is to “locate the present research in the existing body of research on the subject and to point out what it contributes to the subject” (Krishnaswami, Ranganatham, & Harikumar, 2016).

In May 2020, the Centre announced a massive INR 20 lakh-crore economic stimulus package. It was welcomed by the Covid-ravaged economy of the country. The pandemic had begun to peak (PTI, 2020). To better understand the implications of the package, a Pune businessman Mr Prafull Sarda filed a query under the RTI Act. The government informed him that under the *Atmanirbhar Bharat Abhiyaan*, an Emergency Credit Line Guarantee Scheme (ECLGS) had been introduced. It would be open until October 31 or until the INR 3-lakh-crore was fully released, whichever happened earlier. Of the sanctioned INR 3 lakh-crore through the ECLGS, the government had disbursed around INR 1.20 lakh-crore as loans to various states. It worked out to approximately INR 8 per head of the 130-crore Indian population, remarked Mr Sarda tongue in cheek. One is led to believe that it was not a flippant remark either.

2.1. The Government of India (GoI) has extended the *Emergency Credit Line Guarantee Scheme* (the scheme) until March 31, 2021 as part of the Aatma Nirbhar Bharat reforms. It added 26 stressed sectors, including the healthcare sector, to the list of beneficiaries (Arvind, 2020). The scheme, a lifeline thrown by the Government of India to the qualifying pandemic-struck economic units, provides cent per cent guarantee to banks and NBFCs so they can provide an emergency working capital credit line to the units. GoI allocated a corpus of INR three lakh crores for the purpose. As of November 12, 2020, INR 2.05 lakh crores of loans had been sanctioned to 61 lakh borrowers. The scheme comes with a pre-approved credit of 20 percent of the borrower’s total outstanding credit, subject to a cap of INR 50 crores as of February 20, 2020. Additionally, the annual turnover is subject to a cap of INR 250 crore in financial year 2019-20 (PTI, 2020). These credit facilities are available without any additional collateral. The loan would have a four-

year term beginning on the date of disbursement, with a one-year moratorium. Doctors, chartered accountants, lawyers, etc are also eligible for the loan for professional purposes.

2.2. A Dun & Bradstreet report looked at the extent of the Covid-19 impact on 14 sectors of the economy (economictimes.indiatimes.com, 2020). It found the impact on the MSME sector to be rather severe. It looked at how the pandemic had affected consumption and production activities. Until at least May 2020, MSMEs had borne the brunt of supply chain disruptions, raw material scarcity, migrant labour shortages, and transportation restrictions. Export orders did not materialise. Cash flow disruptions, a lack of working capital, and delayed debtor realisation had hampered the MSMEs' pitch. In terms of cash reserves, access to technology, and willingness to adapt to the new normal, MSMEs were less resilient than large companies in surviving the crisis. MSMEs' debt burden had also increased.

The learned researchers have clearly brought out the circumstances leading to the present plight of the MSME sector. On its part, the government of India (GoI) came out with certain stimulus packages to address the grievances faced by the MSME sector and a few other pandemic-sensitive sectors of the economy. A review of the stimulus packages would have complemented the valuable contribution of the learned researchers. Hence the present study seeks to bridge this gap.

The relief package is being implemented with all seriousness by all the stakeholders, the MSME units, their banks or NBFCs and the GoI. The latest version of the ECLGS has been a sharp improvement over the previous versions. Yet a few glitches come to the fore every now and then. Hence it is time one examined the implications of the latest version of the stimulus package. The study is linked with the two major stake-holder categories associated with the MSME sector, namely MSME borrowers and MSME experts.

The objective of the study is to analyse the implications of the Stimulus Package 3.0 for the micro, small and medium enterprises (MSME) sector. The following hypothesis is being proposed to be tested in this study:

“Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme”.

3. Data and Methodology

The study is descriptive in nature since it is a ‘fact-finding’ investigation, aided by adequate interpretation. It focuses on certain aspects of the stated problem that can be expressed unequivocally. It gathers descriptive information. The study is also analytical to an extent since it tests hypotheses and specifies and interprets relationships. Unlike a

descriptive study, it employs advanced statistical techniques like chi-square test (Krishnaswami, Ranganatham, & Harikumar, 2016).

3.1. Sources of Data

Data required for the research has been collected from primary and secondary sources. Primary data has been collected from MSME borrowers, numbering 50 and MSME experts, numbering 50.

3.2. Sampling plan

The researcher employed the non-probability sampling technique owing to non-availability of some population elements for collection of data, etc. The study seeks to feel the range of conditions or the nature of the phenomenon. Time constraints and the time limit for completing the study precluded the application of the probability sampling technique. Under the non-probability sampling technique, the researcher chose the purposive or judgement sampling method since it guarantees the inclusion of all the relevant elements in the sample. Probability sampling plans cannot give such a guarantee (Krishnaswami, Ranganatham, & Harikumar, 2016). The researcher settled for two categories of respondents, namely, MSME borrowers, numbering 50 and MSME experts, numbering 50.

3.3. Data collection instruments

Interview schedules were designed and pre-tested specifically for the purpose of identifying the instrument's potential flaws. Upon receipt of feedback, they were appropriately revised and finalised, for administering to respondents in order to obtain primary data.

3.4. Methodology

3.4.1. Data processing and analysis plan

The data collected was tabulated, interpreted, and statistically analysed. The researcher used Microsoft's spreadsheet programme, namely, MS-Excel 365 for data analysis, reporting and deployment.

3.4.2. Implications of the Emergency Credit Line Guarantee Scheme (ECLGS)

With the implementation of the Emergency Credit Line Guarantee Scheme (ECLGS) as lately amended by Atmanirbhar Bharat 3.0 having been underway, the researcher viewed to know from the respondents, the implications of the ECLGS for the MSMEs. Their replies to the query appear in Table 1.

Table 1: Implications of the Emergency Credit Line Guarantee Scheme (ECLGS)

Implications	Number of respondents
Bespoke financial instruments must be designed to help the MSMEs that remain out of the formal finance system even if they do not pay GST	45
The collateral-free loan does not help a big chunk of the MSME sector because it remains out of the formal finance system	44
Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme.	41
Government should extend salary support to MSMEs by dipping into the idle corpus of the Employees State Insurance Corporation.	40
A one-time restructuring of loans of the critical sectors of the economy should be allowed since the pandemic has ravaged their financial health	37

Bespoke financial instruments must be designed to help the MSMEs that remain out of the formal finance system even if they do not pay GST, aver 45 respondents. The collateral-free loan does not help a big chunk of the MSME sector because it remains out of the formal finance system, argue 44 respondents. Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme, remark 41 respondents. Government should extend salary support to MSMEs by dipping into the idle corpus of the Employees State Insurance Corporation, assert 40 respondents. A one-time restructuring of loans of the critical sectors of the economy should be allowed since the pandemic has ravaged their financial health, suggest 37 respondents.

3.4.3. Implications of the Emergency Credit Line Guarantee Scheme (ECLGS)

With the implementation of the Emergency Credit Line Guarantee Scheme (ECLGS) as lately amended by Atmanirbhar Bharat 3.0 having been underway, the researcher sought to know from the respondents, the implications of the ECLGS for the MSMEs. Their replies to the query appear in Table 2.

The collateral-free loan does not help a big chunk of the MSME sector because it remains out of the formal finance system, argue 47 respondents. Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme, remark 47 respondents. A one-time restructuring of loans of the critical sectors of the economy should be allowed since the pandemic has ravaged their financial health, suggest 45 respondents. Government should extend salary support to MSMEs by

dipping into the idle corpus of the Employees State Insurance Corporation, alleged 44 respondents.

Table 2: Implications of the Emergency Credit Line Guarantee Scheme (ECLGS)

Implications	Number of respondents
The collateral-free loan does not help a big chunk of the MSME sector because it remains out of the formal finance system	47
Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme.	47
A one-time restructuring of loans of the critical sectors of the economy should be allowed since the pandemic has ravaged their financial health	45
Government should extend salary support to MSMEs by dipping into the idle corpus of the Employees State Insurance Corporation.	44

4. Conclusions and Recommendations

Conclusions are inferences (generalisations) drawn from the findings and relate to hypotheses. They are answers to the research questions or the statements of acceptance or rejection of hypotheses. As explained already, this study proposes to test the following hypothesis:

“Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme”.

Hence H_0 and H_1 are as follows:

H_0 : Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture does not go against the objectives underlying the scheme.

H_1 : Denying the incremental loan to SMA-1 and SMA-2 MSMEs at this critical juncture goes against the objectives underlying the scheme.

A chi-square test was used to determine the relationship, if any, between the variables based on the primary data obtained from the respondents vide Tables 1 and 2. The computation was done in MS-Excel, as shown in table 3.

The calculated value of χ^2 is 3.4091, lower than the table value of 3.8415 for an alpha of 0.05 at one degree of freedom. Hence the null hypothesis is not rejected, and the research hypothesis is rejected. $p=0.0648$ is the inverse of the one-tailed probability of the chi-squared distribution.

Table 3: Test Results

		Observed Values		
Category		Yes	No	Total
	MSME experts	41	9	50
	MSME borrowers	47	3	50
	<i>Total</i>	88	12	100
		Expected Values		
Category		Yes	No	Total
	MSME experts	44	6	50
	MSME borrowers	44	6	50
	<i>Total</i>	88	12	100
		Yes	No	
	o-e	-3.0000	3.0000	
2		3.0000	-3.0000	
	(o-e) ²	9.0000	9.0000	
		9.0000	9.0000	
	((o-e) ²)/e	0.2045	1.5000	
		0.2045	1.5000	
	<i>CV</i>	0.4091	3.0000	3.4091
	<i>TV</i>			3.8415
	<i>p</i>			0.0648

In India, many MSMEs remain out of the formal finance system for a variety of reasons. Most of them have not registered themselves under the GST regime. But this should not detract from the valuable contribution they make to the local economy and the national economy. They mostly operate from rural pockets, employ locally available unskilled labourers, and exploit indigenous technology and expertise. However, it is difficult for the government and banks to help them even during a crisis since their operations are not documented. In the circumstances, some bespoke financial instruments must be devised to finance these MSMEs at least during a crisis. After all, banks do extend clean loans and / or consumption loans and this experience should stand them in good stead while financing these informal or unorganised MSMEs.

Denying the incremental loan to SMA-1 and SMA-2 MSMEs under ECLGS at this critical juncture goes against the objectives underlying the scheme. SMA-1 and SMA-2 MSMEs have been in operation for some time and owing to various reasons, genuine or dubious, may have defaulted. In the circumstances, the genuine defaulters should be rescued under the ECLGs. Government should extend salary support to MSMEs by dipping into the idle corpus of the Employees State Insurance Corporation. The latter is sitting on cash reserves of at least INR 80,000 crores. This corpus can be drawn upon to help the MSMEs

settle at least two months' salary bills of their employees. A one-time restructuring of loans of the critical sectors of the economy should be allowed since the pandemic has ravaged their financial health. After all, desperate times call for desperate measures and hence such measures can be easily justified.

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ENSURING THE SUCCESS OF GREEN BANKING PRACTICES OF BANKS

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ABSTRACT

The green banking practices followed by the country's banks manifest themselves in various formats like online banking, mobile banking, internet banking, green channel counters, e-statements, green loans, and solar ATMs. Across the country, the adoption of green banking practices by the banks, has succeeded in patches, much like the curate's egg. But the green banking practices must succeed in the interest of the welfare of all the stakeholders – not just the customers of banks or the banks themselves. Natural resources cannot be allowed to deplete rapidly give that posterity too has a claim over them. In the circumstances, banks must put in place the right strategy to succeed in the green banking practices space. Towards this end, the researcher interacted with two major stakeholder categories associated with the issue, namely, bank officers and experts in the green banking practices space. An analysis of the primary data collected from them and the outcome of the interactions held with them led the researcher to draw some valuable inferences. Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high. Banks should reckon the social implications of investing in green banking practices since the practices may not cut ice with certain segments of the customers. The green banking practices of the banks should pervade their operations, services, and technology functions. Being the leading financiers of economic activity in the country, banks have their task cut out -- in their own green banking practices space, to begin with. They should eventually prevail on their constituents, to go green in their practices and other functions as well.

Key words: constituents; curate's egg; green banking; social implications; stakeholders

1.1 Theoretical background of the topic

Going green is no longer a buzz phrase. It is much more than that. Climate change, natural calamities, carbon emissions, etc have been wreaking havoc across the globe. Governments find themselves helpless since all the resources at their command, financial as well as others, have not helped in bringing the situation under control. A closer look however reveals that mankind has misused and abused nature for selfish interests and is paying the price for it. As a result, a depleted Mother Nature has begun to vent its rage and despair on mankind. It is time mankind attempted to placate Mother Nature with the right remedial measures.

1.2 Review of literature

The following paragraphs briefly review the previous studies on the problem and the significant findings on the topic being researched. The review summarises the current state of knowledge in investigation. It highlights aspects that have been investigated, identifies the research gaps that emerge and explains how the present study tries to bridge that gap. In short, the intention is to "locate the present research in the existing body of research on the subject and to point out what it contributes to the subject" (Krishnaswami, Ranganatham, & Harikumar, 2016).

Saikumari, Sunitha and Nandini point out that green banking differs from traditional banking in that it seeks to promote customer friendly and environment friendly banking (Saikumari, Sunitha, & Nandini, 2020). It conceptualises the environment and the social factors of investing. Green banking helps to minimise internal and external carbon footprints. It helps to minimise the use of paper at the workplace by promoting online banking. It seeks to initiate sustainable development and promote green banking practices overall. The researchers aver that green banking seeks to safeguard the environment, raise environmental awareness, install an environment-friendly system, trigger sustainable development, put in place the requisite ecological measures that focus on economic growth and development. "Green" technologies have paved the way for the introduction of green banking. The practice of green banking in India manifests itself in online banking, mobile banking, internet banking, green channel counters, e-

statements, green loans, solar ATMs, etc. The main goal of green banking is to save the customer's time and cost. It embraces sustainability, ethical lending, conservation, and energy efficiency.

Green banking entails combining technologies, operational improvements and changing customer habits in the banking space (FINTRAKK, 2020). Green banking is environment friendly. It can help banks reduce their costs and lead them to clock superior efficiencies in their activities. It is not as if the Indian banks are polluters but normally, they do share a banking relationship with certain investors or corporates. Such investors or corporates could be polluters or could become polluters in the future. By lending to such enterprises, banks, in their own way, contribute to ecological footprint directly and / or indirectly. Online banking is the easiest way for banks to go green and help preserve the environment, as a result. This is also called virtual banking or internet banking or mobile banking or e-banking. Online banking constitutes an electronic payment system wherein other financial institutions or customers of a bank conduct a range of financial transactions through the banks' website. Green banking minimises paperwork, thus sparing the trees that would have been felled to manufacture the paper used by the banks and their customers. Banks also issue account-opening forms to customers online.

Ashima points out that in India, environmental accounting is at a nascent stage (Ashima, 2018). To appreciate the relevance of nature and environment to economic development, an environmental accounting system has been devised, states the researcher. The system provides information that delineates the relevance of natural resources to the economic well-being of the world. It also delineates the financial burden and loss of wealth that environmental pollution can wreak on the world. Businesses and mankind should develop a focused environmental policy that can control pollution and ensure compliance with the regulatory regime.

