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RESEARCH PAPERS



Implementing Circular Economy Principles in Hospital Operations: A Case Study on Sustainable Waste Management and Resource Recovery Strategies

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Mr. Amiya Ranjan Das

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The BIITM Business Review provides an academic forum for encouragement, compilation and dissemination of research on various aspects of management and business practices. It includes original empirical research as well as theoretical and conceptual works related to the field of management. It also publishes case studies, critical evaluation of existing business models and theories, and reviews of the latest books relevant to the corporate world.

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Executive Director's Message

As said by Malcom X, *“Education is the passport to the future, for tomorrow belongs to those who prepare for it today”*.

It is a matter of great pride to mention that BIITM has been able to carve a niche for itself in management education and is consistently able to develop globally competitive managers in keeping with the demands of the dynamic industry environment. Research plays a key factor in enhancement of this learning. At BIITM we are fortunate to have with us students who are keen to explore further, beyond the walls of their classrooms and textbooks, and faculties who encourage this effort.

In keeping with this effort, BIITM has been publishing its own ResearchJournal, BIITM Business Review (A Journal of Management Studies) to create an environment in which the students and the faculty can explore and advance the limits of knowledge. Addressed to management practitioners, researchers and academics, BIITM Business Review aims to engage rigorously with practices, concepts and ideas in the field of management with emphasis on providing managerial insights. The articles and papers published in this journal attempt to create a ripple effect in the field of management and empirically create a difference by equipping managers to make better decisions in their professional lives.



Mr. P. Balabantaray
Executive Director

Principal's Message

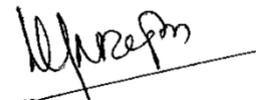
I am happy to present the Vol-13, No.2, 2022 issue of the BIITM Business Review. The journal is a blind peer-reviewed bi-annual journal, which aims to promote and disseminate research in different realms of management. The journal is a trailblazer for the new frontier of research, realizing the Institute's goal of creating intellectual eminence.

The BIITM Business Review bridges the gap between academia and corporate with high quality research-based articles. This, in turn, encourages the culture of research among the authors as well as the students of BIITM.

I take this privilege to thank the esteemed members of the newly constituted Advisory Board for being a part of our family.

I firmly believe that the current issue will be a reader's delight. It includes six research articles covering a wide range of topics from empirically researched finance articles to conceptual review articles on facility management.

I thank all the reviewers, authors and readers for their patronage over the years and look forward to their continued support in taking the journal to greater heights.



Prof.(Dr.) M.R Nayak
Principal

From the Chief Editor's Desk

It is with great delight that I am presenting to you the current issue of BIITM Business Review Vol.13 Issue No.2 (July-December 2022). The response from the authors and readers has been overwhelming. With each issue of the journal, we bring to you the latest and authoritative insights into the dynamic and fascinating world of business.

We have accepted six research articles on diverse interest areas like circular economy, Bancassurance, Emotional intelligence, Banking, Financial inclusion and e-waste Management.

I place on record my gratitude to the eminent scholars and authors for their valuable contribution to the quality of our research journal, BIITM Business Review.

Many experts devoted their time and talent in reviewing the papers, and making critical comments and suggestions for improving their quality. I am deeply indebted to all of them.

I owe a word of special thanks to our Chief Patron Mr. P. Balabantaray, Executive Director, BIITM, Prof. (Er.) P. R. Pattanaik, Advisor (Academic), BIITM and Patron, Prof. (Dr.) M. R. Nayak, Principal for their support to this academic endeavor, intended to promote, preserve and disseminate business research.



Dr Dhananjay Beura
Chief Editor
BIITM Business Review

Editor's Message

The BIITM Business Review is a peer-reviewed journal with an endeavor to publish the best-in-class, content-rich and research-oriented papers. The articles selected for the journal are intended to bring in deeper insights into the existing gray areas in Management and Business arena.

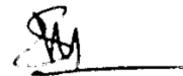
The contributors are committed to excellence and novelty of the articles so that they stand out uniquely as compared to other Management Journals. The papers published in this edition are both empirical and conceptual in nature.

It's my pleasure to mention that the papers published in the current edition of BIITM Business Review are nicely curated by the researchers. All the contributors have leveraged robust research methodologies to conclude their study so that the reputation of the journal is sustained.

I am looking forward to the continued support from the researchers for their valuable contributions to BIITM Business Review in future and making it a success as before.

I hope that we will provide a better version of BIITM Business Review in each and every new edition that is going to be published in future.

Wish you a happy insightful reading.



Dr. Sasmita Mohapatra

**Editor
BIITM Business Review**

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Implementing Circular Economy Principles in Hospital Operations: A Case Study on Sustainable Waste Management and Resource Recovery Strategies

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Abstract:

Hospitals are significant producers of waste, making the implementation of circular economy principles critical to reduce environmental impact and promote sustainability. This research examines the potential for implementing circular economy principles in hospital operations, focusing on sustainable waste management and resource recovery strategies. Using a case study approach, a sample of hospitals was examined to identify opportunities for reducing waste and increasing resource recovery through circular economy principles. The study found that the hospitals could implement circular economy strategies such as waste reduction, recycling, and repurposing of materials to improve sustainability. Challenges associated with implementing circular economy principles in hospitals were identified, including the need for stakeholder engagement, infrastructure improvements, and changes to organizational culture. However, potential benefits were also identified, including cost savings, reduced environmental impact, and improved public image. Overall, this research highlights the potential for hospitals to adopt circular economy principles in their operations to improve sustainability and reduce waste. By implementing sustainable waste management and resource recovery strategies, hospitals can play a vital role in promoting circular economy principles and reducing their environmental impact. The findings of this study provide insights for hospitals aiming to adopt similar approaches and contribute to the growing body of research on circular economy principles in healthcare settings.

Introduction:

The healthcare industry is a significant contributor to waste generation, with hospitals being one of the primary sources of waste. Hospitals generate a wide range of waste streams, including hazardous and non-hazardous waste, medical equipment, and pharmaceuticals. In addition to the environmental impact, waste generation in healthcare settings also has significant economic implications, as the disposal of waste can be costly. The circular economy is a sustainable model that promotes the reduction of waste and the efficient use of resources. The circular economy aims to design out waste and pollution by keeping materials in use for as long as possible, through strategies such as reuse, recycling, and repurposing. The circular economy is gaining attention as a potential solution to the environmental challenges associated with waste generation in healthcare settings. Circular economy seeks to minimize waste and promote the efficient use of resources, which reduces the impact on the environment and promotes sustainable practices. This is achieved by designing products and processes that are more durable, recyclable, and less wasteful. Sustainability, on the other hand, is a broader concept that encompasses economic, social, and environmental dimensions. It seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability focuses on long-term thinking and planning, and aims to create a balance between economic development, social progress, and environmental protection. Circular economy and sustainability are closely linked, as the principles of circular economy can help to achieve sustainability goals by reducing waste, conserving resources, and minimizing environmental impact. The combination of circular economy and sustainability can help to create a more resilient, equitable, and sustainable economy that benefits society and the environment.

Literature Review:

Circular economy principles are gaining attention as a potential solution to the environmental challenges associated with waste generation in healthcare settings. The circular economy aims to design out waste and pollution by keeping materials in use for as long as possible, through strategies such as reuse, recycling, and repurposing. The circular economy is based on the concept of closing the loop, where materials.