“Go Green” is the need of the hour to arrest the proliferation of environmental issues across the globe (Shanu, 2016). Governments, financial and non-financial organizations and corporate and other sectors are working towards the construction of a sustainable and balanced economy. The banking sector plays a critical role in the economic development of any nation. It can lead by example and contribute significantly to the growth of a greener and healthier environment. Green banking encompasses all the initiatives taken by banks in their operations, in their services, and in their technology adoption. The researchers emphasise the need for banks to go green. They reveal the strategic roles they can play in growing a carbon-free economy. They cite the factors that hobble the implementation of green banking initiatives, especially in India. They use a SWOT matrix to drive their point home. They highlight the practices followed by some top Indian banks from the public and private sectors, to ring in the requisite change. Banks, through their operating and lending policies, can prevail on retail as well as corporate customers to play an active role in the growth of the country's economy.

Green banks are into green banking practices. Green banks are mission-driven banks or financial institutions. They use innovative financing tools to rev up their transition to clean energy, as part of their strategy to fight climate change (Coalition for Green Capital, 2020). Although mission-driven, all green banks seek to achieve additional objectives. Among the additional objectives are raising the resilience and / or catering to the needs of, the low-income groups. However, it is to be noted that green banks use financing and not grants for the purpose. Financing warrants that capital is eventually repaid to the bank by the borrower. Such repayment helps the banks to maximize the impact of each rupee they lend. Given this backdrop, green banks cater to markets where the potential for payback is high! Put differently, proven, financially and technically viable projects easily qualify for green bank financing. Banks can take up financing jointly with other market development activities.

1.3 Research gap

The learned researchers have brought out the relevant facts tellingly. However, the identification of the contextual strategies needed to succeed in the green banking practices space would have complemented their otherwise valuable study. It is this gap the present study seeks to bridge.

1.4 Statement of the problem

The remedial measures involve going green wherever possible and the responsibility should be shared by all – not just the people. Trade, industry, and service providers should chip in too. They are among the major polluters of the environment. Banks should chip in by resorting to green practices since millions of transactions are processed by them every day across the globe. This should help the banks to “green” their banking activities in toto.

1.5 Scope of the study

The study confines itself to the two major stake-holder categories associated with the green banking practices of banks, namely bank officers and experts in the green banking practices of banks.

1.6 Objective of the study

The objective of the study is to identify strategies that could help the banks succeed in the green banking practices space.

1.7 Hypothesis proposed to be tested

The study proposes to test the following hypothesis:

“Banks need to ensure that their green banking practices focus on markets where the potential for payback is high”

1.8 Research design

The following paragraphs explain how the research is designed.

1.8.1 Research methodology

The study is descriptive in nature since it is a ‘fact-finding’ investigation, aided by adequate interpretation. It focuses on certain aspects of the stated problem that can be expressed unequivocally. It gathers descriptive information. The study is also analytical to an extent since it tests hypotheses and specifies and interprets relationships. Unlike a descriptive study, it employs advanced statistical techniques like chi-square test (Krishnaswami, Ranganatham, & Harikumar, 2016).

1.8.2 Sources of data

Data required for the research has been collected from primary and secondary sources. Primary data has been collected from bank officers (numbering 50) and experts in the green banking practices space of banks (numbering 50).

1.8.3 Sampling plan

The researcher employed the non-probability sampling technique owing to non-availability of some population elements for collection of data, etc. The study seeks to feel the range of conditions or the nature of the phenomenon. Time constraints and the time limit for completing the study precluded the application of the probability sampling technique. Under this technique, the researcher chose the purposive or judgement sampling method since it guarantees the inclusion of all the relevant elements in the sample. Probability sampling plans cannot give such a guarantee (Krishnaswami, Ranganatham, & Harikumar, 2016). The researcher settled for two categories of respondents, namely, bank officers (numbering 50) and experts in the green banking practices of banks space (numbering 50) eventually.

1.8.4 Data collection instruments

Interview schedules, specially designed for the purpose, were drafted and pre-tested to identify the possible weaknesses in the instrument. Upon receipt of feedback, they were appropriately revised and finalised, for administration to the respondents for collection of primary data.

1.8.5 Data processing and analysis plan

The data collected was tabulated, interpreted, and statistically analysed. The researcher used Microsoft’s spreadsheet programme, namely, MS-Excel 365 for data analysis, reporting and deployment.

1.8.6 Limitations of the study

Primary data has at times been deduced by engaging with the respondents on the subject. It is possible that a certain degree of subjectivity, albeit negligible, has found its way in. But the researcher is convinced that it will not affect the accuracy of the findings of the study.

1.9 Analysis of primary data collected from the 50 bank officers

In the following paragraphs, the primary data collected from the 50 bank officer respondents is analysed.

1.9.1 Strategies to succeed in the green banking practices space

One school of thought holds that, to begin with, banks should strategize to succeed in the green banking practices space. Hence the researcher requested the respondents to identify strategies that could help the banks succeed in the green banking practices space. Their replies to the query appear in the following Table.

Table-1

Strategies to succeed in the green banking practices space

Strategy	Number of respondents
Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high	42
Given the need to preserve the environment, banks should committedly adhere to green banking practices.	41
Banks should reckon the social implications of investing in the green banking practices.	38
Banks should ensure that their green banking practices do not crimp the services they provide to low-income groups.	31
Banks should ensure that their green banking practices lead them to finance proven, financially, and technically viable green projects.	29

Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high, maintain 42 respondents. Given the need to preserve the environment, banks should committedly adhere to green banking practices, assert 41 respondents. Banks should reckon the social implications of investing in green banking practices, believe 38 respondents. Banks should ensure that their green banking practices do not crimp the services they provide to low-income groups, according to 31 respondents. Banks should ensure that their green banking practices lead them to finance proven, financially, and technically viable green projects, aver 29 respondents.

1.10 Analysis of primary data collected from the 50 experts in the green banking practices of banks

In the following paragraphs, the primary data collected from the 50 experts in the green banking practices of banks is analysed.

1.10.1 Strategies to succeed in the green banking practices space

One school of thought holds that, to begin with, banks should strategize to succeed in the green banking practices space. Hence the researcher requested the respondents to identify the strategies that could help the banks succeed in the green banking practices space. Their replies to the query appear in the following Table.

Table-2

Strategies to succeed in the green banking practices space

Strategy	Number of respondents
Green banking practices should pervade the operations, services, and technology functions of banks.	46
Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high!	46
Banks should reckon the environmental implications of investing in green banking practices.	45
Given the need to preserve the environment, banks should committedly adhere to green banking practices .	44
Banks should reckon the social implications of investing in green banking practices.	43
Banks should ensure that their green banking practices do not crimp the services they provide to low-income groups.	43
Banks should ensure that their green banking practices lead them to finance proven, financially, and technically viable green projects.	40

Green banking practices should pervade the operations, services, and technology functions of banks, maintain 46 respondents. Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high, assert 46 respondents. Banks should reckon the environmental implications of investing in green banking practices, argue 45 respondents. Given the need to preserve the environment, banks should committedly adhere to green banking practices, believe 44 respondents. Banks should reckon the social implications of investing in green banking practices, maintain 43 respondents. Banks should ensure that their green banking practices do not crimp the services they provide to low-income groups, assert 43 respondents. Banks should ensure that their green banking practices lead them to finance proven, financially, and technically viable green projects, aver 40 respondents.

1.11 Summary of findings

In the following paragraphs, a summarised version of the findings arrived at, by analysing the primary data furnished by respondents, is furnished:

1.11.1 Bank officers

Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high, maintain 42 respondents. Given the need to preserve the environment, banks should committedly adhere to green banking practices, assert 41 respondents. Banks should reckon the social implications of investing in green banking practices, believe 38 respondents. Banks should ensure that their green banking practices do not crimp the services they provide to low-income groups, according to 31 respondents. Banks should ensure that their green banking practices lead them to finance proven, financially, and technically viable green projects, aver 29 respondents.

1.11.2 Experts in the green banking practices of banks

Green banking practices should pervade the operations, services, and technology functions of banks, maintain 46 respondents. Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high, assert 46 respondents. Banks should reckon the environmental implications of investing in green banking practices, argue 45 respondents. Given the need to preserve the environment, banks should committedly adhere to green banking practices, believe 44 respondents. Banks should reckon the social implications of investing in green banking practices, maintain 43 respondents. Banks should ensure that their green banking practices do not crimp the services they provide to low-income groups, assert 43 respondents. Banks should ensure that their green banking practices lead them to finance proven, financially, and technically viable green projects, aver 40 respondents.

1.12 Conclusions

Conclusions are inferences / generalisations drawn from the findings and relate to hypotheses. They are answers to the research questions or the statements of acceptance or rejection of hypotheses.

As explained already, this study proposes to test the following hypothesis:

“Banks need to ensure that their green banking practices focus on markets where the potential for payback is high”

Hence H_0 and H_1 are as follows:

H_0 : Banks do not need to ensure that their green banking practices focus on markets where the potential for payback is high

H_1 : Banks need to ensure that their green banking practices focus on markets where the potential for payback is high

Based on the primary data collected from the respondents, vide Tables: 1 and 2, a chi-square test was applied to ascertain the association, if any, between the variables. The following Table reveals the computation made using MS-Excel.

		Observed Values		
Category		Yes	No	Total
Bank officers		42	8	50
Experts		46	4	50
Total		88	12	100
		Expected Values		
Category		Yes	No	Total
Bank officers		44	6	50
Experts		44	6	50
Total		88	12	100
		Yes	No	
2	o-e	-2.0000	2.0000	
		2.0000	-2.0000	
		4.0000	4.0000	
		4.0000	4.0000	
		$((o-e)^2)/e$	0.0909	0.6667
		0.0909	0.6667	
CV		0.1818	1.3333	1.5152
TV				3.8415
p				0.8240

The calculated value of χ^2 is 1.5152, lower than the table value of 3.8415 for an alpha of 0.05 at one degree of freedom. Hence the null hypothesis is not rejected, and the research hypothesis is rejected. $p=0.8240$ is the inverse of the one-tailed probability of the chi-squared distribution.

1.13 Recommendations

The following are the researcher's recommendations in the light of the findings arrive at: Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high. But unless and until the money lent is recovered and re-disbursed or recycled, to be more precise, the pace and amount of credit disbursement will come to a screeching halt. Hence, even as they focus on the pursuit of green banking through green banking practices, banks should ensure that recycling of credit does not come to a halt for whatever reason. This is essential to rev up the progress made in the green movement space since banks, being credit multipliers, can raise the supply of money in the economy and thereby contribute to the growth of the economy.

Environment must be preserved, come what may. Ironically, mankind exploits externalities like air and water with impunity, although posterity enjoys a claim over them. One cannot take such resources for granted since they do not accrue to mankind rightfully and automatically. Their depletion carries a heavy penalty. The misuse and abuse of these externalities is the last thing mankind can afford. On their part, banks should demonstrate their commitment to the green banking practices space by adhering to it committedly. In the process, they will have prevailed on their constituents to follow suit.

Banks should reckon the social implications of investing in green banking practices since the practices may not cut ice with certain segments of the customers, namely, the inadequately-informed customers. It takes time for the latter to acquiesce in the green banking practices-led green banking. Hence banks should proceed cautiously in applying the green banking practices in so far as they relate to their dealings with the said segment of customers. The basket of services the banks provide to the said customer segments should not be skimmed in the process.

The green banking practices of the banks should pervade their operations, services, and technology functions. Otherwise, the outcome may not be along expected lines.

Banks should ensure that their green banking practices lead them to finance financially and technically viable green projects since the money lent will come back to them with interest. They cannot recycle the recovered principal and interest to finance the new green projects otherwise.

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EVOLVING ROLE OF HR ANALYTICS FOR SUCCESS OF BUSINESS –A CONCEPTUAL
UNDERSTANDING

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ABSTRACT

The humanresources management is currently being dramatically compressed as a result of the rise of the worldwide workforce and growing importance of commercial analytics is as pertactical organisational competency, among other factors. A systematic identification and ordering of critical themes is still lacking, despite the fact that human resources analytics has remained extensively explored in the works in recent years. There is a specific need for intellectual contributions that attempt to provide a full description of concepts and research of themes linked to human resource analytics. In particular, this paper, we analyse the concept of human resources analytics provided in a large but disjointed body of literature, using aorganised literature review methodology. The improvement of artificial intelligence and reasoning technologies has made it possible to do HR analytics. The essay presents a comprehensive systematisation effort as well as a research schedule for the expansion of more studies in the subject of human resource analytics. With an eye toward practitioners, the research provides insights to aid in the design of new analytics programmes within businesses. As more firms incorporate analytics into their day-to-day HR operations, we will begin to witness a rise in the number of issues and roadblocks that will radically alter or even disrupt the way we now think about human resources. As a result, we encourage additional inquiry and investigation into the enactment of HRA. Due to the fact that there has been extensive experimentalstudyconnecting the progressiveeffect of HR Analytics to organisational efficiency and corporateusefulness, the current study has significant practical relevance.

Keywords – Digital Technologies,Human capitalFramework, Human Resources Analytics, Organizational Effectiveness.

Introduction:

Human resource analytics is known as people analytics, workforce analytics, or ability analytics, is process of gathering, analysing, plus reporting on human resource information. Using it, your organisation may assess the influence variety of human resource KPIs on wholecommercial performance and then make choices based on information obtained. In further words, human resource analytics is data-driven slant to the management of human resources. Human resource analytics is a moderately new instrument. This means that it has remained largely unexplored in scholarly literature to this point. Heuvel and Bondarouk's definition of scientific human resource analytics is the most commonly recognised. Human resource analytics, rendering to them, is the methodicaldocumentation and quantification of the people carters of commercialconclusions in a systematic manner (Heuvel&Bondarouk, 2016).

Human Resource Management has realizedsubstantial transformation throughout the previousera. It has developed from actualitylargelyanworkingcastigation to being more tactical in landscape. The extensiveusage of locutionStrategic Human Resource Management (SHRM), asample of this occurrence. Human resource analytics, is characterised by a data-driven methodology, in line with this growth. We invited Mick Collins, Universal Vice President, Workforce Analytics & Planning Elucidation Strategy and Chief Expert at SAP Achievement Factors, to opportunitydowncast the essence of Human Resource analytics and explain how it effects business performance for us in order to better realize it.

A approach for developing insights into in what waystashesof human capital properties help to attainment of four primary results: (a) engenderingincome, (b) lowering expenditures, (c) controllingthreats and/or (d) achievingtactical goals. According to Collins, who spoke exclusively with HR Technologist, "this is accomplished through the application of statistical methodologies to integrated

human resource, talent management, financial, and operational data." In contrast to popular belief, human resource analytics is focused primarily on the human resources function then is not interchangeable with people analytics or workforce analytics.

Developing a conceptual framework for human resource analytics anything exactly do we mean by the word "human resource analytics"? Generalized analytics denotes to "the process of making judgments through the study of data and the application of systematic reasoning" (Davenport et al., 2010, p. 4). Assigning a human resource (HR) element to the notion means that these studies, data, and systematic perceptives are focused on the individuals who are (in whatsoever way) associated with the organisation. Despite the fact that the very scarce educated fictions on HR analytics are devoid of explicit definitions, they apprise that HR analytics embraces "rigorously tracking HR investments and outcomes" (Ulrich and Dulebohn, 2015, p. 202) and "statistical techniques and experimental approaches can be used to tease out the causal relationship" (Lawler et al., 2004, p. 4) among these Human Resource practises or rules and organisational enactment effects (Ulrich and Duleb). As a result, human resource analytics stands a framework for creating novel visions (Smeyers and Delmotte, 2013). HR analytics is a procedure, not a gadget that generates significant visions at impulse of knob, as implied by this statement.

Essentially, it is the "first and foremost a mental framework, followed by a logistical development, and then a series of statistical operations" (Fitz-enz and Mattox II, 2014, p. 2). The old saying "garbage in, garbage out" holds true: reduced data mixed with excellent analysis will yield little worth, unbiased as a fantastic data fixed will yield little value if the analyses are not rigorous. The same can be said about research questions. If the research question is not appropriate and well-formulated, any perceptions generated from data and analysis will be of little strategic value. Also noteworthy is that producing unique understandings is not the ultimate purpose of HR analytics; rather, the goal is to provide "decision-making support to the management of people in businesses" (KPMG, 2013, p. 4). HR analytics, as described by Smeyers (2013), is the systematic proof of identity and quantification of the people-drivers of occupational results with the goal of building improved results. This definition is based on the discussion above and is based on Smeyers' (2013) definition.

Definition: Employee performance and retention are two important goals of human resource analytics (HR Analytics), is well-defined as the region of analytics that transactions with individuals analysis and smearing analytical progressions to the human capital within an establishment to increase employee concert and preservation.

Using data in HR

The Human Resources (HR) department at an organisation may need the least favourable reputation of all branches in the organisation. The two justifications available for this. First and foremost, the human resources department is similar to a doctor in that you would prefer not to require one. Consider your situation from the opposing side — if invite an employee to come by your office, it's likely that somewhat unpleasant is about to transpire to him or her. It is possible that you will need to reprimand, put on notice, or perhaps terminate your coworker. Good news, such as receiving a promotion, is more likely to come from an employee's immediate boss rather than via HR. Human resource managers must ensure that HR data and actions are aligned with the strategic aims of the firm. Understanding human resource analytics assists HR managers to mark data-driven pronouncements to fascinate, accomplish, and retain people, resulting in increased return on investment for the organisation. It assists human resource managers and leaders in making educated decisions to improve the workplace environment and increase employee productivity. When used properly, it can have a significant impact arranged the bottom line.

HR analytics shape the business

It is reasonable to assume that human resource data analytics has tremendous value for an organisation. These are just a few samples to get you started. Indeed, analytics helps organisations to assess the effect of human resource initiatives on the bottom line. Human resources can forecast the

future of the workforce by utilising extensive statistical analysis. Managers can use this information to determine the financial influence of their Human Resource operations. Other information on the implements that were utilised for these analyses may be found in our outline of the leading HR analytics implements. The "holy grail" of HR data analytics is determining the impact of human resources on bottom-line performance (Lawler III, Levenson & Boudreau, 2004). This is frequently accomplished through the calculation of a Return on Investment (ROI). It is the utmost effective method for human resources to expand its strategic impact.

HR Analytics Drive Business Value

Human resources have admittance to valued employee statistics, and this data can be leveraged to facilitate organisational conversion. There has been an excessive deal of discussion on the importance of recreating the consumer involvement in workplace. Fundamentally, information on consumer behaviour and mentality might be used for generate devices to rise sales by capitalising on individual variables. This is mentioned to as market study. In a similar vein, data that is supportive for the HR occupation can be used to increase employee concert and gratification, and as outcome, to maximise business outcomes.

Collins provides a sample of in what way human resource analytics can be utilised to expand the responsibility of a concern. Using data-driven insights, HR analytics might be used toward monitor reserves in reskilling, same would deliver the accurate competences to support a original business model. Training offerings could be modified in response to sales outcomes, according to the authors.

This is decisive granulese data can not merely impression the lowermost line; it can likewise convert employee engagement in an association. "As such," Collins lingers, "you might think about the 'ROI' of HR analytics being that of increasing the business value derived from using data for talent decisions".



Some of the HR Analytics will help Manager in handling Human Asset which every manager must know are:

It goes without aphorism that employees are benefit and are essential to the achievement of some firm. They are also a source of pride for their employers. I am confident in saying that any company that is able to draw the right incomes, manage capacity acquirement, and employ their properties of potential is on the path to long-term success.

1. Employee churn: When it comes to human resources, there are significant financial investments required, and this is true as slightly firm or organisation. Underlingshake analytics is the practise of determining the rate at which your employees leave your company. Staff churn analytics aids in the prediction of the future and the reduction of employee churn rates. Employee churn data gathered in the past is used to calculate the rate of employee churn experienced since the beginning of the employment relationship. Employee churn analytics need both predictive and historical turnover data, and both are critical.

2. Capability: Without a question, the degree of experience and skills of the personnel play a significant role in the success of any organisation. In the background of people management, capability analytics is a process that assists you in identifying the core skills of your organization's staff. Once you've identified those competencies, you may use them as a baseline against which you can assess the aptitudes of your staff plus identify some slits.

3. Organizational Culture: The culture is not merely difficult to nail down, but it is also difficult to change once it has been established. It is frequently the collective understood norms, processes, and patterns of social behaviour that serve to define the nation of your organisation or business, rather than

any explicit rules or procedures. In the workplace, organisational culture analytics is a technique of measuring and improved indulgent the culture in organisation and we can evaluate it and keep pathway of any changes that may have occurred. Tracking cultural changes can assist in identifying early warning signals that a company's culture is becoming noxious.

4. Capacity: It is true that capacity has an impact on profits. The goal of capacity analytics is to determine how productive your workforce is in terms of operational efficiency. For example, in a company that specialises in clothing design, are workers spending too much time in meetings and debates rather than investing that stretch in more gainful work, or they being far too casual almost their responsibilities? This type of behavioural study is called capacity analytics, and it determines how much growth potential they have as individuals.

5. Leadership: Ineffective leadership is equivalent to non-leading at all. Poor leadership results in a loss of money, employees and time. Employee preservation in such an organisation becomes enormously problematic, and a company's ability to function at its maximum capacity is severely limited. Analysis and dissection of numerous phases of headship precital at a workstation to discover the good, depraved, and the horrid are the goals of leadership analytics. Data container be gathered over qualitative and quantitative research methods, as well as a combination of both, such as surveys, polls, focus groups, and ethnographic study.

Some of the profits have been shown below because of HR analytics as per the presented source:



Source: <https://www.questionpro.com/>

HR analytics will answer the resulting such many questions around the Firm's HR system in an organization:

- What is your company's turnover rate in terms of employees?
- Do you recognise which of your employees will be leaving your company in a year of joining it? Which percentage of employee turnover is seen as a regrettable loss?
- What is the annual turnover rate of your employees?
- What percentage of your employee turnover is a result of a regrettable loss?
- Do you know which personnel will be the most likely to depart your firm within a year of starting their employment with you?

HR analytics shape the business

By responding to the questions above, you can see that human resource data analytics is extremely valuable to an organisation as a whole. These are just a few samples to get you started. Indeed, analytics

helps organisations to assess the impact of human resource initiatives on the bottom line. Human resources can forecast the future of the workforce by utilising extensive statistical analysis. Managers can use this information to determine the financial impact of their Human Resource operations. More information on the tools that were utilised for these analyses may be found in our outline of the leading HR analytics implements.

The "holy grail" of HR data analytics is determining the impact of human resources on bottom-line performance (Lawler III, Levenson & Boudreau, 2004). This frequently accomplished through the calculation of a Return on Investment (ROI). It is the furthestmost effective method for human resources to expand its strategic impact. An evidence-based approach to human resource management (HRM) is charity to develop the decision-making practice for HR-related operations. The application of this data-driven analytical methodology results in increased value for the department of human resources. The fact is that, despite the widespread attentiveness in human resource analytics, both inside academia and in business, here is stagnantextensive way to go earlier we can fully reap the profits of data and analytics. Dahlbom et al. (2020) accompanied qualitative conferences through nine top Finnish organisations in order to better understand the profits of human resource administration and to recognise the issues that prevent it from being widely implemented.

According to the findings of the study, the top management ensured not have plentifulself-confidence in the future of HRA and obligated numerous reservations about the profits it would provide to both employees and the firm. As a result, it is critical for businesses to gain aenhancedempathetic of the effect and benefits of HR Analytics in order to boost the likelihood of its acceptance and advancement. The forthcoming of human resource analytics will be determined by measuring the existing impact of analytics. According to Kremer (2018), the development of human resource analytics will be primarily dependent on the moderation elements that either favour or hinder its performance. Heuvel and Bondarouk (2017) discuss what the solicitation, value, arrangement, and systems maintenance of human resource administration (HRA) might look like in 2025. They assert that the primary concentration will be on encouraging evidence-based conclusion making and establishing an analytical mind-set, particularly in the context of human resource functions. They also emphasise the need of identifying unique human resource factors that have an impact on business outcomes. Furthermore, it is recognised that, in addition to the positive association between HRA and business outcomes, it is vital to identify the specific outcomes that are affected by direct and indirect factors, as well as the extent to which they are affected.

Conclusion

The objective of doing a systematic review was to gain an understanding of existing concepts and methods in workforce analytics, as well as to assess the present state of its implementation in the real world. Our research defined the notion of human resource analytics, establishing a clear structure for the investigation, which allowed us to investigate the development of HRA over time and how it is reinventing our field by enchanting a more strategic viewpoint and contributing more to the decision-making process of organisations. In addition, this study recognised three stages of the organisation: operational, strategic, and data-driven human resource development. The final stage, which serves as a critical pillar in the success of HRA implementation, is now taking place. Our investigation into the factors that influence its integration led us to identify a few disadvantages, including a lack of enduringapparition, a lack of placement between the HRA approach and the organisational tactic, and a lack of analytical mellowness within the organisation, and definitely, within the subdivision.

In the current environment, all of these obstacles are impeding the successful deployment of workforce analytics within enterprises. Finally, we discussed the influence of HR analytics and discovered a positive link between HRA and necessary employee behaviour, as well as a constructive association between HRA and favourable corporateconclusions. In the future, studies of human resource analytics and the variables that impact it could benefit from experiential examination. We urge that longitudinal data be collected from a variety of businesses in order to obtain results that are

generalizable. A study exploring the influence of HR Analytics on specific organisational results has also been conducted, but it has been done in a very limited number of cases. More research is desirable to recognise these relationships in greater deepness and to determine their consequence in relation to specific HR practices such as capacity attainment, enactment administration, and reward.

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GREEN HRM: A ROAD MAP TO ENVIRONMENTAL SUSTAINABILITY LEADS TO HIGH ORGANIZATIONAL PERFORMANCE

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Abstract:

The constant changes in technology and innovation, economic, social, psychological understandings and structures have a greater impact on both Human Resources and Organizations. “Organizational sustainability” has become a crucial concern in global business in the twenty-first century. In today's world of business, "organisational sustainability" has become a key concern. As a result, in today's business world, one of the foremost imperative aspect of company is green human resource management.

Employees must be aware and environmentally conscious and also need to empower themselves about how to greening environment while when implementing a green human resource management strategy. The purpose of this research is to determine the relationship between green HRM and organisational sustainable growth through the researches on various organizational green HRM practices.

Green human resource management strategies are acknowledged to have a significant and long-term impact on environmental sustainability and having direct relationship with organizational sustainability through effective performance. Now a days more and more organisations are recognising the significance of sustainability on their competitiveness, reputation, and capacity to attract and retain resilient talent by providing economic, societal, and environmental benefits to them. Therefore, now organizations have started focusing on green HRM, whereas it is still in the stage of beginning in India. The main purpose of this study is to outline in what way green HRM can help to access a growing knowledge performance which could help the organizational sustainability.

Keywords: Green Human Resource Management, Environmental Sustainability, Green HRM Initiative, Organizational Performance.

Introduction

The Green HR means augment green colour to the business environment to safeguard the interest of all stake holders. The green signifies prosperity, abundance, growth, feeling of safety, advancement and wealth. It is needed for business organizations to go towards the growth by efficient usage of technology, lowering processing cost, HR products revamping, achieving greater efficiencies, reducing and eliminating ecological wastages in production, and increasing profitability, cost effectiveness. An adoption of an environmentally friendly setup is most beneficial to the business organization to have a gain in the present as well as in the future. The Green HR involves in reducing the carbon footprint by fostering eco-friendly initiatives to have clear and clean environment, reducing wastage by minimizing the usage of paper, proper disposal of wastages, high retention rate, less printing of paper, video conferencing and interviews, etc. Green HRM helps an organization to retain the talent instead of laying off employees (cause losing of intellectual assets) and further it will assist in finding alternative ways to

cut the cost by business concern. Hence, it helps in retaining knowledge capital within the organization. As a result, in today's business landscape, the phrase green HRM has become a buzzword.

Green Human Resource Management (Green HRM) is a modern management paradigm that was, originally designed and developed due to its ability to influence employees' green behaviour. Green HRM has proven to be an effective management strategy for addressing corporate environmental sustainability. As a result, GHRM (Green Human Resource Management) has developed as a critical business strategy for major organisations, where human resources departments playing a key role in the organization's greening efforts. With the rapid hustle of global awareness of environmental management and sustainable development, this phrase has emerged as a hot theme in recent research investigations. Today, the concept of Green HRM encompasses not just environmental awareness, but also within a larger perspective, the social and economic well-being of both the organisation and the personnel.



The Different authors have given different definitions for the terminology such as —HRM policies have been used by the Green HRM to promote use of resources in a sustainable way within the organizations and it will become the cause of sustainable environment. The green workforce understanding, appreciating, practicing green initiatives and maintaining green purposes throughout Human resource management process such as recruiting, selecting, training, motivating, rewarding, promoting, advancing and the like will be created by the Green HRM in an organization. It refers to the strategies, processes, and structures in situation to turn employees of a enterprise green for the advantage of the people, the public, the atmosphere, and the enterprise. (Opatha & Arulrajah, 2014, p. 104). Ultimately the Green HRM focus on retaining employees keeping in the mind workplace efficiencies rather eliminating due to certain inefficiencies. Often HR strategies and practices are contributing in response to the environmental issues which are referred by green HR.

The green practices of the organisations should pervade their operations, services, and technology functions. They should eventually prevail on their constituents, to go green in their practices and other functions as well. (Chaya, Rakshitha , 2021).Sustainable Human Resource Management (SHRM) is a component of Green Human Resource Management (GHRM) (Stankeviit, Savaneviien 2018; Beck-Krala, Klimkiewicz 2017) that aspires to generate value to all stakeholders in the firm through a instantaneous contemplation for efficiency, social, and environmental factors in the human resource activities

Human resource procedures are crucial not only in the implementation of sustainable development projects, but also in the management of human resources (Renwick et al., 2008; Ulrich, Brockbank, Johnson 2009), but also play a crucial role in fostering a culture of sustainable development. Human resource procedures are crucial not only in the implementation of sustainable development projects, but also in the management of human resources (Liebowitz 2010 Years; Harmon, Fairfield, Wirtenberg 2010). As a result, accomplishing environmental goals necessitates a human resource management strategy.

Companies now realize that they must cultivate a strong social conscience and a sense of ecological responsibility, in which corporate responsibility serving as more than just a tool for brand building, but as a critical factor in business development. Many companies that have adopted a more environmentally friendly greener approach within their organizations are having a positive and harmonious impact on employee relationship patterns in their organizations. This has a beneficial impact on employee attitudes because they believe that, in addition to their functional contributions on the job, they have a significant role to play in environmental preservation. Green management efforts are becoming increasingly significant in forward-thinking companies around the world.