Chan, M. F., Wong, C. W. Y., & Lo, W. Y. (2021), provided an overview of circular economy principles and their application in the

Health care industry. The authors explore the potential for circular economy strategies to reduce waste and increase resource recovery in healthcare settings. Durusu-Ciftci, D., & Ikitelli, A. T. (2021) suggested comprehensive review of circular economy principles and practices related to healthcare waste management. It explored the potential for circular economy strategies to reduce waste and increase resource recovery in healthcare settings. De Jesus, L. C., Almeida, C. M. V. B., & Jacinto, M. J. C. (2020) examined the potential for circular economy principles to be used as a strategy for sustainable waste management in hospitals. They provide case studies of hospitals that have successfully implemented circular economy principles. Bartolini, F., & Brunori, G. (2019) they provided an overview of circular economy principles and their application in food waste management in healthcare facilities. They explored the potential for circular economy strategies to reduce food waste and increase resource recovery. Su, B., Heshmati, A., & Geng, Y. (2019) focuses on the construction industry, it provides a comprehensive review of circular economy practices that can be applied to other industries, including healthcare. They explored the potential for circular economy strategies to reduce waste and increase resource recovery in various industries. Corrado, V., Farello, G. E., & Buonocore, F. (2020).provided comprehensive review of circular economy principles and their application in the healthcare sector. The authors explore the potential for circular economy strategies to reduce waste and increase resource recovery in healthcare settings. O'Brien, C., & Begley, C. (2019) provided a practical guide for implementing circular economy principles in healthcare settings. They presented case studies of hospitals that have successfully implemented circular economy principles and provide recommendations for hospitals looking to adopt similar approaches. Rana, P., & Paulraj, A. (2021) provides a systematic review of circular economy principles and their application in the healthcare industry. They explored potential for circular economy strategies to reduce waste and increase resource recovery in healthcare settings and provide recommendations for future research. Singh and Jain (2022) discusses the circular economy-based approach to sustainable healthcare waste management in India. The study highlights the importance of adopting a circular economy approach for reducing healthcare waste and its environmental impacts. The authors propose a framework for sustainable healthcare waste management that involves waste reduction, segregation, treatment, and recovery. Muñoz-Mendoza and Rey-Cañas (2022), presents a case study on the recovery of surgical waste in a Spanish hospital. The authors argue

that surgical waste, particularly single-use plastics, presents a significant challenge to the circular economy transition in healthcare. The case study explores the potential for waste reduction and recovery through the implementation of circular economy principles. Teixeira, Dantas, and Cunha (2022), provides a systematic review of the literature on the implementation of circular economy principles in hospital waste management. The study identifies key challenges and opportunities for the adoption of circular economy principles, including the need for stakeholder engagement, regulatory support, and investment in waste management infrastructure. The authors also highlight the potential benefits of circular economy approaches, such as reduced waste generation, resource recovery, and improved environmental performance.

Case Study:

One example of a case study on implementing circular economy principles in hospital operations for sustainable waste management and resource recovery strategies is the University of California, San Francisco (UCSF) Medical Center. UCSF Medical Center implemented a comprehensive waste reduction and recycling program that includes waste reduction, recycling, composting, and the use of environmentally preferable products. The program includes recycling of traditional materials such as paper, plastic, and glass, as well as the recycling of medical devices and equipment. The program also includes composting of food waste, which is then used as fertilizer for the hospital's on-site garden, reducing the need for external fertilizer and contributing to the hospital's sustainable food procurement goals. Additionally, the hospital implemented a waste-to-energy program, which converts non-recyclable waste into energy through incineration. UCSF Medical Center's waste management and resource recovery program has resulted in significant waste reduction and cost savings. In 2018, the hospital diverted over 65% of its waste from landfill, saving approximately \$600,000 in waste disposal fees. The hospital's composting program alone saves over \$10,000 annually in waste disposal fees and external fertilizer costs. The program has also had a positive impact on the environment, reducing greenhouse gas emissions and conserving natural resources. Overall, UCSF Medical Center's waste management and resource recovery program serves as a model for other hospitals and healthcare facilities looking to implement circular economy principles for sustainable waste management and resource recovery strategies. Another

example of a case study on implementing circular economy principles in hospital operations for sustainable waste management and resource recovery strategies in India is the Manipal Hospitals chain. Manipal Hospitals is a chain of multi-specialty hospitals with locations across India. The chain has implemented several waste management initiatives aimed at reducing waste generation and increasing resource recovery. One key initiative implemented by Manipal Hospitals is the segregation of waste at the source. The hospital has designated separate bins for different types of waste, including biomedical waste, recyclables, and non-recyclable waste. The segregation of waste at the source has made it easier to manage and dispose of waste in a safe and environmentally-friendly manner. In addition to waste segregation, Manipal Hospitals has also implemented a composting program for food waste generated in its kitchens. The hospital uses the compost generated from the program in its gardens and landscaping, reducing the need for external fertilizer and promoting sustainable food production. Manipal Hospitals has also implemented a recycling program for non-biomedical waste, including paper, plastic, and glass. The hospital has partnered with local recycling facilities to ensure that the materials are properly recycled and do not end up in landfills. Overall, Manipal Hospitals' waste management initiatives have resulted in a significant reduction in waste generation and increased resource recovery. The hospital chain has been recognized for its efforts in waste management and has received several awards for its sustainable practices. Manipal Hospitals serves as an example for other hospitals and healthcare facilities in India looking to implement circular economy principles for sustainable waste management and resource recovery strategies.

Benefits of Circular Economy Principles in Hospital Operations:

1. **Reduced waste:** Implementation of circular economy principles can lead to significant reduction in waste generation, resulting in reduced environmental impact and cost savings for hospitals.
2. **Increased resource recovery:** Circular economy principles can facilitate the recovery of valuable resources from waste streams, reducing the need for raw materials and promoting sustainable resource use.
3. **Improved environmental sustainability:** Implementation of circular economy principles can reduce greenhouse gas emissions, conserve natural resources, and promote sustainable practices in hospitals.

4. Cost savings: Effective implementation of circular economy principles can result in cost savings for hospitals through reduced waste disposal fees and the use of recovered resources.
5. Improved public image: Hospitals that prioritize circular economy principles and sustainable waste management practices can enhance their public image and reputation as environmentally responsible organizations.

Challenges of Circular Economy Principles in Hospital Operations:

1. Limited resources: Implementing circular economy principles can require significant investment in terms of infrastructure, staff training, and equipment, which may be challenging for hospitals with limited resources.
2. Complex regulations: Hospitals must comply with complex regulations related to waste management and disposal, which may make implementation of circular economy principles more challenging.
3. Lack of awareness: Many hospital staff and stakeholders may lack awareness of the benefits of circular economy principles and sustainable waste management practices, which can hinder implementation.
4. Cultural barriers: Hospitals may face cultural barriers to implementing circular economy principles, such as resistance to change and a lack of buy-in from staff and stakeholders.
5. Technical challenges: Implementation of circular economy principles can be technically challenging, particularly in the case of hazardous biomedical waste and complex waste streams.

Road Map in Implementation of Circular Economy in Hospitals:

Implementing a circular economy in hospitals requires a step-by-step roadmap that addresses the challenges and opportunities of implementing circular economy principles in healthcare operations. Here is a general roadmap for hospitals to consider when implementing a circular economy approach:

1. Conduct a waste audit: A comprehensive waste audit will help identify the types and quantities of waste generated by the hospital, and can help identify opportunities for waste reduction, reuse, and recycling.
2. Assess the potential for resource recovery: Hospitals can assess the potential for recovering valuable resources from waste streams, such as energy, water, and materials.
3. Establish a circular economy team: A dedicated team can help ensure that the circular economy approach is integrated throughout the hospital, and can help identify opportunities and challenges associated with implementing circular economy principles.
4. Develop a waste management plan: The hospital can develop a waste management plan that outlines specific goals and targets for waste reduction, reuse, and recycling, and identifies the specific actions needed to achieve these goals.
5. Identify circular economy opportunities: Hospitals can identify opportunities to implement circular economy principles in areas such as procurement, supply chain management, energy and water use, and waste management.
6. Engage stakeholders: Engaging stakeholders such as staff, patients, suppliers, and regulators is critical for the success of a circular economy approach. Communication and engagement can help build support for circular economy principles and help overcome any resistance to change.
7. Implement circular economy initiatives: Hospitals can begin implementing circular economy initiatives that align with their waste management plan, such as source reduction, waste segregation, composting, and recycling.
8. Monitor and evaluate progress: Hospitals can monitor and evaluate progress towards their circular economy goals and targets, and adjust their approach as needed to ensure continued success.

Conclusion:

In conclusion, implementing circular economy principles in hospital operations, particularly in sustainable waste management and resource recovery strategies, has the potential to significantly reduce waste generation and promote sustainable practices within the healthcare sector. The case study presented in this paper provides evidence that a circular economy

approach can lead to improved waste segregation, reduced waste to landfill, and increased resource recovery. While the implementation of circular economy principles presents a number of challenges, such as the need for dedicated resources and stakeholder engagement, the benefits are significant. Hospitals can reduce their environmental impact, cut costs, and enhance their reputation by adopting circular economy principles. The road map provided in this paper can serve as a useful guide for hospitals looking to implement circular economy principles in their operations. By conducting a waste audit, assessing the potential for resource recovery, establishing a dedicated team, developing a waste management plan, identifying circular economy opportunities, engaging stakeholders, and monitoring progress, hospitals can successfully transition to a more sustainable, circular economy approach. Overall, implementing circular economy principles in hospital operations is an important step towards achieving a more sustainable healthcare sector. It is a win-win approach that benefits both the hospital and the environment, and can contribute to a more resilient, equitable, and sustainable economy.