Green HR initiatives assist organisations in identifying cost-cutting alternatives without sacrificing top talent, such as furloughs, part-time work, and so on. Strategic Green HRM - the integration of environmental management into HRM – is becoming increasingly important. Encouragement of employees to be more environmentally responsible in the workplace was recognised as the top practise for HR professionals.

Making double-sided photocopies, turning off computers after a few minutes of inactivity, using energy-saving light bulbs for desk lamps, ensuring blinds are drawn down lowered in the summer to conserve energy, donating / discounting used office furniture / supplies to employees or a local charity, and other activities were among the top environmental activities encouraged by the organisation.

Companies nowadays executing the EMS (Environmental Management System) as a strategic instrument to gain a competitive advantage. This method enables the company to better control its environmental impact. This process includes commitment, policy, planning, execution, measurement and evaluation, as well as assessment and enhancement of HR systems that are aligned with the organization's culture and long-term goals.

Review of Literature:

The resource-based view (RBV) theory proposed that successfully utilising organisational resources is the key to achieving organisational competitiveness.

Given the importance of organisational assets and resources in generating efficiency and growth, intangible assets have a significant impact on performance. In this regard, research on intangible assets has primarily focused on determining their relationship to monetary, social, and economic factors, with little information on their relevance to environmental performance.

Several research has have determined the association between intangible resources and economic and financial factors, among them (Wyatt, 2005; Simon and Sullivan, 1993), knowledge spillovers (Corrado et al., 2017); O`Mahony and Vecchi, 2009) financial performance (Surroca et al., 2010; Riahi Belkaoui, 2003) and organizational competitiveness (Hall, 1993; Ivanov and Mayorova, 2015) (Yadiati et al., 2019).

Business Sustainability (BS): The Brundtland Report (1987) commissioned by the World Commission on Environment and Development is the most widely used and recognised definition. Sustainability is defined as meeting people's current needs without jeopardising future generations' ability to fulfil their

own. In the literature, the term "sustainability" is employed in several different ways.

Objectives of the Study

The objective of this paper is to study:

- To know the Green human resource management initiatives
- Impact on Environmental Sustainability
- Influence on Organizational Sustainability by Performance
- To suggest the benefits of Green human resource management

Research Methodology:

The research paper is an exploratory study based on secondary data gathered from websites, journals, magazines, articles, and news reports. Green practises in chosen Indian enterprises and their influence will be investigated from their websites.

Green HRM activities

Green HR has become a highly prosperous concept in recent days. It primarily focuses on environmentally friendly human resource practises and how it contributes to making the sustainable development of the organization environmentally friendly. Green HR entails lowering manufacturing costs by eliminating waste and conserving natural resources. It entails utilising modern technologies to enhance the organisation operations.

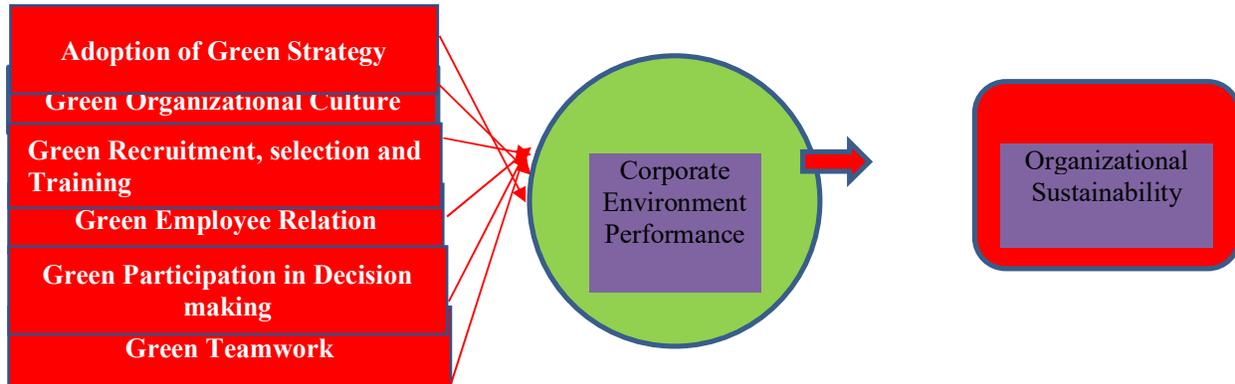
Hence, Green HR makes the organisation more cost-effective and ecologically friendly by utilising new emerging technology and conserving natural resources. Green HR is one of the most chattered topics in the business world these days. The colour 'Green' has been used to give HR operations a highly attractive appearance in recent years. It means now companies are adopting new technology in HR and promoting their business. These novel technologies are more cost effective, environmentally friendly and have also increased the efficiency of the employee and the organization.



Green HR Practicing Companies

The concept of environmental sustainability is engendering significant concern among organisation executives, consumers, management researchers, and governments. Environmental issues today present a plethora of opportunities and challenges, and stakeholders are grappling with them. It is always important to understand the right attitude and behavior towards the environment in such a way green organizational behaviour should be strengthened. Because of their various patterns of living, people's daily lives have an impact on the environment.

Impact of Green HRM on Organisational Sustainability



Limitations of the study:

The main limitation of this paper is that this study only looked at a small number of Indian enterprises, and the information was gathered from print literature and the companies' websites, with no primary data being acquired.

Conclusion:

The initiating of green HR issues is most important and organizations have to play a critical role in implementing since performance of the organization is depending on it. The organizations must increase awareness among the workforce about environmental sustainability and have forced to incorporate environmental issues into their mission, objectives, and strategies. Injecting of environmental sustainability to the human resource is necessary. The employee green engagement is very important and organizations have to encourage green organizational culture through adoption of green strategy. As a result, we could see the good corporate environment performance which leads towards the organizational sustainability effective and efficient utilization of resource in a very shrewd way. Human resource functions like as recruiting and selection, training, employee involvement, and empowerment can all be converted to green human resource practises, according to the findings of a study. In green HRM so far there is no as such concurrence about indicators or components to incorporate into system. However, the model has been developed showing some of the component will have influence on corporate environmental performance and as a result we will be having organizational sustainability based on the secondary source of information.

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Websites : www.greenhr.com,
www.abhinavjournal.com
www.allreaseachjournal.com

Green HRM Practices: Stimulates Environment Sustainability and Innovation

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Abstract

Business executives, governments, consumers, and management researchers are all concerned about environmental sustainability. The human resource management function contributes to the ongoing discussions and debates that take place in the midst of stakeholders' struggles, as well as the difficulties and opportunities presented by environmental concerns. With the greatest significance of the human resource management function in the goal of ecologically sustainable company, the business sphere witnesses the emergence of Green human resource management. Are human resource management (or just HR) rules and practises changing to accommodate a new way of working for people? Is it possible to go the 'green' route? As a result, the objective of this research is to explain what green human resource management entails, as well as firms' approaches to green HRM, their benefits, policies, and practises. Based on research findings, survey reports, and secondary data from a few studies from firms' web pages, the study covers current trends in green HRM practises in companies. It also emphasises the importance of the HRM function in fostering a green environment in companies.

Keywords: Green Human Resource Practices, Green Creativity, Green Management Initiatives, Stimulating Green Innovation and Growth, Green HRM, Environmental Management, Sustainability.

1. Introduction

Green human resource management (GHRM) is viewed as a necessity for green governance and corporate behaviour in enterprises, as well as a critical step toward establishing a long-term sustainable distinct advantage. Green human resource management (GHRM) studies began in the late 1990s and accelerated in the decades that followed. Because of the progressive deterioration of the natural environment as a result of human exploitation, the concept of sustainable development was introduced. As a result, environmental protection and resource conservation for future generations have become global imperatives. When mankind realised that natural resources were limited, environmental protection and pollution control methods evolved as a result of several environmental challenges. Environmental management methods have advanced as a result of corporations' deliberate actions on environmental issues, as they bear the most responsibility for pollution. Businesses began to choose to be a part of the solution rather than the problem after the 2000s, and they began to adopt green business and management strategies. Environmental consciousness should be included in every human resource management function, from employee recruiting to training, performance evaluation to reward, in order to improve environmental performance, environmental management and long-term competitive advantage. In this background, green human resources management (GHRM), which allows for greater employee understanding and commitment to environmental sustainability, has arisen as a fascinating issue. Green human resource management and practices are evaluated in this study, key challenges are identified, and recommendations are offered for future academics interested to work upon this subject.

Green human resources refer to promoting sustainable practises and increasing employee understanding and commitment to environmental issues through every employee interaction point. It entails formulating and implementing environmentally friendly HR policies that result in increased efficiencies, lower rates, and higher employee engagement and retention, all of which helps organizations to reduce their carbon footprints. Just a few examples include electronic filing, carpooling, job sharing, teleconferencing and virtual interviews, recycling, telecommuting, online training, and energy-efficient office buildings. It refers to the policies, procedures, and systems that allow employees at a company to go green for the sake of the environment, society, and the company. The paradigm of sustainable development emphasises not only the significance of achieving economic goals, but also the importance of resolving a wide range of social and environmental challenges. According to the author of a Green HRM paper, human resources can make a significant contribution to the establishment of ecological organisations. As a result, green human resource management is integrated into a larger corporate social responsibility framework and it refers to the application of human resource policies to encourage the sustainable use of firm resources while simultaneously supporting the environment, environmental impacts of their duties, and take appropriate steps. Finally, the number of knowledgeable employees who can prevent pollution and provide solutions is growing, resulting in improved firm environmental performance. As a result, only highly qualified personnel have been produced.

Human resource strategies that consider environmental repercussions in all business activities while conforming to the company's environmental goals and objectives are referred to as green human resource management. The productivity obtained

through GHRM practises helps firms become more aware of their organisational and societal responsibilities while also lowering operational costs. Firms' environmental consciousness grew as a result of environmental disasters around the world, and pressures on businesses to be more environmentally conscious have pushed businesses' environmentalist practises even further. Green business strategies pave the way for a more economically and environmentally sustainable environment, providing it a competitive edge. As a result of GHRM, company performance is enhanced, costs are decreased, employee commitment and other organisational outcomes are improved, and the carbon footprint of organisations is reduced and green human resource practises, and it is a great acknowledged to organisation for building employees awareness of sustainability.

According to Chen, Lai, & Wen (2006), green innovation can be separated into green products and processes, as well as innovations in technologies used in the manufacturing of green products, such as energy saving, waste recycling, and pollution prevention technology. As a result of growing environmental concerns, green innovation has emerged as one of the most important strategic efforts for achieving sustainable development in industrial businesses (Chang, 2011). Green advertising is a potential tool for promoting products, services, ideas, and organisations that are concerned about the environment and want to conserve and preserve it. In combination with social consciousness, it is also a tool used by businesses to share and inform the public about the role that enterprises play in global concerns. Aside from that, the government employs green advertising to promote the concept of environmental protection and build awareness about it. (Abd Rahim, Ahmad Zukni, Ahmad, & Lyndon, 2012).



1.1. Objectives of the Study

Academically, there has been minimal attempt to analyse environmental or green human resource management. While there is some literature, it comes from a variety of perspectives. The goal of this research is to shed light on the conceptual challenges surrounding green human resource management and its implications for long-term innovation and creativity. The current research is exploratory in nature, with the goal of providing clear direction for empirical investigation. Secondary data were gathered for this purpose. Newspapers, periodicals, books, journals, conference proceedings, government publications, and websites were used to gather secondary data. The purpose of this paper is to describe the concept of Green Human Resource Management, as well as its impact on long-term innovation and creativity. It adds to ecologically sustainable business practises, and it is possible to implement them. Businesses are beginning to incorporate green initiatives into their daily operations as society becomes more ecologically conscious. Green human resource management is a growing topic that has a lot of implications for businesses. The structural relationship between the effectiveness of green human resource management and innovation, as well as green promotion as a green human resource management strategy, will be investigated in this study. Green HRM is delivering services with the purpose of balancing the company's profit while also protecting the environment.

1.2. Defining Green HRM

As part of sustainable human resource management (SHRM), green human resource management may play an important role in environmental management.

Bombiak and Marciniuk-Kluska (2018), HR policies are being used to encourage the sustainable use of business resources and to support ecology, with the primary purpose of developing ecological consciousness in employees and making them aware of how their activities may affect the environment.

Opatha (2019), dealing with concerns including green employee responsibilities, green HRM functions, green attitude

and behaviour, and green work performance.

Renwick, Redman and Maguire (2013), Corporate environmental management is being integrated into human resource management.

Opatha (2013, p.28) defines all activities associated in the development, implementation, and continuing maintenance of a system that seeks to make employees of an organisation green. It is a branch of human resource management concerned with converting regular employees into green employees in order to satisfy the organization's environmental goals and, as a result, contribute significantly to environmental sustainability.

2. Significance of Green HRM

Because the few reasons for a firm to adopt Green Practices are relatively generic, a phenomena known as societal responsibility of corporations exists in the context of a specific organisation. It refers to the extent to which a company will work to promote society's overall well-being. It's a responsibility to society as a whole. As a result, every company is required to practise corporate environmental management, and the company must meet certain environmental objectives. Green HRM as part of the organization's responsibilities would aid in the development of the company's image and the recruitment of good human resource. It also enhances the company's brand image in the marketplace. It can also be employed as a marketing approach. It aims to strengthen the company's relationships with consumers, suppliers, vendors, shareholders, government agencies, employees, and the media. Green HRM becomes crucial in order to produce environmentally friendly products and operations, successfully manage corporate environmental programmes, and overcome corporate environmental programme implementation challenges (Milliman & Clair, 1996). Renwick et al. (2008) stated that employees can be aligned with a company's environmental goal using separate policies in recruiting, performance appraisal, training and development, employee relations, and reward systems. Therefore, green HRM can make a substantial contribution to successful environmental management (Jackson et al., 2011). The employee will be able to make a significant personal contribution while also becoming a good citizen who contributes to environmental sustainability by going green. Some of the reasons for going green include avoiding harm to animals and other natural creatures, protecting the earth from natural disasters such as acid rains, red rains, tsunamis, flooding, hurricanes, and droughts, reducing pollution that causes health problems, avoiding global warming, and ensuring an appropriate balance between nature and all other living and non-living things on the planet and ultimately, the long-term survival of persons and commercial organisations.

2.1. Advantages of Green HRM

Businesses benefit from green teams in the following ways:

- New business ideas,
- Improving and simplifying learning,
- Define environmental issues more precisely and quickly.
- Develop the best possible solutions to these issues.

2.2. Economics of Green HRM

A low-carbon, resource-efficient, and socially inclusive economy is referred to as a "green economy." Green economy employment and income growth are driven by public and private investment in economic activities, infrastructure, and assets that reduce carbon emissions and pollution, enhance energy and resource efficiency, and safeguard biodiversity and ecosystem services. To enable and promote green investments, targeted public funding, policy reforms, and tax and regulatory reforms are required. According to the United Nations Environment Programme, natural capital is a critical economic asset and a source of public benefits, particularly for disadvantaged people whose livelihoods are dependent on natural resources. The green economy does not obviate the need for sustainable development; rather, it emphasises the economy, investment, capital and infrastructure, employment and skills, as well as positive social and environmental outcomes across Asia and the Pacific.

Studies on the three aspects of sustainability have primarily concentrated on the economic component, with the most prominent research topic being the relationship between a firm's resources, capabilities, assets, and performance. Some of these studies have sought to identify the resources and competencies required to improve a firm's competitive edge and performance.

3. Green HRM Practices

The absence of these goals presents difficulty in certain businesses because the goals of GHRM implementations are to make human resources aware of environmental issues, reduce enterprises' carbon footprints, and drive employees to improve

their environmental performance. In such businesses, cultivating an ecologically conscious culture and understanding of environmental issues is impossible. A company's goal with GHRM policies is to increase productivity, reduce risk, and safeguard shareholders' interests.

The study's focus was on implementing environmentally friendly human resource practises across businesses. The following is a list of the activities that were included in the study. Renwick, Redman, and Maguire (2008) present a comprehensive compartmentalization of Green HRM practises that is easy to understand, beginning with an employee's organisational entry and ending with the employee's exit. Green Practices allow you to be environmentally friendly, cost-effective, and practical all at the same time. Green activities of human resource management methods were used to conduct the diagnosis:

- Green Recruiting and staffing employees
- Green Employee Benefits
- Green Employee Compensation
- Green Organizational Structure
- Green Human Resources Information and Payroll
- Green Employee Training and Development

4. Green HRM Implementation

GHRM is an important part of long-term human resource management, with the goal of increasing value for company stakeholders by balancing efficiency, social, and environmental concerns in HR activities (Bombiak, 2020). At the job analysis and design stage, the GHRM idea is already being used. It is a comprehensive and continuing requirements analysis of green human resources (Daily and Huang, 2001), with the goal of supplying the individuals needed to satisfy the company's environmental objectives (Jackson et al., 2011; Opatha, 2013). Tasks and obligations related to environmental protection should be included in every job description. (Yusliza et al., 2019). Furthermore, qualification requirement profiles should include the knowledge, skills, and abilities required to perform the duties and responsibilities outlined above. (Renwick, 2008). Many organisations have formed a separate job in which the holder is in charge of coordinating various areas of environmental management.

5. The Role of HR Function towards 'Greening Environment'

Even if they appear to have positive impacts for managers, it has been noted that the personal values that employees demonstrate to employee involvement fully towards completing corporate environmental efforts. In reality, many businesses are taking an integrated approach to adopting environmental greening initiatives. However, achieving this integration of Green HR and environmental sustainability will need considerable adjustments in the attitudes of specific HR personnel toward environmental concerns, as well as the modification of unsustainable practises that all levels of staff may have picked up over the years. One of the most important responsibilities of HR environmental executives may be to advise line managers on how to obtain full staff cooperation in the adoption of environmental policies, which means HR must cultivate supporters and build networks of problem-solvers eager to challenge the status quo. This could only happen if the corporation established formal and informal communication networks with its employees, emphasising the company's environmentally friendly operations.

5.1. Recruitment & Selection

Become a preferred green employer or a green employer by indicating or making visible an organization's past and current environmental performance in the publication of job postings. Environmental criteria should be included in recruiting announcements. Using recruitment efforts to inquire about the employer's concerns regarding greening. Incorporating the organization's environmental policies and strategies into its recruitment policy. In the company's job advertisements, expressing particular environmental principles, such as becoming a member of the green team, and informing to become accountable for social and environmental issues. In the recruiting notice, stating that the firm prefers to hire applicants who are competent and willing to participate in corporate environmental management activities. As a selection factor, candidates' environmental concerns and interests should be taken into account. Raising questions about environmental issues throughout the recruitment process or when evaluating the candidates. Choosing candidates for job openings who are sufficiently knowledgeable about greening. Applicants who have been greening as consumers in their personal lives will be chosen.

5.2. Performance Management System

Measuring people's environmental performance in an organisation is complicated. To build environmental performance criteria and indicators, a performance management system to accompany green HR practises is required. Performance evaluation can be linked to the goals and tasks provided in the job description to start this process.

The systematic method of delivering feedback, accountability, and documenting of employees' performance in order to push them to improve their performance and better channel their talent toward achieving organisational goals is known as performance management. The understanding of corporate strategy leads to the management of an organization's performance. Environment management has a beneficial impact on global company strategies, and hence performance management has a favourable impact on the green wave. Marcus and Fremeth noted Green Performance Management (GPM) is being utilised by numerous companies to build a corporate-wide environmental performance standard that encourages staff to follow the company's green policies. When green standards are created and employees are evaluated against them, they have a strong desire to follow the rules.

5.3. Training and Development

Organizational members (workers and managers) is provided to environmental training in order to obtain the relevant skills and knowledge. People who want to learn or adopt eco-friendly best practises will receive training (e.g. reducing long distance business travel and recycling). Providing training to enhance "environmental awareness" among employees. Workers are being educated on environmental issues. Providing training to employees in order to do a green analysis of the workplace. Future green managers are trained through job rotation. It entails providing each employee with the essential greening skills and knowledge through a greening-specific training programme. Conducting training needs analysis to determine employee green training needs. Analyse and identify what kind of environmental training personnel need in order to raise their environmental awareness. Conducting a thorough and comprehensive training programme for each employee in order to provide them with the necessary knowledge, skills, and attitudes for efficient environmental management and ensuring that everyone has access to environmental management training.

5.4. Employee Involvement and Participation

Employee attitudes toward greening at work, employee pro-environmental behaviour, and out-of-work behavioural activities can all be influenced through green human resource management. When conducted because of the connection with nature, those behavioural actions are deemed voluntary and are on the road to corporate greening. Employee initiatives and volunteer behaviour towards the environment are an important element of the process, which is critical for success in the process of incorporating sustainability into enterprises. As a result, employee involvement and participation in organisational processes are critical for sustainability.

5.5. Compensation: Pay and Reward System

Green pay and reward (GPR), according to the strategic approach of rewards management, is "a system of financial and non-financial benefits" focused at attracting, retaining, and finally motivating individuals who are most suited for contributing to the organization's green goals. Employees can be rewarded for their commitment to exhibiting and promoting green behaviours and sustainable practises, which will help the firm achieve its greening goals.

In this context, reward and pay systems may improve company sustainability if they focus on reducing or eliminating undesirable behaviours and encouraging green behaviour. To achieve this, reward structures should be tailored to reflect strategic-level managers' commitment to greening. This strategic commitment will also motivate employees to become more environmentally conscious and participate in green activities. By combining rewards with greening, a study links the success of reward systems intended at encouraging employees to displaying and promoting green behaviours. Employee performance can be aligned with Green HR at work. An incentive for environmental awareness, as well as good workplace behaviour, could be part of an employee's package. The most effective way to motivate employees is to recognise their contributions to the environment by awarding appreciation certificates and the like.

6. Conclusion

GHRM is a new branch of HRM study focused on the creation of environmentally conscious business culture and employee attitudes. The literature review and empirical investigations show that measures done in the field of GHRM have an impact on long-term development. The necessity for environmentalism has grown as a result of global warming and the damaging effects of pollution on the environment. As a result, businesses are increasingly dealing with more ecologically

conscious stakeholders. Strict environmental regulations, increased demand for green products, and pressure to meet worldwide standards are all evidence of stakeholders for environmental concern. Organizations are manufacturing green products in today's competitive business world to react to consumers' environmental concerns. Any organization's top-level management is responsible for its environmental management philosophy. Companies must now embrace ecologically friendly practises in order to foster green innovation.

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Recent Developments in Accounting Innovations–An Overview

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Abstract: Several technology trends have emerged due to the data explosion that has ushered in the Fourth Industrial Revolution, an age in which cyber-physical systems will revolutionize the industry. Every company can benefit from these significant developments and should consider how to do so effectively, including the accounting sector. This research aims to perform a review of the literature on management accounting innovations (MAIs). It looks at recent advances in MAI research and provides recommendations for future study. The analysis is unique in that it focuses just on MAIs and covers the most recent period. This article discusses the use of "modern" management accounting approaches like Artificial intelligence in accounting, Cloud-Based Accounting, and more.

Keywords: Blockchain, Digital Currency, Cloud-Based Accounting, Accounting Innovations.

Introduction:

Most accounting firms are aggressively adopting and utilizing new-age technologies to become the accounting firms of the future. Companies may use accounting software to automate time-consuming and repetitive tasks as well as redefine current business processes. On the other hand, accounting technology trends shift with time.

Clients have grown to expect automated services from their accountants, and all types of accountants are falling short. According to research performed by the Association of Certified Chartered Accountants, more than half of C-level accounting executives expect automated accounting solutions.

Every new invention demands a move away from antiquated accounting software and toward technological accounting improvements. No company can be relevant and competitive in the long run if these principles aren't applied early. As a result of the data explosion that has ushered in the Fourth Industrial Revolution, an age in which industry will be revolutionized by cyber-physical systems, several technical trends have arisen. Every firm, including the accounting industry, can profit from these important advances and examine how to do so efficiently. The purpose of this study is to conduct a literature review on management accounting innovations (MAIs). It discusses current advancements in MAI research and makes recommendations for future studies. The research is unusual because it focuses just on MAIs and covers the most recent period.

To earn income, retain customers, and enhance operational efficiency, they'll need to develop a thorough plan for adopting and implementing accounting firm innovations. Accounting businesses should consider using technological advances as soon as feasible.

Research Method

Data was gathered from published publications in periodicals, journals, and government to achieve the objectives. The primary source of secondary data was collected from major portals.

1. Cloud-Based Accounting

Cloud computing has transformed a lot of sectors in a short period. Accounting firms, like other organizations, must embrace cloud computing and move to cloud-based accounting to remain relevant and competitive in the future. Cloud-based accounting software allows accountants to view financial information at any time and from any location.

Furthermore, these technologies assist accounting companies in maintaining open lines of contact with their clients. They can access financial data and operate on accounting software from any device with an internet connection. Additionally, firms may quickly scale up or down their resources according to their needs without making a large investment. Cloud computing technology has advanced significantly in recent years, making it one of the most important areas for accountants to keep an eye on. Gartner predicts that global spending on public cloud services would increase 18.4 percent from \$275.5 billion in 2010 to more than \$304.9 billion in 2021.

Cloud computing is already big business in accounting. By brushing up on the most popular cloud-only accounting software packages, you can solidify your place as a trailblazer. Cloud-based accountant technology applications require a subscription agreement to retain and retrieve data and utilize the tools and software supplied, such as purchase orders, expense claims, payroll, asset management, and even multi-currency accounting.

2. Integration of Accounting Software

Accounting activities make use of a wide range of tools. Invoicing, payment processing, payroll, inventory management, and financial reporting, for example, can all be managed with specialized software. Manual input from one app to another is used in traditional procedures.

No accounting firm, on the other hand, can compete without using this time-consuming method. All of the programs may be linked together to help automate and speed up the exchange of information. Furthermore, the likelihood of making a mistake is significantly decreased.

Automated accounting technology

Accounting no-coding is quickly approaching in the corporate world, meaning practically no data entering will be required. Automation has always been a two-edged sword that pitted convenience against technology human replacement. Your expertise and experience will be your most valuable assets as companies shift away from time-based invoicing. Because automated accounting system virtual controllers will be in great demand, being a high-value virtual controller will help you retain your profession as an accountant, even if you have to redefine it.

According to accounting specialists, automated technology will make accountants' duties easier by lowering manual entry time and eliminating human mistakes. Accountants may devote more time to a company's financial planning with the extra time obtained due to greater efficiency. This might lead to a boost in earnings. Accounting professionals believe that automated technology will make accountants' work easier by lowering the amount of time spent on manual entry and minimizing human error. As a result of this efficiency, accountants may have more time to participate in a company's economic strategies. This might lead to increased profitability. Even though they just scratch the surface, cloud-based accounting systems such as QuickBooks are automated accounting applications. Professionals will use cutting-edge technology to detect abnormalities or trends in computerized accounting, eliminating the need for human data entry.

3. Artificial intelligence in accounting

Artificial intelligence and machine learning are utilized in accounting. While the phrases artificial intelligence (AI) and machine learning evoke images of robots replacing people in science fiction, these technological advancements may benefit accountants by making their work more productive and efficient. According to Forbes, AI can be a game-changer for organizations, potentially improving productivity by 40%.

In the realm of accounting, AI can do repetitive, important activities that would typically require an accountant's aid, including auditing, payroll, uploading files, and sifting through enormous amounts of data.

Machine Learning in Accounting

As any accountant will tell you, even the smallest mistake may lead to significant problems. Using machine learning technologies as part of an accounting technology strategy may greatly reduce the likelihood of these unpleasant and time-consuming occurrences. Machine learning technology may be used to develop algorithms that detect trends in a wide range of math-based accounting operations, such as invoices and transactions. Once these algorithms have been developed and polished, any error resulting in a deviation from the intended pattern may be recognized before an accountant's calculations go beyond the problem. The ability to spot issues early on might have a big influence on accounting. It assures more accurate reporting and saves accountants time and effort when spotting minor errors during audits. This might save time and allow accountants to focus on more essential responsibilities.

Optical character recognition

Accounting software that interacts with OCR allows assistants to perform a basic advanced search to get the needed data. They might also cautiously replicate or modify information based on the circumstance. Most importantly, OCR enables reps to save time by noting receipts, engineering agreements, tracking costs, and eliminating paper clutter

OCR accounting software enables bookkeepers to use a simple advanced search to get the information they want. They can also create accurate copies and make modifications as needed. Best of all, OCR tools save money by letting bookkeepers handle all of their paperwork from beginning to end

The combination of OCR and accounting programming enables accountants to conduct a critical automated query to obtain the information they want. They can also carefully copy or modify the data as needed. The best aspect is that OCR allows accountants to save time on activities like seeking receipts, compiling sales, tracking costs, and disposing of paper clutter.

Fortunately, OCR is locating a home in digital, cloud-based applications. These models in bookkeeper development have altered the bookkeeping profession from a few years ago.

Blockchain technology

Blockchain technology is anticipated to revolutionize the accounting profession, and knowing how to use it may help you differentiate yourself.

In a word, blockchain is the dispersion and decentralization of database technology. It can secure encrypted data and maintain an ever-expanding record of all transactions involving all parties involved. Blockchain technology has the potential to completely revolutionize whole sectors, most notably the financial industry.

Accounting is currently based on a double-entry bookkeeping system. An accountant and an independent auditor input and check a company's financial data. When adopting blockchain technology, this sort of redundancy is no longer required because the data is confirmed without the assistance of a third party. Every transaction is subjected to a digital audit.

When many parties are engaged in a transaction, it is customary to retain their own records. This approach is inefficient and time-consuming, and dealing with discrepancies in data, in general, is challenging.

By utilizing current encryption methods, blockchain technology enables organizations to share a common data retention infrastructure. That is, while each accountant, auditor, and firm have their own privately kept database, it allows both sides of a transaction to be recorded in a common ledger at the same time.

Digital Currency

The number of people accepting and paying in digital currencies is increasing all the time. Many company owners utilize digital currencies to receive or make payments from foreign consumers.

Accounting companies must assist businesses in documenting digital currency transactions in the same way that traditional financial transactions are recorded. However, firms must invest in next-generation accounting software to register the digital currency transaction at the current exchange rate and pay the necessary capital gain tax.

Conclusions

Accounting technology developments change regularly. With each new trend, old accounting software becomes obsolete, forcing accounting firms to move to the latest technical developments.

Technological developments have changed the way professionals conduct business. They will continue to do so in a variety of industries, including accounting. Because organizations rely on statistics to measure performance, accounting experts are in high demand.

Clients demand more automated services from their accountants, and accountants are working hard to meet those expectations. Customers aren't the only ones who are ecstatic.

Accounting companies must have a solid strategy for identifying and adopting emerging trends and technology advancements in a timely and proactive way.