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Bancassurance: A Successful Approach for Banks, Insurance Firms, and Customers in an Evolving Indian Banking Environment

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Abstract:

Bancassurance has developed into a desirable and lucrative addition to current financial services industry operations. Through joint ventures between banks and insurance companies and commission-based agreements, it is quickly gaining ground in India and is anticipated to become the norm. It takes care of the dual needs of marketing integration and portfolio diversification. Bancassurance offers an excellent model for product diversification and a low-cost channel of distribution for insurers, however there may be situations where these two things contradict. Due to the way Indian savers see insurance, there may be a conflict of interest between banks and the portfolios of insurance products. The possibilities of bancassurance in the banking and insurance industries will be covered in this paper. By retaining sensitive client data, banks may help the insurance industry.

Keywords: *Bancassurance, Strategic Challenges, customer, banks, insurance companies*

Introduction:

With a one-stop shop for banking and insurance needs, bancassurance has grown to be a significant distribution channel for insurers globally (Krishnamurthy et al., 2005). As a strategy for attracting new clients and boosting revenue streams, this idea has become increasingly popular in the expanding international insurance sector (Singhal & Singh, 2010). Banks now offer a variety of financial services, including insurance products, and are no longer only financial middlemen. Bancassurance gives banks the chance to cross-sell insurance products to their current clientele, creating new revenue streams while also giving clients a more complete financial package.

Given the extensive network of bank branches and the large population, which offers enormous potential for insurance companies, Bancassurance has experienced significant growth in India. More than 65,000 bank branches exist in the nation, with 75 branches per million people. Insurance companies can benefit from this large geographic reach and national consumer access by partnering with banks. Additionally, banks are better able to offer insurance products

that are tailored to their customers' needs because they have a better understanding of their customers' financial needs, saving habits, and life stages. Banks are the fastest-growing distribution channel for insurers since they have substantially lower distribution expenses than insurance companies (Teunissen, 2008).

Both insurers and consumers have benefited greatly from the growth of Bancassurance. According to Artikis et al. (2008), insurers can broaden their product offers, attract new clients, and generate more money. At the same time, consumers can gain from more distribution channels, the use of information technology measures, net selling, and enhanced transparency in addition to receiving reasonable and high-quality insurance coverage. Overall, Bancassurance has proven to be an effective method for the mass marketing of insurance goods and has grown to play a significant role in the financial services sector. Bancassurance is projected to spread even more in the future as technology and digitization becomes more widely used, giving customers a seamless banking and insurance experience.

Role of Bancassurance In Insurance Sector:

The Indian insurance market allowed private sector entry in 1999. Since then, 20 new companies have entered the market, 12 of which specialize in life insurance and 8 of which specialize in non-life insurance. These businesses employ a variety of distribution methods, such as direct marketing, brokers, traditional agencies, and bancassurance. Many businesses, especially SBI Life, view bancassurance as a significant or primary channel.

- Life insurance premiums make up a sizeable share of all insurance premiums paid globally and can be used to boost bank accounts.
- Through non-life insurance and the same distribution channels, banks hope to increase revenue from their current clientele.
- To lower the high cost of agent services, insurers are using other distribution channels.
- Compared to an agency partnership, bancassurance enables insurers to own and control customer connections, which results in cheaper costs and more control.
- Because banks and insurance companies share the same distribution networks and personnel, Bancassurance has a lower expense-to-income ratio in insurance-related activities.

- Marketing innovations brought on by the modernization of financial services are anticipated to be the driving force behind increased banking and insurance consolidation.
- By generating fee income through the sale of insurance products and cross-selling financial products, banks can raise their return on assets.
- Banks can market personal line insurance products and benefit from lower costs per sales lead and more brand recognition by using their reputation and branch network.
- Banks have technology expertise and marketing and processing skills, which improves transaction processing and customer service.
- Utilizing the strengths of banks and insurers, as well as correctly segmenting the market, are necessary for successful bancassurance.
- Bank partnerships can help insurers reclaim the middle-income market, as traditional agency networks have not been successful in reaching this group.

Bancassurance Benefits for Banks and Insurance Companies:

When banks offer insurance products to their clients, this practice is known as bancassurance (Peng et al., 2017). Insurance businesses are benefiting from this practice. Accessing new business from clients who were previously untapped—and may belong to a different demographic or geographic area than the insurer generally targets—is one benefit. Offering a larger selection of goods and services, such as banking services, has the added benefit of bringing in more customers from both current and potential policyholders.

One benefit of bancassurance is that it can allow insurers to provide products that are not practical through their current channels. This is a source of new revenue. When sales cost through traditional channels are too expensive, uncompetitive premium prices result, which makes it impossible to sell the insurance policies. However, the costs might be lower through the bancassurance channel, enabling the insurer to offer the product and reach out to new clients who might be intrigued by the special advantages it offers (Latorre Guillem, 2020).

This can assist insurers in diversifying their product offering and growing their clientele.

Bancassurance can also give insurers possibilities to gain economies of scale in administration costs by merging the administration functions of the bancassurer's company with their current operations (Gupta & Jain, 2012). For instance, if the bancassurers is a distinct business, the

insurer can offer to handle its administrative tasks, which would reduce costs and increase profitability. Future product pricing may become more competitive as a result, increasing the appeal of the insurer's offerings to consumers. Insurance companies can also invest in cutting-edge technologies and creative solutions to enhance their overall business operations by attaining economies of scale.

Learning and Improvements: Lastly, the bancassurance cooperation between a bank and an insurer offers a valuable chance for both sides to learn from one another and improve their own operations (Abiyyu et al., 2020). By collaborating closely, each business can learn about the management approaches, goals, and strategies of the other as well as the pressures that each faces. This may generate fresh thoughts and concepts for promoting customer happiness, process improvement, and efficiency. The value of this learning process will ultimately manifest itself when one or both of the companies are able to make adjustments that boost long-term performance and growth.

Bancassurance's Effect on the Insurance Sector:

Especially in emerging nations with low insurance penetration and few distribution channels, bancassurance—the supply of insurance services by banks—is a growing avenue for the distribution of insurance. Insurers are successfully utilizing bancassurance to establish a presence in these countries, according to a recent sigma report. North America's penetration of bancassurance is lower than that of Europe because of regulatory limitations. However, as restrictions have been relaxed, bancassurance is becoming more and more popular in Asia, particularly China (Yldrm, 2014). Regulation concerns, product complexity, and social and cultural issues all have an impact on how well bancassurance performs in a given market. Governments privatizing healthcare and pension obligations and new entrants using bancassurance to compete with established firms have a beneficial impact on the future of the industry. Given the relatively low penetration of bancassurance in emerging markets, significant growth in bancassurance is anticipated in the upcoming years.

Emerging Trends:

Bancassurance has developed from focusing on the mass market to carefully segmenting the market, leading to products that are specifically designed for each segment. Some bancassurers have switched from a standardized, single channel sales approach to adopting a multiple channel distribution strategy in order to achieve further growth and target particular client segments (Shah & Salim, 2011). Although direct marketing and Internet banking are just beginning to be accepted by banks as tools to distribute insurance products, face-to-face interaction is still preferred in some markets, favoring the development of bancassurance.

In addition, new and developing channels are becoming more competitive as a result of the real cost savings included in product pricing or owing to the allure of innovation and convenience. Along with a laser-like focus on specific clientele groups and the distribution of non-life products, bancassurers are also concentrating on the marketing of more complex products. The need for product diversification arises as bancassurers become aware that an inordinate dependence on a few items could result in excessive revenue volatility. Recognizing the potential for growth and financial gain in providing a wider range of insurance products, bancassurers have demonstrated a willingness to expand their product portfolio beyond those related to bank products.

Strategic Challenges:

The previously mentioned changing nature of bancassurance presents traditional bancassurers with the following difficulties:

- As the economy transitions from production to pure distribution, banks will need to better balance their own interests with those of their many suppliers. Banks will need to make sure that the interests of various suppliers, such as insurers and reinsurers, are in line with their own as bancassurers place an increased emphasis on distribution rather than product manufacture. To ensure that suppliers are motivated to contribute to the bank's objectives, this can necessitate negotiating more complicated agreements.
- In order to increase non-life product sales, complex products and risk management are needed, to the extent that those risks are taken on by the banks. Banks will need a thorough grasp of the risks associated with these products as bancassurers broaden their product offering to include non-life goods like property and casualty insurance.