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**ROLE OF WOMEN WORKERS IN UNORGANIZED SECTOR IN THE SOCIO-
ECONOMIC DEVELOPMENT.**

-AN EMPIRICAL STUDY IN K.R. NAGAR TALUK

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Abstract.

Socio-economic development is an indication of prosperity in the society. Amongst many contributors to the socio-economic development the working women in the unorganized sector are recognizable ones. Quantification of contributions to the social development by any agent is not precise, however in economic terms the contributions are precisely measurable. The contributions made by working women in unorganized sectors towards growth indicators- education, attitude, group dynamism, leadership quality, competitive spirit, friendliness, decision making, loyalty, culture are studied through an empirical study in Krishnarajanagar taluk with a sample size of 127. From the same respondents the economic growth indicators are also studied with the input of primary data. The inferences are drawn objectively and this study has proved the hypothesis that 'working women in unorganized sector contribute significantly towards socio-economic development of the community'.

Key words: Change agent, Informal leadership, Socio-economic development, Unorganized Sector, Working women.

Introduction

Demographic statistics reveal almost equal gender equation at the universal level. The contribution made by fairer sex to the socio-economic development is undermined by the dominant other group over a period of time. The women folk are emerging as competent personalities on par with men folk in the recent past. A true recognition of the calibre of women is yet to be noticed. Women are playing the role of change agents in every sphere of human life. Of late the reports of coming in highlighting women excelling men in astronomy, Sports, entertainment, politics, literature, science and technology. Women are plunging into economic lives in all possible ways. They are supplementing the economic strength of the households and in some cases their contributions form the stem part of economic power of their households. Needless to say that the women are the much-acclaimed social change agents at different levels. The working women are balancing the work life and personal life very efficiently. Concomitantly there is healthy socio-economic structure at the base level. Perhaps the macroeconomic disorders are manifested and manoeuvred mainly by the perceivable contribution by menfolk.

The working women in unorganized sector have a distinct quality of sustaining social pressures and achieving economic goals. Hardly they succumb to the social pressures and persistently aim at augmenting economic resources. The experiences they learn from some daily routines make them strong and that enables them to nurture their dependents in a path that leads to higher levels of socio-economic hegemony.

In Krishnarajanagar taluk of Mysore district where urban rural population is in the ratio of 1:9, the working women in unorganized sector are mainly engaged as farm labourers, housemaids, workers in commercial establishments and Construction labourers. Working women as farm labourers account for 90% of total of population in this category. Krishnarajanagar taluk has more than 50% of the cultivated area under canal irrigation and farm labourers are put in to service mainly at paddy and sugarcane fields. A Portion of the taluk has semi-arid zone where pulses, ragi, jowar and other cereals are grown. Housemaids are found in Krishnarajanagar town, Hampapura, Bherya, Mirle, Chunchankatte and in other few big villages. The plight of these workers in economic front is

not conducive because of low wages, seasonal employment, lack of job security, bad working conditions and absence of labour welfare facilities. In the social arena also, they suffer alienation from the neighbourhood. However, their contribution to the base level socio-economic structure is significantly high.

STATEMENT OF THE PROBLEM

Quantifying the development in the socio economic arena is herculean task because it involves meticulous calculations involving primary and secondary data. The task is rather difficult as much as social development is concern where empirical evidences shall only be measured, recorded & analyzed. While studying the role of certain factors that contribute the socio economic development the authenticity becomes an intricate issue. The cause and effect relationship cannot be exactly established in the socio economic phenomena because of multiplicity of the factors contributing to the outcomes. When it comes to study of role played by working women in unorganized sector towards socio economic development the problem deepens. Working women in unorganized sector have unique character of sustaining ordeals of work life and personal life. They are rather insensitive in perceiving the problem and expressing the same. Hence the collection of primary data to study the role in socio economic development becomes a daunting task.

LITERATURE REVIEW

Saradmoni (1995)¹ state that women workers are exposed more to the risk of sexual harassment and exploitation.

Breman (1985)² reports Women employees are frequently required to work into the last trimester of pregnancy and to return to work soon after childbirth, putting themselves and their children in grave danger.

Thomas (2012)⁵ According to his research, India, like other South Asian countries, has a low female labour force participation rate, which is a clear reflection of women's lack of autonomy in society as a whole, as well as their capability deficiency.

Nadia Ahad, Pratibha J. Mishra (2017)⁴ In this study the researcher concluded that The empowerment of women is the major concern of the present day. The efforts of the government to improve the condition of women workers are praiseworthy but due to corrupt practices of the functionaries, the beneficiaries are not capable to utilize the programmes meant for their betterment.

Manju⁶ the study has revealed that the unorganized sector is larger in rural areas as compared to urban areas. The female participation in this sector is more than male in his study

Srivastava, N. & Srivastava R, (2010)³ According to researcher Cultural restrictions however are changing, and women are freer to participate in the formal economy, though the shortage of jobs throughout the country contributes to low female employment

SIGNIFICANCE OF THE STUDY

The study is aimed at exploring the socio economic development arising out of the contributions made by working women in unorganized sector with particular reference to Krishnarajanagar taluk. This explorative study has thrown light on concurrent issue consecrated in socio economic fabric in the rural sketch. This is an unique study which adds to the literature on socio economic study.

RESEARCH QUESTION

Is there any significant contribution made by working women in unorganized sector to the socio economic development of the community?

OBJECTIVE OF THE STUDY

To study or explore the contributions made by working women in unorganized sector towards socio economic development in Krishnarajanagar taluk.

HYPOTHESIS

H₁: "Working women in unorganized sector contribute significantly towards socio-economic development of the community".

SCOPE OF THE STUDY

The present study is confined to the taluk of Krishnarajanagar in the revenue of district of Mysore, Karnataka state. Further this study is wholly based on primary data collected from working

METHODOLOGY

The research is based on both primary and secondary sources of information. Secondary data is obtained from the published & unpublished data including E-resources. The primary data is obtained from administering a pilot tested structured questionnaire to a sample of 127 respondents. Convenient sampling method is adopted while selecting respondents. Enough care is taken to give representation to all same categories of worker & sub regions in the taluk. The data collected are subjected to analysis using SPSS 16.0 package. The tools of analysis are simple frequency, ratio, percentage, standard deviation & chi square test.

DEMOGRAPHIC PROFILE

The following table briefly delineates demographic profile

Table-1: Demographic profile

Sl.No	Particulars	Profile
1	Average age	38 years
2	Average amount of income	24000 p.a.
3	Average size of house holds	5
4	Occupational engagement- Time ratio between domestic duties and outside work	30:70
5	Literacy rate among respondents	58%
6	Literacy rate of children in the households	100%
7	Average distance travel for attending work.	3.2 K.M

Source: Primary data- survey

PERCEPTION ANALYSIS

For the purpose of studying in the perception of respondents about their role to a socio-economic developments following 12 assertive statements were included in the questionnaire and responses were recorded in 5 points Lickert scale. The ranks are assigned as 1-Strongly agree;2-Agree;3-Notsure;4-Disagree &5-Strongly disagree.

Table-2: List of statements

Sl.No	Statements
1	Emerging in gainful employment outside the domestic front is not affecting the domestic chores
2	The stress mounted in the domestic front makes no effect on work life
3	The disturbances at the work place never intrude in to the domestic life
4	Lessons learnt at work place motivates the refinement of social life at home
5	Public exposure leads to inclining towards getting better education to the

	children
6	Public exposure entails upbringing children in a disciplined way
7	A personal financial management become an easy task because of outside work exposure
8	Thrift habits are very well inculcated because of exposure to outside work station
9	Investment options are well explored because of experience of outside work station
10	Banking habits are inculcated owing to association with co workers and employers outside
11	Financial discipline is thoughts to fellow members of the households in a significant manner
12	Deviations in socio economic behaviour of family members are dealt amicably

Table-3: Data analysis

Sl.No	Mean	Standard Deviation	Chi-square test
1	1.5198	0.6934	0.000
2	1.5110	0.6050	0.000
3	1.1718	0.5079	0.000
4	1.4185	0.4944	0.014
5	1.4846	0.6675	0.000
6	1.0573	0.2328	0.000
7	1.5154	0.5008	0.042
8	1.7797	0.4153	0.000
9	1.6432	0.6520	0.000
10	1.5815	0.5846	0.000
11	1.3392	0.4744	0.000
12	1.6123	0.5794	0.000

Source: Primary data-Survey

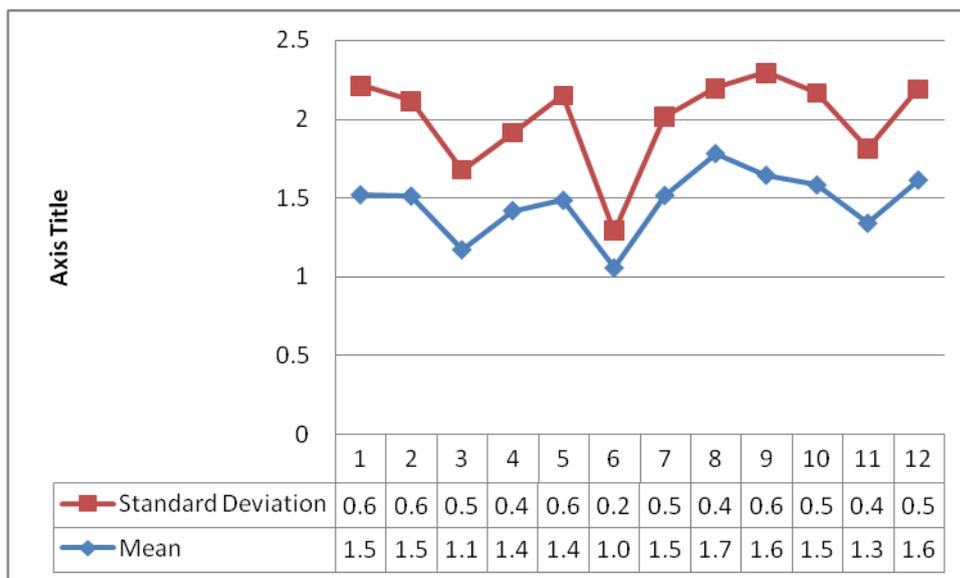
Combined arithmetic mean of 1.4695 with combined standard deviation of 0.5339

Highlights of perception analysis

- 59.5% strongly agree with S1
- 5.7% are neutral to S2.

- 58.1% strongly agree with S3
- 94.3% strongly agree S4
- 48.5% strongly agree S5.
- 78% agree S6
- 9.7% are neutral to answer about S7
- 4.8% are not sure about S8.
- 66.1% strongly agree that S9.
- 4.8% are neutral to answer about S10
- 66.1% SA with S11
- 43.6% SA with S12

Chart-1 Arithmetic mean & standard deviation



DISCUSSION AND HYPOTHESIS TESTING

A rural woman hailed from middle income, lower middle income and economically weaker section group. Normally take-up gainful empowerments on casual basis extraneous to domestic source. These women play a vital role in social and community next. In the mean time they do contribute to the economic development at micro level and concomitant macro economic development. The role of working women in unorganized sector in rural area in moulding the characters of family members along with their own social reformation is a perceivable outcome in the present society. Hardly the dropouts from school education among the children of their households are noticeable; this signifying the importance lay down by such women on children education. Besides this they inculcate good habits including financial discipline among the children and other members of their households. Saving investment and banking habits are not uncommon among such women. The study conducted by the researchers in the rural society of Krishnarajanagar taluk through collection of empirical evidences and analysis of data as portrayed in table 3 above has reveal the Combined arithmetic 1.4695 and Standard deviation 0.5339. Further the chi square statistics at 95% accuracy level stand before 0.05 in 12 statements which indicate that the data are consistent. Therefore the hypothesis ‘working women in unorganized sector contribute significantly towards socio-economic development of the community’.

LIMITATIONS

1. The primary data may be inaccurate. The larger sample would have given more reliable data.
2. The secondary data sources obtained from different sources carry through the inherent defects.

RECOMMENDATIONS

The researchers offer the following recommendations

1. Working women in unorganized sector is suggested to look at economic security through bargaining with employer.
2. It is advice to working women in unorganised sector to insist on women safety at work station.
3. It is suggested that the employer will provide better working condition and better terms of employment.
4. The policy maker from the government side shall explore the possibilities of setting up of small and medium enterprises that give year long employment they paving way for socio economic development of rural women.

CONCLUSION

To sum up an empirical study on role played by working women in unorganized sector towards the socio economic development has explored multi dimensional picture of rural society. It is worth noting that majority households of rural working women are well cultured, educated and constantly inching towards higher standard of living. The cases of deviant behaviour of younger members of the households of these working women are very negligible. Finally their contribution towards socio economic development is proved to be significant enough. Yet rural working women are at receiving end in respect of working conditions, terms of employment and job insecurity. The suggestions given by researchers are worth implementing and given the actions mooted as aspired the rural society emerges as welfare society.

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STRATEGIES TO RAISE SATISFACTION LEVELS OF BANK CUSTOMERS VIS-À-VIS GREEN PRODUCTS AND SERVICES*

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Abstract

In line with banks elsewhere in the world, our banks have also been attempting to provide environmentally friendly green products and services to their commercial and retail patrons. Given the diversity (along various parameters) that characterises their retail customer base in particular, the banks must go the extra mile to convince the customer base to patronise their green products and services. Typically, the banks should start the exercise by ascertaining how they can render the products and services more effective and more user-friendly for the customers. By strategizing appropriately, banks can ensure that the satisfaction levels of the customers rise significantly. Towards this end, the researcher interacted with two categories of respondents, strongly associated with the green products and services offered by the banks namely, the bank officers and experts. The interaction led the researcher to conclude that all branches of the bank concerned should be into green practices and not just select few of them. However, the banks must ensure that they offer quality, online banking facility that is reliable and stable for the purpose. Restricting the application of green practices to a select group of branches will amount to mere tokenism on the part of the banks. Banks with weak balance sheets may be inclined to attempt such tokenism. Me-tooism will prove counterproductive. Additionally, banks must persuade the affluent segment of their retail customers to patronise credit cards too and not just debit cards or ATM cards. These segment customers are cost-conscious and gives priority to comfortable liquidity levels and which is not inclined to patronise credit cards. The strategies, if implemented committedly, can raise the satisfaction levels of customers vis-à-vis the green products and services, leading to a corresponding rise in customer numbers and a corresponding rise in the top line and bottom line of banks.

Key words: *Diversity, Extra Mile, Green Products, Green Services, Me-Tooism, Top Line.*

Received 05 July 2021, Accepted 12 July 2021, Published 17 July 2021

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1.1 Theoretical background of the Topic

Going green is something every economic agent of the world is focusing on. Over the globe there have been continuous endeavours to manage the risk of climate change. India is confronting extreme climate conditions like floods, droughts, heatwaves etc., which lead to environmental degradation. Banks, being an active and conspicuous economic agent, have a role to play in the “greening” exercise, so to speak. In line with banks elsewhere in the world, our banks too have been trying to provide green products and green services to their business customers and retail customers. Banks need to ensure that their green banking practices lead them to focus on markets where the potential for payback is high. Banks should reckon the social implications of investing in green banking practices since the practices may not cut ice with certain segments of the customers. (Chaya, Rakshitha ,2021). Given the diversity (along various parameters) that characterises their retail customer base in particular, the banks must go the extra mile to convince the customer base to patronise their green products and services. Typically, the banks should start the exercise by ascertaining how they can render the products and services more effective and more user-friendly for the customers. After all, banks finance all economic units. Hence, they can persuade the units to go green in their operations by dangling the right carrots before them.

1.2 Review of literature

The following paragraphs provide a brief overview of previous research on the subject as well as the significant findings on the topic being researched. The review abstracts, the current state of knowledge in investigation. It emphasised the aspects that have been investigated, identifies the research gaps that emerge and explains how the current research is attempting to bridge that gap. In short, the intention is to “locate the present research in the existing body of research on the subject and to point out what it contributes to the subject” (Krishnaswami, Ranganatham, & Harikumar, 2016).

1. Reddy points out that green finance is an emerging concept in the field of finance (Reddy, 2018). Dearth of public finance to fund sustainable development and minimise the impact of climate change have emphasised the relevance of private funding for the purpose. Green finance that leverages private finance seeks financial support for sustainable development. The researcher suggests that the government intervene to raise the profitability of green projects. It can consider tax exemption, subsidies and concessional loans for green projects, thereby rendering them more competitive.
2. *Saikumari, Sunitha and Nandini* explain that the practice of green banking in India manifests itself in online banking, mobile banking, internet banking, green channel counters, e-statements, green loans, solar ATMs, among other things (Saikumari, Sunitha, & Nandini, 2020). The main goal of green banking is to save the customer’s time and cost. Naturally, it leaves the customers a satisfied lot.

3. *Gunjan* argues that green banking also called ethical banking, unlike traditional banking, targets promotion of environment-friendly banking (*Gunjan, 2020*). The researcher concludes that Generation Z is more supportive of green banking products and services than middle-aged citizens. However, there is no significant difference in the mean usage of green banking products by customers, irrespective of their educational qualification.
4. Online banking is the most convenient way for banks to go green and, as a result, benefit the environment (*Chelani, 2020*). This format of banking is also called virtual banking or internet banking or mobile banking or e-banking. Online banking is an electronic payment system in which a bank's customers can conduct variety of financial transactions through the bank's website. Banks also issue account-opening forms to customers online. Online banking leaves the customers a satisfied lot, since it minimises the pressure on their resources like time, energy, and money.
5. RBI states that green finance has been rapidly emerging as a priority for public policy (*RBI, 2021*). Upon review of the developments of green finance in India, RBI concludes that there has been some improvement in public awareness and financing options in India lately. Existing literature on the subject reveals that information making the rounds on green projects is asymmetric. Through improved information management systems, such asymmetry can be brought down significantly. Superior stakeholder cooperation could pave the path for sustainable long term economic growth.

1.3 Research Gap

The learned researchers have highlighted the relevant facts. However, how the banks should go about the task of raising the satisfaction levels of bank customers vis-à-vis the green banking products and services has not been focused upon by the learned researchers. Such a focus would have added value to their findings. Hence the present study seeks to bridge this gap.

1.4 Statement of the problem

Banks are ideally placed to do their best in the green space. But they do face a few challenges along the way, the main challenge being raising the satisfaction levels of the customers vis-à-vis green banking products and services. Hence the challenges must be properly identified along with the means of working around, which will in turn will help to frame the strategies to raise the satisfaction levels of customers vis-à-vis green banking products and services.

1.5 Scope of the Study

The study confines itself to the two major stake-holder categories associated with the green banking practices of banks, namely bank officers associated with green banking products and services and experts in the green banking practices of banks.

1.6 Objective of the Study

The objective of the study is to determine strategies that raise the satisfaction levels of bank customers vis-à-vis the green banking products and services.

1.7 Hypothesis Proposed to be Tested.

The study proposes to test the following hypothesis:

“Banks should not fear that some of their business borrowers may draw the regulator’s ire by polluting the environment, rendering the bank loan sticky”.

1.8 Research Design

The following paragraphs explain how the research is designed.

1.8.1 Research Methodology

The study is descriptive in nature since it is a ‘fact-finding’ investigation, aided by adequate interpretation. It focuses on certain aspects of the stated problem that can be expressed unambiguously. It collates descriptive information. The study is also analytical to an extent since it tests hypotheses and singles out and interprets relationships. Unlike a descriptive study, it employs advanced statistical techniques like chi-square test (Krishnaswami, Ranganatham, & Harikumar, 2016)

1.8.2 Sources of Data

Data for the study was gathered from both primary and secondary sources. Primary data has been collected from bank officers (numbering 50) and experts in the green banking practices space of banks (numbering 50).

1.8.3 Sampling Plan

The researcher employed the non-probability sampling technique owing to non-availability of some population elements for collection of data, etc. The study seeks to feel the range of conditions or the nature of the phenomenon. Time constraints and the time limit for completing the study precluded the application of the probability sampling technique. Under this technique, the researcher chose the purposive or judgement sampling method since it guaranteed the inclusion of all the relevant elements in the sample. Probability sampling plans could not ensure such a guarantee (Krishnaswami, Ranganatham, & Harikumar, 2016). The researcher settled for two categories of respondents, namely, bank officers (numbering 50) and experts in the green banking practices of banks space (numbering 50) eventually.

1.8.4 Data Collection Instruments

Interview schedules were premeditated and pre-tested specifically for the purpose of identifying the instrument's potential flaws. They were appropriately updated and finalised after receiving feedback, in preparation for distribution to respondents and the gathering of primary data.

1.8.5 Data Processing and Analysis Plan

The data collected was tabulated, interpreted, and statistically analysed. The researcher used Microsoft's spreadsheet programme, namely, MS-Excel 365 for data analysis, reporting and deployment.

1.8.6 Limitations of the Study

Primary data has at times been deduced by engaging with the respondents on the subject. It is possible that a certain degree of subjectivity, albeit negligible, has found its way in. But the researcher is convinced that it will not affect the accuracy of the findings of the study.

1.9 Analysis of Primary data collected from the 50 bank officers.

The primary data collected from the 50 bank officer respondents is analysed in the following paragraphs.

1.9.1 Strategies to raise the satisfaction levels of bank customers vis-à-vis the green banking products and services.

One view going the rounds has it that banks must strategize to raise the satisfaction levels of bank customers' vis-a-vis the green banking products and services. Hence the researcher requested the respondents to reveal strategies to raise the satisfaction levels of bank customers' vis-a-vis the green banking products and services. The following table contains their responses to the query.

Table-1

Strategies to raise the satisfaction levels of bank customers vis-à-vis the green banking products and services.

Strategies	Number of respondents
Banks should be obliged to persuade all their affluent retail customers to patronise credit cards	43
Banks should not fear they may stake their reputation by inadvertently financing projects that damage the environment	41
Banks with weak balance sheets should not be reluctant to take green banking seriously	39
Banks should be obliged to extend the remote deposit capture (RDC) facility consistently at least to their corporate customers to begin with	39

Banks should be obliged to stabilise the quality of online banking facility they offer across all branches and not select branches	36
Banks should not fear that some of their business borrowers may draw the regulator's ire by polluting the environment and the loan will turn sticky.	31
Banks should be inclined to appoint specially skilled officers to manage green projects	29

Banks should be obliged to persuade all their affluent retail customers to patronise credit cards, according to 43 respondents. Banks should not fear they may stake their reputation by inadvertently financing projects that damage the environment, according to 41 respondents. Banks with weak balance sheets should not be reluctant to take green banking seriously, according to 39 respondents. Banks should be obliged to extend the remote deposit capture (RDC) facility consistently at least to their corporate customers to begin with, according to 39 respondents. Banks should be obliged to stabilise the quality of online banking facility they offer across all branches and not in selected branches, according to 36 respondents. Banks should not fear that some of their business borrowers may draw the regulator's ire by polluting the environment and the loan will turn sticky, according to 31 respondents. Banks should be inclined to appoint specially skilled officers to manage green projects, according to 29 respondents.

1.10 Analysis of primary data collected from the 50 bank officers.

The primary data received from the 50 expert respondents is analysed in the following paragraphs.

1.10.1 Strategies to raise the satisfaction levels of bank customers vis-à-vis the green banking products and services.

One view going the rounds has it that banks must strategize to raise the satisfaction levels of bank customers' vis-a-vis the green banking products and services. Hence the researcher requested the respondents to reveal strategies to raise the satisfaction levels of bank customers vis-a-vis the green banking products and services. Their replies to the query appear in the following Table.

Table-2
Strategies to raise the satisfaction levels of bank customers vis-à-vis the green banking products and services.

Strategies	Number of respondents
Banks should ensure adherence to green practices by all branches of the bank although it could prove daunting	45
Banks should not fear that they may stake their reputation by inadvertently financing projects that damage the environment	44
Banks should ensure extensive coverage of centralised payments systems like NEFT and RTGS although it could prove daunting	44
Banks with weak balance sheets should not be reluctant to take green banking seriously	43
Banks should be obliged to persuade all their affluent retail customers to patronise credit cards	43
Banks should be obliged to stabilise the quality of online banking facility they offer across all branches and not select branches	42
Banks should not fear that some of their business borrowers may draw the regulator's ire by polluting the environment and the loan will turn sticky.	41
Banks should exploit the electronic payment system to the hilt	39
Banks should be inclined to install CBS across all bank branches	37
Banks should be obliged to extend the remote deposit capture (RDC) facility consistently at least to their corporate customers to begin with	28
Banks should be inclined to appoint specially skilled officers to manage green projects	21

Banks should adhere to green practices by all branches of the bank although it could prove daunting, according to 45 respondents. Banks should not fear they may stake their reputation by

inadvertently financing projects that damage the environment according to 44 respondents. Banks should ensure extensive coverage of centralised payments systems like NEFT and RTGS although it could prove daunting according to 44 respondents. Banks with weak balance sheets should not be reluctant to take green banking seriously according to 43 respondents. Banks should be obliged to persuade all their affluent retail customers to patronise credit cards according to 43 respondents. Banks should be obliged to stabilise the quality of online banking facility they offer across all branches and not select branches according to 42 respondents. Banks should not fear that some of their business borrowers may draw the regulator's ire by polluting the environment and the loan will turn sticky according to 41 respondents. Banks should exploit the electronic payment system to the hilt according to 39 respondents. Banks should be inclined to install CBS across all bank branches according to 37 respondents. Banks should be obliged to extend the remote deposit capture (RDC) facility consistently at least to their corporate customers to begin with according to 28 respondents. Banks should be inclined to appoint specially skilled officers to manage green projects according to 21 respondents.

1.11 Conclusions

Conclusions are inferences/generalizations based on the facts that are related to hypotheses. They are responses to the research questions or remarks of acceptance or rejection of hypotheses. As explained already, this study proposes to test the following hypothesis:

“Banks should not fear that some of their business borrowers may draw the regulator's ire by polluting the environment, rendering the bank loan sticky”. Hence H_0 and H_1 are as follows:

H_0 : Banks should fear that some of their business borrowers may draw the regulator's ire by polluting the environment, rendering the bank loan sticky.

H_1 : Banks should not fear that some of their business borrowers may draw the regulator's ire by polluting the environment, rendering the bank loan sticky.

A chi-square test was used to determine the relationship, if any, between the variables based on the primary data received from the respondents (refer Tables 1 and 2). The computation was done in MS-Excel, as shown in the table below.

	Category	Observed Values		
		Yes	No	Total
	Bank officers	31	19	50
	Experts	41	9	50
	Total	72	28	100
		Expected Values		
	Category	Yes	No	Total
	Bank officers	36	14	50
	Experts	36	14	50
	Total	72	28	100
		Yes	No	
	o-e	-5.0000	5.0000	
2		5.0000	-5.0000	
	(o-e)^2	25.0000	25.0000	
		25.0000	25.0000	
	((o-e)^2)/e	0.6944	1.7857	
		0.6944	1.7857	
	CV	1.3889	3.5714	4.9603
	TV			3.8415
	p			0.0259

The calculated value of χ^2 is 4.9603, higher than the table value of 3.8415 for an alpha of 0.05 at one degree of freedom. Hence the null hypothesis is rejected, and the research hypothesis is not rejected. $p=0.0259$ is the inverse of the one-tailed probability of the chi-squared distribution.

1.12 Recommendations

The following are the researcher's recommendations in the light of the findings arrived at:

1. Banks should ensure that all their branches are able to deliver green products / services to raise customer satisfaction levels vis-à-vis green products / services. If this must happen, banks must ensure that they offer quality, online banking facility that is reliable and stable. Requiring only a select bunch of branches to deliver green products / services would amount to tokenism and hence fail to raise customer satisfaction levels.
2. Possibly banks with weak balance sheets would be inclined to attempt such tokenism but then the move is bound to prove counterproductive for the bank concerned. Banks had better stay away from green banking altogether rather than be a me-too player in the green banking space, in such a case.

3. Banks should not fear that they will stake their reputation by inadvertently financing projects that damage the environment. If the bank acts in good faith and manages green banking with due diligence, no fault will lie with the bank. This is also true of banks that fear that the Damo cleans word of regulatory ire hangs over the business borrowers who pollute the environment, thus possibly jeopardising the loan they took from the bank and denting the customer satisfaction levels. Such overreaction on the part of banks is unfounded and unwarranted and will only dent customer satisfaction vis-à-vis green banking products and services.
4. Extending coverage of the centralised payments systems like NEFT and RTGS is no doubt a daunting task but then such extension is inevitable if the banks must customer satisfaction vis-à-vis green banking products and services. Additionally, banks must persuade the affluent segment of their retail customers to patronise credit cards. This segment of customers is cost-conscious and parsimonious. It patronises only debit cards.
5. Banks cannot afford the luxury of cutting corners by inadequately exploiting the electronic payments system or by selectively installing CBS across their branch network if they are to raise customer satisfaction vis-à-vis green banking products and services.
6. Banks should be obliged to enlarge the basket of their green products / services proactively by providing additional and more sophisticated green services like RDC to merchant-customers, to begin with. It will help the banks process the cheques deposited by their customers quickly and efficiently. This green practice can cut costs for the banks, raise the customer satisfaction levels and improve their bottom lines. However, provision of such services would require banks to appoint specially skilled officers for the purpose.

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THEORETICAL PERSPECTIVES ON GREEN HUMAN RESOURCE MANAGEMENT: A STUDY

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Abstract:

The growing role of sustainable development and its ecological aspect, in the development of modern company competitive edge leads to the popularization of the question of incorporating environmental practices into the area of human resource policy, referred to as Green HRM. The objective of this paper is to identify environmental HR practices embraced and to prioritize them in accordance with their effect on company sustainable development. The study revealed that the Green HRM concept how it protects the environment through its practice. However, the study has revealed that there is a strong positive relationship between the evaluation of the impact of individual activities within Green HRM on sustainable company development and their practical implementation. This research demonstrated that there is a strong relationship between the green HRM practices and its implementation resulted in safeguarding the environment so has to have successful organizational performance. This allowed in formulating the following conclusion that in order to increase the scope of the implementation of the Green HRM concept in enterprises, it is necessary to raise awareness and disseminate knowledge concerning the impact of Green HRM can have on sustainable development in organizations.