To guarantee that the bank's exposure to risk is adequately managed, this may include investing in more complex product design and underwriting capabilities as well as risk management systems.

- The increased cost of maintaining those policies should be compared to the sale of non-life products. Non-life products may provide bancassurers with additional sources of income, but they also come with greater maintenance costs for those policies. Whether the potential revenue from these products justifies the expenses of servicing them will require careful consideration on the part of the banks.
- Due to an increase in the frequency of non-life insurance claims, banks will need to be ready for potential customer relationship interruptions. Customers may incur more frequent claims for property damage or other losses when bancassurers sell more non-life products. As a result of these claims, banks will need to be ready to handle any alterations to their client relationships that may occur. One way to do this is by offering exceptional customer service and processing claims.

Discussion:

The ability of banks to retain strong client relationships is a key factor in the success of bancassurance, which is the distribution of insurance products by banks. In order to fully profit from the potential advantages of bancassurance, it is necessary for banks in India to concentrate on enhancing their customer service. Fortunately, this move is now possible because to a shift in perspective in India's banking industry. Additionally, it is a good time for banks to adopt bancassurance because of the proactive policy environment that has been established by regulatory bodies and the government (Nithya & Chitra, 2019).

In contrast to other industrialized nations, where there is a greater emphasis on mechanized and automated banking channels like online banking and ATMs, banks in India are still mostly branch-oriented and manually operated. Because of this, the Indian banking industry is well suited for the growth of bancassurance. In order to provide clients more insurance options, regulators might encourage this trend further by enabling banks to enter into tie-up agreements with various insurance providers.

Conclusion:

The potential of bancassurance has been acknowledged by Indian banks, and some are even acquiring equity holdings in insurance firms as a long-term plan. This pattern resembles what was seen in the UK and other nations, where banks began as insurance distributors before transitioning to fully-owned insurance businesses. In India, bancassurance is more likely to become the rule than the exception in the future.

However, closer and more systematic coordination between banking and insurance regulators is required to address supervisory concerns regarding bancassurance. Both at the institutional and regulatory levels, there needs to be a distinct distinction between the activity of the two sectors. Any opposition to the adoption of bancassurance can also be addressed with the aid of sufficient training and rewards for bank employees. In general, the bancassurance strategy has the potential to be advantageous for all parties, including clients, insurers, and banks. By implementing bancassurance, banks in India can enhance their interactions with consumers, expand their revenue sources, and offer clients more insurance options.

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Impact of Emotional Intelligence on Job Satisfaction

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Abstract:

Wage earners are the foundation of the establishment and many policies are applied to forge them work productively. Wage earners achievement and efficacy in the employment relies on several components. Behavior is one of the most important components by which we understand others behavior which is the outcome of emotions. Higher Emotional Intelligence (EI) improves everyone's performance. EI is one of the indispensable competencies and potentialities which are essential by employers and employees to confront the climate variations and also loyal which could give rise to company's successfulness. Job Satisfaction (JS) is a worker's satisfaction with atmosphere and work in the organization. If the emotional intelligence is high then sentiments of those people inclined to be more optimistic than pessimistic; on the contrary, Job Satisfaction is more an emotional view point than unemotional. The aim of this paper is to discover the interconnection among the degree of EI and JS among banking employees. This article explored the stress level of employees, capability to handle strain and in what way they act against displeasing clients. The population of this paper was banking employees of both private and public sector banks in Bhubaneswar, Odisha. The samples were collected randomly from public and private sector banks in Bhubaneswar, Odisha. Data was analyzed with the help of Chi-Square.

Keywords -: Emotional Intelligence, Job Satisfaction, Behavior.

Introduction:

The word "Emotional Intelligence" (EI) initially introduced by Salivary & Mayer in the year 1990. Human resource development is the most vital component for attainment of organizational goals, success and development. For goal attainment, the pre-eminent surroundings must be introduced so that the employees will attain their assigned job in commending climate with propensity and satisfaction. JS is a outcome of psychological reciprocation of worker towards work; this psychological reciprocation is a consequence of expected results from the wage earners job (Jorfi, Yaccob, & Shah, 2011). JS is a demonstrative alliance of a wage earner has with his/her work (Tett, Fox, & Wang, 2005). It is an attitude introduced by a wage earner in the course of time in employment, therefore the methods of calmness and annoyance diverges with them (V. D. Kosteas, 2007). Designated that up-gradation is an indicator to amplify JS .EI asserts to the proficiency of initiating the ideas cleverly. EI indicates to formulate of gained potentialities and propensities which forecast effective outcome at residency in the running and serviceable surroundings (Smith, Heaven, & Ciarrochi, 2008). Authoritative power having these capabilities, normally from the viewpoint of EI are less despondent, exceptionally energetic conditions of employment and admires eye-catching reciprocations. Various researchers have defined that EI has been performing crucial role in contemporary operating environment. The perspective of EI assists in exploring employee's outlook, manners of monitoring, interactive competencies and capabilities. HR practices like planning, recruitment, selection and reporting proclaims more importance (Serrat, 2009). The common assumption is that human being who are confounded with substantial EI can achieve the conveying prospective to understand the likely be wildering set of affairs leads to comprehension. Human beings with standard EI will not be comparatively attaining the surpassing incomplete occurrences. Wage earners accompanied by blazing EI are anticipated to influence the emotions of the human beings throughout in a way that they will be to locate all their movement into their work and to make others accommodating enthusiasm (Cooper, K., & R., 1993). Many researchers have explained diversified assumptions about the association among EI and JS. (Kafetsios & Zampetakis, 2008) identified substantial or moderate relationship among EI measured and JS. (Travellas, Gerogiannis, & Svarna, 2013) divulges crucial pragmatic relationship among EI and JS.

Emotions

- ❖ Emotions are composition of particulars which comprehends regarding what way you are facing with your society.
- ❖ Emotions are accomplished inwardly and communicated outwardly.
- ❖ Emotions are structure of spirit and which yield inspiration.
- ❖ Emotions are both knowingly and unknowingly initiated.
- ❖ Emotions are improved through social integration and frame of mind of a person.
- ❖ Emotions are powerful social signals.
- ❖ Emotions can regulate behavior.

Intelligence

Intelligence is derived from the Latin word "Intelligentia" that mean 'to choose between' and 'to make wise choices'. Intelligence refer to the range of behavior from dull to bright, slow-witted to quick witted or stupid to clever. The meaning of intelligence may vary from culture to culture.

Emotional Intelligence

In 1920 Thorndike for the first time introduced Emotional Intelligence. EI has its origins from Social Intelligence. The denomination "Emotional Intelligence" is an essential element of social intelligence which has potentiality to govern and comprehend sentiments and emotions of others and one's own and to point out one another . The perspective of pure EI theory integrates both intelligence and emotion. EI is very exceptionally crucial than intellectual intelligence and technical skills combined in terms of accomplishing tasks at work. EI influences pragmatically on team performance (Naseer, Chishti, Rahman, & Juman, 2011). EI is not about being nice all the time, it is about honest. EI is not about being touchy-feely; it is about being aware of your feelings and those of others. EI is not about being emotional; it is about being smart with your emotions. For the personal and professional success EI is important. Divergent research reveal that EI plays a crucial role in job performance, specifically in jobs that demand high degree of social interaction.

Job Satisfaction (Syptak, J., Marsland, D., & Ulmer, D., 1999) defined as "peoples' affective relation to their work role and a function of the perceived relationship between what they

wanted from the job and what they perceived it was offering". JS was a tough structure to access between workers as they were not integrated in their view points about what build their careers productive (Shann, 1998). Stress was also a component which impacted employee job satisfaction. JS was low when negative stress was high (Bavendam Research, inc, 2000). JS is a worker's satisfaction with atmosphere and work in the organization. The employees attained all their wants and needs those are having pragmatic insight into the job. If the emotional intelligence is high then sentiments of those people inclined to be more optimistic than pessimistic; on the contrary, JS is more an emotional view point than unemotional (Lee, 2012). JS can be contemplated as a worldwide sentiment in respect of job or paradoxically as a linked prediction of feelings about divergent features of job. JS mentions a human being's sentiment which is common towards his work. Vital components that lead more JS is work for the psychological provocation, the recognition it earns, an exponent. Robbins viewed that office-bearers inclined to elect professions that allow them chances to utilize their potentialities and capabilities and permit tasks be different, autonomy and criticism to access how well the worker works.