Key Words: Green HRM, Organizational Performance, Sustainable Development, and theoretical perspective

Article History

Received: 07/03/2021; Accepted: 26/03/2021

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1. Introduction

Across the world the birth of the concept of green HR has taken place due to green movement for protecting environment. Organizations now need to reach the goal of sustainable development without sacrificing tomorrow for today's benefits. The Organizations have started realizing the development of powerful social conscience and green sense of responsibility where corporate responsibility is not a selfless enjoyable to have but a business authoritative. In the organization the HR functions will become the driver of environmental sustainability within the organization by aligning its practices and policies with sustainable goals reflecting an eco-focus. The purpose of this study is to analyse Human Resource Management in enhancing green environment in and around the organization and its impact on ecology. It has been observed that corporates are showing keen interest in going green and hence have started adopting environment protecting techniques. The strategic outlook has started exploring green economic facets of the business in India and globe. Now a days the business environment is changing fast and very dynamically from a traditional way to modern in this corporate world.

The human exploitation and progressive degradation of the natural environment forced to bring the concept of sustainable development. Therefore, protecting natural environment and resource for future generation has become mandatory globally. This necessitated the organizations to redefine the operating strategy in the contemporary scenario of the business. The sustainable development paradigm not only deals with the attainment of economic goals but also with the necessity to give attention broadly understood social and ecological interests, laying foundations on which a sustainable business model based on the principles of value and social responsibility-oriented management can be built. Sustainable development is a concept responding to the global challenges related to human activity in both developed and developing countries. This new concept of civilizational development is the outcome of the need to mitigate and prevent the adverse effects of the economic development. It is a modern direction of the economic development, emphasising the introduction of the new methods of organisation and management, both on the national level and the levels of various economic entities, as well as on the replacement of the cumbersome technologies with the "environmentally-friendly" ones.

According to the World Commission on Environment and Development, sustainable development satisfies the needs of the present generation without jeopardising the ability of future (Bombiak & Marciniuk-Kluska, 2018) generations to satisfy their needs. Such development is intelligent, environmentally-friendly, based on the effective use of resources, knowledge and innovation. There are three basic dimensions of sustainable development - ecological (protection of the environment and its natural resources), economic (economic development that is not hindered, but stimulated by technological advancement and increased effectiveness in the use of resources, materials and workforce), social (improvement in the living conditions and safety of all people). The pursuant to the principles of sustainable development, the social, economic and environmental objectives are interdependent and mutually reinforcing. Thus, the development strategy of the company should consider the development of a balance between the economic, environmental and social dimensions of economic activity. This means the supported economic solutions should be socially responsible, environmentally friendly and economically valuable at the same time. It has been emphasised that a sustainable enterprise fosters sustainable development simultaneously offering the economic, social and environmental benefits (Bombiak & Marciniuk-Kluska, 2018).

The above explanation rightly says that our Environment creates both threats and opportunities for the society and for business, therefore decision makers should take it in to the consideration while making decisions. Hence, the green HRM is the use of HRM policies to promote the sustainable use of resources within the organization and more generally promotes the cause of environmental sustainability. For long term sustainability and development firms should not only focus on profit maximization but also actively take into consideration all environmental and social aspects which are affected and controlled by them. For future generation we have to protect our environmental resources so that they can thrive on it, the concept of green Human resource management pursues us to understand the need of balancing industrial development for profit and wealth creation and protecting our natural environment.

For application of green HR, the vital elements are environmentally friendly HR practices and the preservation of knowledge capital, it also needs technical soundness, good managerial

and influential skills between employees and upper management to develop innovation-focused environmental initiatives and programs that have an imperative impact on the sustainable competitive advantage of firms. For the implementation of green HR practices there should be training programs aimed at raising the employees' environmental consciousness. Course materials should be designed in such a manner that it should address towards the development of go green initiative and also foster the innovation for implementation of green HRM. For motivation to use and implement green HR practices there should be parameters in performance appraisal one can also include incentives or token of appreciation on use of green HRM practices. Developing effective monetary incentives can be challenging due to the difficulty of accurately and fairly evaluating environmental behaviours and performance (Gupta 2008). Even after a bunch of researches on Go Green still there is a gap that exists in implementation of green practices in organizations. There is an ever increasing need for the integration of environmental management into the broader human resource management (HRM) practices, popularly known as Green HRM initiatives (Karande & Bihade, 2018). Now the organizations are forced to adopt the green initiatives everywhere and putting lot of efforts to bring awareness among the employees of the green HRM and encouraging them to go green because it is causing heavy energy consumption and even cost of energy consumption is very high, environmental responsibilities and to monitor this the strict regulation and compliance regulations by laws is necessary.

2. Methodology

Firstly, the paper adopts a literature review approach beginning with indicating significant works on Green HRM research, integrating green HR with HRM and classifying the literature in a process model format of green HRM. To build the knowledge base in the field of green HRM the literature review is adopted as it is enabling the structure research. Some of the HR initiatives are recruitment, selection, training, development, appraisal, employee relationship, motivation, compensation and performance management.

3. Overview on Green HRM

Green human resources refer to using every employee touch point/interface to promote sustainable practices and increase employee awareness and commitments on the issues of sustainability. It involves undertaking environment-friendly HR initiatives resulting in greater efficiencies, lower costs and better employee engagement and retention which in turn, help organizations to reduce employee carbon footprints by the likes of electronic filing, car-sharing, job-sharing, teleconferencing and virtual interviews, recycling, tele commuting, online training, energy-efficient office spaces etc. In this green world the green HR or people management function has sustainability at its core as part of its people management and talent management focus and organizations engage with the society by aligning their agendas with it. Communities, customers and contractors all become equal stakeholders along with employees and shareholders(Green HRM, 2012).

4. Meaning of Green HRM

There are few scholars defined the meaning of green HRM in the existing literature. According to Renwick et al. (2008), the integration of Corporate Environmental Management into Human Resource Management is termed as green HRM. These scholars broadly specified that distinguished policies in the field of recruitment, performance management and appraisal, training and development, employment relations, pay and reward are considered powerful tools for aligning employees with an organization's environmental strategy. In 2013, these scholars again very shortly defined green HRM as the HRM aspects of environmental management. According to Jabbour(*Analytical and Theoretical Perspectives on Green Human Resource Management: A Simplified Underpinning*, n.d.), Santos, & Nagano (2010), the "greening" of functional dimensions of human resource management such as job description and analysis, recruitment, selection, training, performance appraisal and rewards is defined as green HRM. In 2011, Jabbour again defined green HRM as, "the level of greening of human resource management practices" in terms of functional and competitive dimensions of HRM.

From the above explanations and definitions, we could understand the green HRM as "it is function or practice of an organization and practice of HRM at all level and it is

environmental (green) orientation”. The basic concept of HRM is understood as objectives, functions, processes, activities, and strategies performed in an environment friendly such as green HRM means the manner in which the order to accommodate the needs of ecological sustainability. Green HRM refers to the policies, practices and systems that make employees of the organization green for the benefit of the individual, society, natural environment, and the business (Opatha & Arulrajah, 2014)(Ari et al., 2020).

5. Needs for Green HRM

The importance of sustainable green HRM is growing fast within the thousands of companies now a days an answer to the challenges and upheavals that climate change has brought, and threatens to bring into our world. In the capitalist world mainly, there is no way of denying the importance that companies have in the fight to prevent the temperature. Whilst the support of senior management is essential in a company’s execution of its sustainability management, so is the HR leaders’ strategic positioning of the HR function. Hence, the Green Human Resources Management really accountable for protecting the environment.

6. Process Model of Green HRM

A careful examination of the relevant literature demonstrates that there is no consensus about the indicators of GHRM or green human resource practices though several review studies have identified the indicators of GHRM. Some of the green process have been identified such as green employee empowerment, green learning and development, green employee relationship, green performance and evaluation, recruitment, green training, green performance management, and green rewards were widely used as the indicators of GHRM (Fig.1). Some of the aspects should be taken into considerations are job description/analysis, performance management, organizational culture, the role of unions in environmental management, organizational learning, and green healthy and safety were among the GHRM practices. Employees’ favourable perceptions of human resource practices trigger their work engagement or job satisfaction, which in turn engenders task performance, extra-role performance, service recovery performance, and/or innovative behaviour. These practices also lead to the accomplishment of competitive advantage. In light of this reasoning, we use

work engagement and job satisfaction as the two mediators linking GHRM to employees' task-related proactive green recovery performance and green voice behaviour.



Figure 1

7. Outcomes of Green HRM

In order to highlight the major knowledge advancements in green HRM research, first of all, this paper summarizes key conceptual themes of the field. They include meaning of green HRM, Process Model of green HRM, Outcomes of green HRM, and Stakeholders and Performance of green HRM. These key themes are evolved throughout the process of knowledge creation in green HRM and also going to shape the green HRM research domain in the future. Some of the benefits of Green HRM are listed as per the Parul Deshwal as, it helps in labour turnover and retaining employee, goodwill of the organizations will improve in the market and this helps in increasing sales, internal and external quality of the organizations will improve, it improves the stakeholder's engagement, it helps in reducing cost of natural resources, it gives competitive advantage, it stimulate innovation and creativity and hence, the organizations have to create green work force and at the end it must bring environment friendly policies.

8. Stakeholders and Performance of Green HRM

As there are good theoretical reasons and clear empirical evidence for firms to pursue environmental sustainability, this topic has become an influential one in many management sub-fields. It is relevant that most management disciplines, drawing on stakeholder theory, explored the impact of stakeholder pressures on the implementation of specific environmental management systems within the firm and, thereby, on environmental performance. For example, Supply Chain Management (SCM) research recently explored the impact of stakeholder pressures on the adoption of green SCM practices (Sarkis, GonzalesTorre, & Adenso-Diaz, 2010) and the role of customer and regulatory stakeholder pressures on the implementation of green SCM practices (Paulraj, 2009). Similarly, empirical evidence has been provided regarding the relationship between stakeholder pressures and the implementation of green logistics practices (Kim and Lee, 2012). Theoretically, the relationship between stakeholder pressures on environmental issues and environmental performance has been supported by arguing that effectively responding to green-related stakeholder pressures allows the company to develop the internal and external resources to improve environmental performance. In particular, it is argued that the company that effectively responds to its stakeholders is more likely to develop deeper and wider environmental-related processes (conceived as an internal resources) and to increase the access to external networks with which sharing competencies and information on environmental-related issues (Yu and Ramanathan, 2014).

All these studies suggested that the how different stakeholder pressures lead to the implementation of different environmental-related practices improving environmental performance to different extent. Such research has been important to understand how stakeholder pressures can be translated at the operational level and with which results. To our best knowledge, an empirical investigation of the relationship between the stakeholder pressures and the implementation of green HRM practices is still lacking. That is quite surprising because stakeholder theory – even in the seminal work by Beer and colleagues (1984) on the Harvard HRM model – has been widely recognized to be a key theory for understanding why firms adopt and implement specific HRM practices (e.g., Greenwood and Simmons, 2004; Diplboye, 2007; Colakoglu, Lepak, & Hong, 2006). Accordingly, in HRM

research, stakeholder theory has proven to be insightful, (e.g., Garavan, 1995; Guerci, Bartezzaghi, & Solari, 2010), managing change via HRM practices (Hussain and Hafeez, 2008; Lamberg, Pajunen, Parvinen, & Savage, 2008), and managing downsizing (Tsai, Rosa, Shu-Ling, & Ing-Chung, 2005). In particular, HRM literature provides three main reasons for adopting a stakeholder framework, which are inspired by the aforementioned values of stakeholder theory. The first reason – which is related to the instrumental value of stakeholder theory – is the managerial one, as clearly expressed. Human resource management practices cannot be designed solely to meet the concerns of the employees. Nor can they be designed by considering only their consequences for the bottom line. Organizations that are the most effective in managing people develop HRM systems that meet the needs of all key stakeholders” (2003, p. 28). That multi-stakeholder mindset is also a key requirement for the development of the HR function’s credibility (Ulrich and Brockbank, 2005). The second reason – which is related to the ethical value of the theory – is based on the idea that a stakeholder approach in HRM would result in higher perception of procedural and distributive justice (Simmons, 2008) and would prevent forms of inequality, conflict, subordination and manipulation (Greenwood, 2013). The final reason for incorporating a stakeholder orientation in human resource management – which is based on the descriptive value of that theory – is an analytical one. In order to continuously improve the description of the world as it is, scholars emphasize that the boundaries of the HR discipline should not be limited to some specific areas. On that, Dipboye wrote: “if any one constituency dictates what HR should be studying or definitions of the boundary of the discipline, HR fails as a science” (2007, p. 104).

Accordingly, HR research called for a more extensive use of stakeholder theory in order to improve the understanding of HR practices within firms. For example, Ferrary (2009) argues that the stakeholder orientation overcomes a purely instrumental approach to HRM (which reduces the interpretation of organizational conflicts to mere antagonism between employers and employees) and opens insightful avenues for understanding how HRM systems are determined by the interactions of a complex network of actors, as organizations are part of a political-economic system made of both internal and external stakeholders, who interact with and influence management practices. Accordingly, describing and explaining the HR-related

topics within companies cannot overlook at the societal embeddedness as an independent variable, since it has a relevant influence on the design of HRM systems and on their impact on organizational performance Paaue and Boselie (2009). In line with these arguments for the application of stakeholder theory to HRM, we advance our hypotheses connecting customer and regulatory stakeholder pressures on environment related issues to green HRM practices.

We argue that companies experiencing customer pressure to improve environmental performance are more likely to implement environmental management processes with that aim. Indeed, customer pressure can be related to external forces connected to the market in which the firm operates, which constitute a relevant input for HR-related decision-making processes (Paawue, 2004). The implementation of a HRM system aimed at satisfying customers is a general objective that many companies share, with variable emphasis depending on factors like the industry or the strategy of the organization. In addition, following the idea of a strategically targeted HRM system (Jackson et al., 2014), some companies are even implementing HRM systems with the specific aim to improve customer service (Chuang & Liao, 2010). As a result, we expect that a firm perceiving customer pressure for environmental sustainability is more likely to implement green HRM practices, and that such practices positively influence environmental performance. Given that we are considering three specific HRM practices (i.e., green hiring, green training and involvement, and green performance management and compensation),(Guerci et al., 2015)

9. Theoretical Frameworks for Green HRM (GHRM)

Green HRM is a relatively new agenda in management and HRM literatures. The concept of green HRM typically includes using less possible paperwork at all HR functions like recruitment & selection, training, performance review etc. to create a sustainable, environment friendly and competitive advantage through employee engagement. It is an emerging issue in management which might have substantial impact on broader corporate and strategic issues including HR practices and policies. Green HRM consists of all activities aimed at helping an organization carry out its agenda for environmental management to enable it reduce its carbon emission and earn carbon credits, as well as in areas concerning on boarding acquisition of manpower, the induction, performance management, training &

development, compensation & reward management. Firms can gain substantial achievement on the engagement, commitment, morale, quality of work life and retention through fair and equitable green human resource management(Hosain, 2016).

10. Suggestions

- HR Manager must focus on employee empowerment.
- Must encourage the green learning and development.
- Adequate support should be given in adopting green employee relationship.
- Green performance should be adopted and green evaluation should be carried out.

Total Green Culture should be adopted in an organization

- Green rewards and compensation must be given to employees.

Conclusion

From the above findings and researches, it can be concluded that with an appropriate planning, controlling, organizing and leading we can implement green HR practices in organization. Most popular outcome of green HR practices includes telecommuting, online training, teleconferencing electronic filing, and virtual interviews, job sharing, recycling, and developing more energy efficient office spaces. With society becoming more environmentally conscious, businesses are starting to include green proposals into their everyday work environment. Though it's tough in initial stages to implement green HRM practices but once they are implemented company gains sustainability and competitive advantage through ensuring corporate social responsibility. Thus, firms should adopt green HRM practices into day to day HRM activities.

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