Literature Review

(Ismail, A., Suh Suh, Y., Ajis, M.N.E., & Dollah, N.F., 2009) initiated that EI moderated the outcome of work pressure on JS. Workers could subsist physical and mental pressures which may give rise to excessive work achievement in the employment; so they required to evolve their competencies in the field of transpersonal, intrapsychical, resilience, stress management and overall sense. (Trivellas, P., Gerogiannis, V., & Svarna, S., 2013). disclosed that EI has effect on turn over intent and JS, as workers who can evaluate and communicate their sentiment are better appreciated and welcomed by others. Employees who are emotionally intelligent has the capability to assess what the primary concern is or perfect move in specific circumstances; in case of independent decision making JS is very significant and the dedication will be even much more significant (Choi, D., Oh, I. S., Guay, R. P., & Lee, E., 2011). It has been explored that workers having excessive EI are more contended with their job than the workers having subtracting EI (Wong, Wong & Law, 2007). EI is a estimation of communal and sentimental proficiencies and can be described as "the ability to monitor one's own and other's feelings and emotions to discriminate among them and use this information to

guide one's thinking and actions" .Individual performance influenced by EI. Individuals are a composite categories of sentiment and motive. Whereas motive allows them to estimate objects with numerical perfection, sentiments assist them to comprehend and identify what mark them "human". Conventionally it was considered and undertaken that individual having excessive logical thinking and a resonate rational bend of mind were more brilliant. (Gunu, U., & Oladepo, R. O., 2014) found a remarkable association among employees' EI and organizational commitment.

Research Question

Whether there is any association among EI and JS of banking professionals?

Problem Statement

Current study outlined to investigate the association among EI and JS amidst banking professionals.

Aim of the Research

The aim of this paper is to discover the interconnection among the degree of EI and JS amidst banking employees.

Research Design

For this explanatory study, survey method was used.

Sample Size

100 bank professionals were randomly selected.

Research Instrument

Questionnaire was used as the research instrument for data collection. The interviewees gave their response on a 5 point Likert Scale.

Data Analysis

Data was analyzed by using chi-square test.

Research Hypothesis

H1 : A remarkable association in EI and JS among banking professionals due to variations in age and qualification.

H2 : A difference in the degree of EI and JS amidst banking professionals due to variations in age and qualification.

Table No-1: Observed Value

Emotional Intelligence	Job Satisfaction		
	Age	Qualification	Total
Age	60	20	80
Qualification	70	50	120
Total	130	70	200

Expected Value:

$80 \times 130/200 = 52, 80 \times 70/200 = 28, 120 \times 130/200 = 78, 120 \times 70/200 = 42.$

Table No-2: Expected Value

Emotional Intelligence	Job Satisfaction		
	Age	Qualification	Total
Age	52	28	80
Qualification	78	42	120
Total	130	70	200

Applying χ^2 test

$$\frac{O_{ij}E_{ij} - E_{ij}(O_{ij} - E_{ij})^2}{E_{ij}}$$

60	52	8	64	1.23
20	28	-8	64	2.28
70	78	-8	64	0.82
50	42	8	64	1.52

$\chi^2 = 5.85.$

Degrees of freedom = (c-1) (r-1)

$= (2-1) (2-1)$

$= 1.$

At 5% level of significance, one degree of freedom the tabular Value of χ^2 is 3.841. The calculated value of χ^2 is greater than its table value. Consequently, the null hypothesis is rejected, and the alternative hypothesis is accepted. That's why we conclude that there exists a variance in EI and JS among banking professionals due to variations in age and qualification.

Conclusion

The outcomes of the current research revealed that there is a difference among EI and JS among banking professionals because of differences in age and qualification. Research objectives of this study are met accordingly. If employees perceive a positive opinion about their workplace as compared to opponents, it will make employees more reliable, accountable, faithful, and enthusiastic and devoted for organization. Job Satisfaction help to improve the organizational efficiency and effectiveness by building reciprocal reactions among employees. Management of the banking sectors must think of taking actions to build and maintain a high level of job satisfaction among banking professionals. The age and educational qualifications of participants is examined to see whichever there is a variance in JS and EI with reference to demographic characteristics. The outcomes reveal that wage earners qualifications in their job create variances in their JS along with their age. JS is among the most vital matters regarding organizations because it is the outcome of some organizational behavior matters along with the pioneer of many management outputs. Consequently, managers always have to contemplate this concept. If the emotional intelligence is high then sentiments of those people inclined to be more optimistic than pessimistic; on the contrary, JS is more an emotional view point than unemotional (Lee and Ok, 2012). JS mentions a human being's sentiments which are common towards his work.

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Comparative Analysis of Financial Health of SBI and HDFC Bank in India

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Abstract:

The financial health of the banking industry must be considered in light of the economic expansion. Thus, the purpose of the study is to evaluate the financial health of selected public and private sector banks in India. For this, selected seven key parameters were taken into consideration. Such as NIM%, Cost to income (CI)%, Net NPA%, ROCE%, ROA%, ROE% and CAR%. It also investigated the significance of particular banks' financial performance through the independent t-test. Based on the comparison results of both the chosen bank, Over the course of the research, it emerged that HDFC Bank has better financial health than SBI. The suggestions are also provided for the improvement of banking indicators. The study also addressed the limitations. Further studies can be done with additional financial ratios. Academicians, bankers, practitioners, and investors will be benefited from this study by learning more about the chosen financial banking indicators and making wise investment decisions.

Keywords: Bank, Comparative study, financial performance, financial health, SBI, HDFC, Banking parameters, financial ratios

1. Introduction

Banks are monetary organizations whose daily operations rely on money given to them by clients. The strength of a nation's banking system has an impact on economic stability as well (Irawati et al., 2019). Hence the financial stability of banks is crucial to the financial system since banks have been essential to the functioning of an economy (Agbeja,2015). Financial analysis is an approach for evaluating a company's financial reports using a range of strategies to pinpoint the firm's economic advantages as well as its drawbacks (Aspal and Nazneen, 2014). Any financial organization that wants to maintain and safeguard the interests of its stakeholders must regularly evaluate its financial condition (Gautam, 2020). As a result, financial performance analysis is frequently referred to as a financial health assessment for every corporate concern.

The purpose of the study is to analyze the financial health of selected public and private banks in India. It also analyzed the selected key parameters of banks which highlighted the financial performance of the chosen banks and also investigate the significance of particular banks' financial performance. The suggestions are also provided for the improvement of banking indicators.

The present study is structured in the following manner. Section 1 is covered with a background of the study. A review of earlier studies is given in Section 2. In Section 3, the research methodology is highlighted. The analysis results are presented in Section 4 along with a discussion, and the findings and suggestions are addressed in Section 5. Limitations and future scope are highlighted in Section 6 and the last section wrap-up with a conclusion and references.

2. Literature Review

To measure the financial performance of the banking sector, many of the studies have been associated with different banking parameters. Such as efficiency metrics, liquidity ratios, asset quality metrics, solvency ratios, growth ratios, valuation ratios, etc. Numerous empirical studies examined the relationship between factors affecting working capital and banking performance in different nations (Senan et al., 2021; Godswill, 2018; Isayas, 2022). To assess the profitability of banking sectors, the CAMEL model has been also adopted by many researchers (Biswas, 2014; Gautam, 2020; Haralayya and Aithal, 2021; Muhmad and Hashim, 2015). Various research has been also done on the basis of measuring the impact of capital structure and banking profitability. From their study, it concluded that the correlation results of financial leverage and banks' profitability are inversely connected (Balasubramaniam and Ramasubbian, 2019; Vyas, 2020; Salehi and Biglar, 2009). It has been also observed from the previous literature that there is no. of factors that affects the performance of banks. Such as Taxes, costs associated with overhead, worker efficiency, and inflation, and all have an impact on Chinese banks' profitability (Tan, 2016). Inflation has a favorable impact on ROE while GDP growth and inflation have a considerable negative relationship with ROA (Brahmaiah, 2018). The factors that influence commercial bank profitability in Mexico assert that capitalization, commissions and fees, and cost-cutting measures all contribute to the banking industry's ongoing prosperity (Chavarín Rodríguez, 2015). For measuring asset quality, NPA

is always considered one of the major parameters. From the past study, it found that NPA and non-interest expenses have an unfavorable effect on bank profitability, bank size, liquidity, and interest rate margins have a favorable impact (Albulescu, 2015). While management effectiveness and capital adequacy have an impact on bank profitability during the financial crisis, the risk associated with credit and the rate of inflation has an impact on both ROA and ROE (Căpraru and Ilnatov, 2014). The capital adequacy ratio and solvency ratio were shown to have a strong negative link with ROA, but size, GDP growth, loan-to-deposit ratio, expense ratio, and productivity had a significant positive correlation with ROA (Mohanty and Krishnankutty, 2018). Numerous types of research on the effectiveness of banks have already been conducted. Despite the fact that banks' profitability and efficiency have become the most intriguing subject for analysis. In light of economic expansion, it is important that the banking industry's financial health be taken into consideration. Thus, the purpose of the study is to evaluate the financial health of selected public and private sector banks in India. For this, selected key parameters were taken into consideration.

Net Interest Margin (NIM)%

It is determined by dividing Net income by Total assets. NIM is a measure of a bank's core lending operations' income. A rise in net interest income boosts a bank's profitability (Claeys and Vennet, 2008; Dumičić and Rizdak, 2013; Mohanty, 2021).

Cost-to-income (CI%)

It is also employed as a key driver of banks' profitability and is known as cost efficiency (Pasiouras and Kosmidou, 2007). This ratio is used to determine how effectively managing expenses affects a bank's profitability. A higher ratio denotes a worse efficiency of administration.

Net NPA%

Non-performing assets are those that eventually generate income from interest collected on loan principal and interest-only payments. Non-performing assets are a good indicator of a bank's overall viability (Gaur and Mohapatra, 2021). NPAs have a negative effect on the profitability of the banks, according to the vast majority of previous research that has looked at the connection between the non-performance of loans and the profitability of banks (Das and Uppal, 2021; Bawa et al., 2019; Kumari et al., 2017).

ROCE%

To compare the profitability of various financial institutions depending on the quantity of capital they apply, ROCE is a useful indicator. "Return on Capital Employed (ROCE) is a financial metric that demonstrates the profitability of an enterprise and the effectiveness of capital allocation." (Senan et al., 2021).

ROA (Return on Assets) %

Because of their obvious benefits, profitability ratios like return on assets are frequently employed to gauge bank performance. When the leverage impact is taken into consideration, ROA gives a credible indicator of shareholder value. Many studies have considered ROA as a key financial indicator that determines the profitability of the banking sector (Lee and Kim, 2013; Mohanty, 2021).

ROE (Return on Equity) %

ROE provides a direct evaluation of the financial return on a shareholder's investment. It has been observed from previous studies that to measure financial efficiency ROE parameters were analyzed (El-Ansary and Al-Gazzar, 2021; Gautam, 2020).

CAR%

Capital adequacy ratio (CAR): The strong and positive association between capital adequacy and earnings indicates that banks with larger equity capital are viewed as more secure and this perception might transfer into greater profitability in Nigerian banks (Agbeja et al., 2015).

Capital adequacy has long been regarded as the criterion and key indicator to determine a bank's stability and soundness (Aspal and Nazneen, 2014). A bank that has a high CAR will be better able to manage financial risks (Irawati et al., 2019).

As per the study variables based on the previous literature, the following hypothesis is formulated.

H0- There is no significant difference between the financial performance ratio of SBI Bank and HDFC Bank.

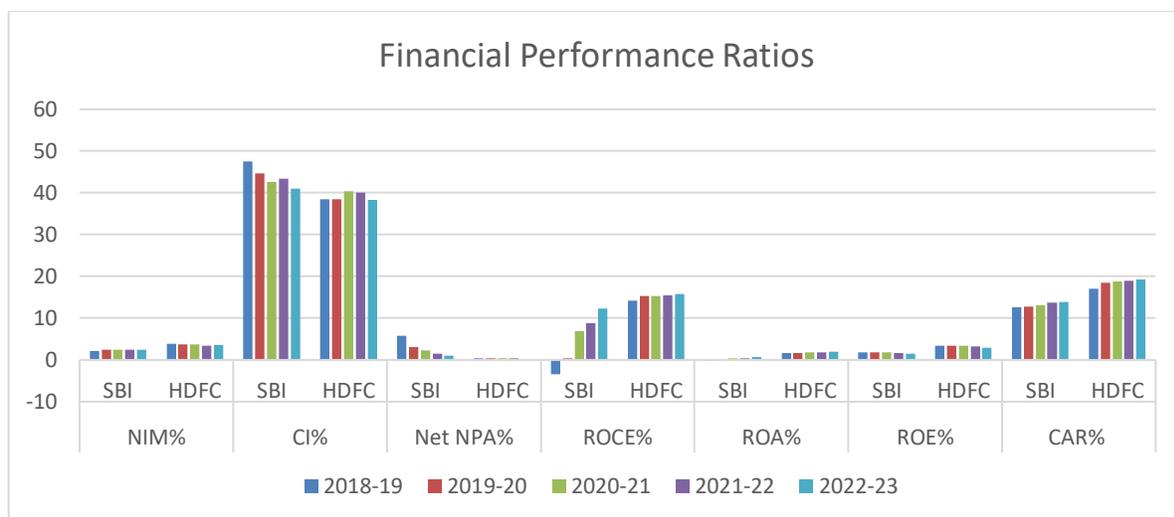
H1- There is a significant difference between the financial performance ratios of SBI Bank and HDFC Bank.

3. Research Methodology

As per the RBI report, SBI (State Bank of India) as a public sector bank, and HDFC bank (Housing Development Finance Corporation Limited) as a private sector bank are currently trending as the best banks in India based on banking metrics. Thus, the current paper focused on the comparative analysis of the financial health of SBI and HDFC banks. According to the previous literature, the present study is based on 7 selected financial performance ratios of banks such as NIM%, CI%, NPA%, ROCE%, ROA%, ROE%, and CAR% which are helpful to analyze the financial health of chosen banks. SBI and HDFC data for the years 2018–19 to 2022–23 are considered. To examine the improved financial standing of the selected banks, the independent t-test is used. For the purpose of obtaining the descriptive statistics results, SPSS-26 s/w is employed.

4. Data Analysis and Results

4.1. Graphical presentation of Financial performance ratios:



Source: www.moneycontrol.com

Figure 1: Graphical presentation of Financial performance ratios

Figure 1 demonstrates the 7 selected key banking financial performance ratios from the period of 2018-19 to 2022-23 of SBI and HDFC Bank. According to the NIM%, there is a fluctuation of % of both the banks throughout the study period. It also shows that the fluctuation is more in HDFC Bank than in SBI. Concerning CI%, there is also variation found in both the banks

and SBI has more CI% compared with HDFC. Net NPA% is consistently decreased in both banks throughout the year. In comparison with SBI, HDFC Bank has a low Net NPA%. About the ROCE%, in 2018-19, it was showing a negative figure by SBI. After that period the percentage has been increased till the last financial year. Meanwhile, HDFC has shown steadily increased ROCE% over the study years. ROA% in SBI was showing again negative percentage in the year 2018-19, but after that year it has been enhanced, whereas HDFC has shown an increased figure. In comparison with SBI, HDFC has a good ROA %. According to ROCE%, both have shown positive figures and increased in the last 5 years. Concerning CAR%, both the banks have increased in the study period but based on the comparison, HDFC has a good CAR%.

Descriptive statistics of Financial performance ratios

**significant at a 95% confidence interval.

Financial Performance ratios%	Bank	Mean	SD	Sig. value	Df	t-value
NIM	SBI	2.38000	.126491	0.000**	8	-14.102
	HDFC	3.65000	.156684			
CI	SBI	43.82200	2.458398	0.004**	8	3.954
	HDFC	39.13600	.989232			
Net NPA	SBI	2.69800	1.854743	0.022**	8	2.832
	HDFC	.34800	.053572			
ROCE	SBI	1.69200	.167242	0.000**	8	-14.447
	HDFC	3.25600	.175014			
ROA	SBI	.25600	.329439	0.000**	8	-9.888
	HDFC	1.79400	.111490			
ROE	SBI	5.03200	6.397947	0.008**	8	-3.529
	HDFC	15.17600	.618369			
CAR	SBI	13.20800	.572075	0.000**	8	-11.778
	HDFC	18.51600	.829596			

Figure 2: Descriptive statistics of Financial performance ratios

The above table is showing the descriptive statistics summary of the independent t-test. The summary is addressing the mean value, standard deviation, significant value, and t-value of financial performance ratios such as NIM%, CI%, Net NPA%, ROCE%, ROA%, ROE%, and CAR % of SBI and HDFC banks. For the table, it concluded that the mean value of NIM% in SBI is less as compared to HDFC bank, whereas the mean value of CI % is more in SBI bank. The average Net NPA% is more in SBI banks concerning HDFC Bank. The average ROCE%, ROA%, ROE%, and CAR% are more in HDFC Bank as compared to SBI. According to the SD value, NIM%, ROCE%, and CAR% are more in HDFC Bank as compared to SBI. According to the sig. value of financial performance ratios, it is evicted that in the case of NIM%, the t value (8) = (-14.102), $p=0.000(< 0.05)$ which rejected the H0 and accepted the H1. Thus, there is a significant difference between the NIM% of SBI and HDFC Bank. In case of CI%, the t value (8) = (3.954), $p=0.004(< 0.05)$ which is rejected the H0 and accepted the H1. Thus, there is a significant difference between the CI% of SBI and HDFC Bank. In case of Net NPA%, the t value (8) = (2.832), $p=0.022(< 0.05)$ which is rejected the H0 and accepted the H1. Thus, there is a significant difference between the net NPA% of SBI and HDFC Bank. In case of ROCE%, the t value (8) = (-14.447), $p=0.000(< 0.05)$ which is rejected the H0 and accepted the H1. Thus, there is a significant difference between the ROCE% of SBI and HDFC Bank. In case of ROA%, the t value (8) = (-9.888), $p=0.000(< 0.05)$ which is rejected the H0 and accepted the H1. Thus, there is a significant difference between the ROA% of SBI and HDFC Bank. In case of ROE%, the t value (8) = (-3.529), $p=0.008(< 0.05)$ which is rejected the H0 and accepted the H1. Thus, there is a significant difference between the ROE% of SBI and HDFC Bank. In case of CAR%, the t value (8) = (-11.778), $p=0.000 (< 0.05)$ which is rejected the H0 and accepted the H1. Thus, there is a significant difference between the CAR% of SBI and HDFC Bank.

5. Findings and Suggestions

- NIM%: It is a measure of profitability and growth. High NIM% is a positive sign that the bank is making good use of its investments. As per the outcome of the t-test, NIM% is more in HDFC bank which causes people are borrowing more frequently than they deposit. SBI has a low NIM%. Thus, SBI should strike a balance between supply and demand, so the loan interest could be more than bank interest.

- Cost to income (CI)%: it is an indicator of measuring liquidity as well as the profitability of the banking sector. The ratio provides a clear picture of the bank's operational efficiency. If the ratio is lower, the bank will be more profitable. As per the current study, CI% is low in HDFC banks. Percentage rises in SBI which indicates that expenses are growing more quickly than income. Therefore, SBI should cut office expenses and lowering overhead costs to boost profits.
- Net NPA%: It is the ratio of asset quality and performance measurement. Low NPA% always benefits the bank. In the present study, HDFC net NPA% is low as compared to SBI. Thus, SBI should reduce this. Before lending money, a customer's creditworthiness should be carefully assessed.
- ROCE%: To measure the solvency and profitability position, ROCE% plays a prominent role in the banking sector. It is better if the bank's ROCE is higher. In the current study, HDFC has a high ROCE%, which means that a higher percentage of the value of HDFC is returned to their stakeholders as profit. SBI should be decreased its liabilities and pay off the debt to improve its ROCE%.
- ROA%: For knowing the efficiency and profitability criteria, ROA is the most useful metric. A higher ROA % leads to be more effective performance of any bank. HDFC bank has more % which means it is effectively transforming its investments into earnings. For better ROA%, SBI should lower its size to boost ROA% and raise the margin for profit.
- ROE%: It is useful for assessing the bank's efficiency. As per the general rule, a higher ROE% is always preferable. HDFC has a higher ROE% which is preferable as compared to SBI. Lower ROE% is a sign that SBI is less lucrative and not making the best use of its resources. Reducing shareholder equity value, increasing investment, raising profit margins, and using more financial leverage are some suggestions for SBI to improve this parameter.
- CAR%: As per the general rule, a high CAR% is beneficial since it shows that the bank has adequate capital available, which puts it in a better position to deal with unforeseen losses. In this study, HDFC has the highest CAR% as compared with SBI. Hence, reducing balance sheet risk and NPA percentage could be helpful to SBI in improving this metric.

- From the descriptive statistics result, it also observed that all the ratios of the chosen bank showed significant results because of all the case sig. value is less than a 5% level of significance. Thus, it rejects the null hypothesis (H0) and accepts the alternate hypothesis (H1).

6. Limitations and Future Scope of Study

The current study is limited to secondary data only. The conclusion is based on an analysis of data gathered during the last five years. The statistical theory employed is constrained. Thus, the researcher can conduct additional research on this subject by employing data spanning 10 years or longer and other tools for statistical analysis. Future studies could be conducted by considering more financial ratios. It would be more useful to evaluate the bank's performance in terms of economic value added (EVA) and also consider market valuation ratios. Market sensitivity analysis can be done further which will give more insightful information to the stakeholder.

7. Conclusion

According to the comparative study's findings, HDFC Bank is leading in all the aspects of selected banking parameters followed by SBI. From the study, it is observed that HDFC Bank has performed well throughout the selected years. From the independent t-test result, it is concluded that the null hypothesis is rejected which shows that by comparing the key financial performance metrics from 2018-19 to 2022-23, there are significant differences in the overall performance of SBI and HDFC Bank. Hence, it is concluded from the comparative analysis that HDFC Bank has strong profitability, better efficiency, adequate liquidity, improved solvency, and good portfolio management. Consequently, based on the comparison results of both the chosen bank, over the course of the research, it emerged that HDFC Bank has better financial health than SBI. The present study has both theoretical as well as practical implications. This will be fruitful for academicians, bankers, practitioners, and investors to inculcate more knowledge on the selected ratio and take appropriate investment decisions.

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Financial Inclusion for Economic Growth of India: An Analysis

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Abstract:

A significant proportion of the Indian populace resides on the periphery of the country's financial infrastructure. There is a rising apprehension regarding the phenomenon of individuals having limited access to banking services, commonly referred to as being 'under-banked'. The promotion of financial inclusion is a crucial priority for the nation with regards to both economic advancement and societal progress. It facilitates the reduction of socioeconomic disparity. The process of channeling money-flow to the economy through financial inclusion facilitates access to economic systems for individuals who have previously been unable to do so. This paper examines the significance of financial inclusion in the economy and the pivotal role played by diverse stakeholders in fostering the overall initiative. Keywords: Money-flow in economy, banking industry, financial education, access to financial services.

Introduction:

India is widely recognized as a significant and rapidly developing economy on the global stage. However, a confusing aspect of its economic growth is the observation that it has been both dispersed and unequal. The growth performance of the economy has been irregular and lacking in equality, with certain sections of the economy receiving a disproportionate share of the benefits of growth. This lack of connection between growth and the distribution of its benefits has resulted in a disseminated economic landscape. Despite experiencing a period of

substantial growth between 2003-04 and 2007-08, the Indian economy was unable to effectively address the persistent issues of unemployment and poverty on a significant scale. Moreover, a important proportion of the common people is unable to avail fundamental healthcare and educational amenities amidst this period of expansion. In contemporary times, there has been a flow in economic and social inequalities, resulting in amplified regional differences, due to elevated growth rates. More than a quarter of the Indian population continues to experience extreme poverty, as indicated by sleeping conditions. Consequently, the pursuit of Inclusive growth has emerged as a primary objective of the federal government's policy.

It is imperative for the Indian economy to expand in a manner that is advantageous to all stakeholders. The concept in question gained the attention of policymakers during India's Eleventh Five-Year Plan, representing a relatively recent addition to the country's planning framework. Inclusive growth refers to a type of economic growth that is characterised by its broad-based, shared, and pro-poor nature. The rationale behind this assertion is that the precise connotations of the terms pertain to both the velocity and configuration of the economic phenomenon. As per the statement made by the Planning Commission of India, the concept of "inclusive" should be perceived as a mechanism that involves the integration of marginalised individuals as active participants in the event process, rather than solely focusing on the promotion of development programmes for their welfare.



Figure:1

Elements of inclusive growth, source: <https://tinyurl.com/ytcyusnf>

In broader terms, the concept refers to the achievement of inclusive growth as a means of promoting economic development and ensuring equitable access to economic opportunities for all members of society. This paper provides a comprehensive depiction of the concept of inclusive growth through clear visual aids. Additionally, it explores the use of financial inclusion to achieve inclusive growth, specifically with respect to its prevalence in various Indian states.

Literature Review:

Levine conducted an empirical investigation of the neoclassical viewpoint and discovered that countries with a greater number of banks and more dynamic stock markets experience faster growth over successive decades, even after accounting for various other factors that underpin the economic process. According to Levine (1997) and Pande and Burgess (2003), the equal distribution of financial resources to all societal sectors is of the utmost importance. The financial sector might have a major impact on the fight against poverty. Information and transaction costs may be reduced by creating a well-developed economic system that is accessible to everybody, as stated by Beck et al. (2009). This may affect saving, investment, technical innovation, and long-term growth. Binswanger and Khandker (1995) and Pande and

Burgess (2003) found that Indian rural branch expansion programme decreased rural poverty and boosted non-agricultural employment. Development economics must solve poverty. Finance is vital to helping individuals rethink their production and employment activities and eliminate poverty (Aghion and Bolton 1997). Financial inclusion is now public policy. India (2008), the UK (2006), and international organisations like the UN (2006), International Bank for Reconstruction and Development (2008, 2009) have formed committees to study financial inclusion and expand its scope. These studies examined monetary inclusion. These papers have mostly ignored monetary inclusion measures. Money inclusion measurement is crucial for India's diverse economy and culture. Many scholars have tried to live monetary inclusion. Honohan and Beck (2007) connected inequality (Gini Coefficient) and poverty with the proportion of adults utilising formal financial intermediaries using banking and MFI account data for 160 countries. Sarma (2008) created a financial inclusion index for 55 nations utilising aggregate banking variables such number of accounts, bank branches, and total credit and deposit as a percentage of GDP. Ruggiero et al. (2009) created a financial inclusion index for sixteen major Indian states utilising comparable aggregate variables like number of rural offices, number of rural deposit accounts, volume of rural deposit and credit from banks data. For 51 countries, International Bank for Reconstruction and Development (2008) offers a composite measure of financial services access: the proportion of adult population having a financial intermediary account. In *Banking the Poor*, the International Bank for Reconstruction and Development (2009) examined the relationship between access to banking services, measured by the number of bank accounts per thousand adults in each country, and other factors like bank transactions, bank needs, and country regulations that affect banking access for 45 countries. Beck et al. (2009) notes that there is greater information about many sectors of the economy, but systematic indices of monetary sector inclusivity are inadequate. In a 2011 RBI working paper, Sadhan Kumar Chattopadhyay disclosed West Bengal's financial inclusion. According to the report, banking outreach has improved, but not much. The research created an Index of Monetary Inclusion utilising data on bank penetration (BP), availability of banking services, and banking industry usage. The article compares state IFI ranks. This article focused on financial inclusion as an economic instrument for inclusive development in India, where a lot of effort has been made to measure monetary inclusion in the country and its states.

Objectives of the work:

Our goals are these.

- To analyse, grasp, and desire for inclusive progress.
- To assess monetary inclusion's role in inclusive growth.
- To assess India's financial inclusion/exclusion.
- To financial inclusion variance between Indian states.

Methodology:

The study relied on previously collected information from other sources. Key economic factors such as GDP per capita, literacy rate, percentage, and the index of monetary inclusion are taken into account during the analysis of natural hierarchical grouping cluster (Johnson R.A. & Wichern D.W., 2000). Euclidean distances between multidimensional observations are offered as an alternate measure of similarity. Diagram also shows a hierarchical clustering approach that takes into account the average correlation between the groups. Need for Rapid Inclusive Development. To accompany its remarkable and controlled development, India needs inclusive growth. Sustainable development, as well as the equal distribution of wealth, property, and prosperity, need an emphasis on inclusive growth. One of India's greatest difficulties is to achieve inclusive development. The difficulty is in mandating the necessary level of expansion throughout all sectors of society and all regions of the nation. The objective is to promote inclusivity and equitable participation of all societal segments in the process of growth and good governance. This will enable India to achieve a high rate of growth in its rural economy, ensure sustainable urban development, facilitate infrastructure development, implement significant reforms in education and healthcare, and ensure the fulfilment of future energy requirements. Need of inclusive growth is generally summed up as focusing on the following four areas:

- I. reducing poverty and unemployment;
- II. eliminating economic inequality and ensuring equality;
- III. advancing agriculture;
- IV. safeguarding environmental concerns.

However, resources are needed to achieve inclusive growth goals, and financial inclusion is essential for generating and mobilising those resources. It's an essential part of the economy as a whole. Providing those who otherwise wouldn't have access to them with financial services may help address the problems of resource availability, mobilisation, and allocation. Therefore, an effort has been made in this paper to critically examine the function of money in inclusive development.

When we talk about "financial inclusion," what we really mean is providing affordable access to banking services and credit for most low-income and marginalised groups in society. In essence, financial inclusion refers to the systematic effort to ensure that appropriate financial service providers meet the financial and social security requirements of individuals, thereby enabling their complete participation in the national economic system. Detailed descriptions of these components of financial inclusion are provided in the diagram that follows.

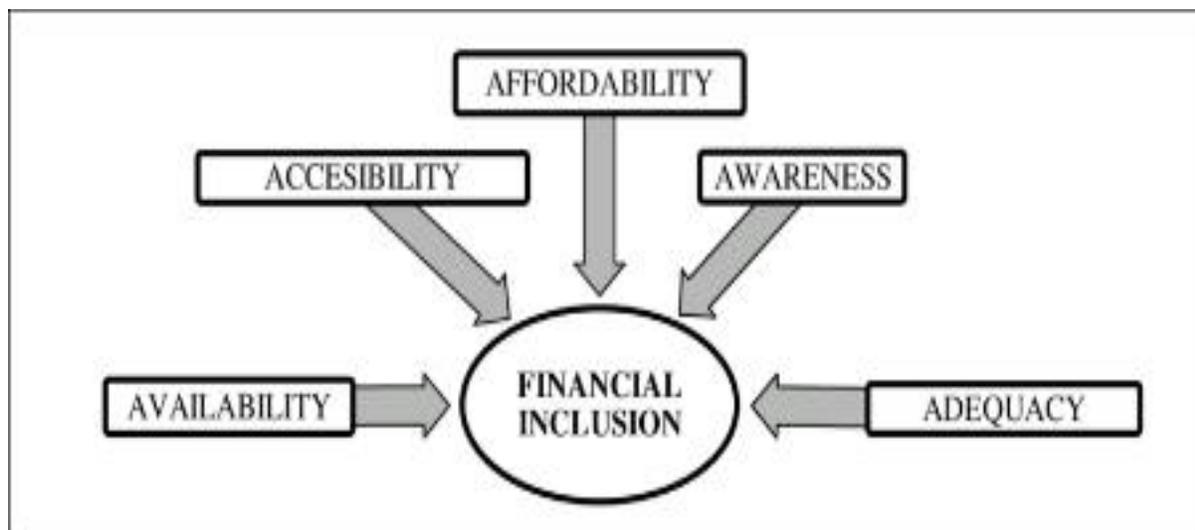


Figure: 2 Financial inclusion components

Role of monetary Inclusion:

This area is critical to India's inclusive development, with nearly 25% of the people living in extreme poverty. The growth and development of a nation is a significant responsibility of the government. Inclusive finance is an economic tool that, if properly directed and acquired, has

the potential to mitigate poverty and unemployment. The provision of financial services has the capacity to effectively aid impoverished individuals in breaking the cycle of poverty. The enhanced resource base of the financial institution, which yields greater societal advantages through the effective deployment of payment mechanisms and allocation of resources, is a direct consequence of the frugal and economical conduct engendered by financial inclusivity. Individuals who experience economic disadvantage are at a higher risk of experiencing financial exclusion as a result of limited access to resources. The provision of formal banking services has the potential to mitigate or eliminate market impediments and facilitate financial inclusion for low-income individuals, leading to increased profits by leveraging advantages and effectively utilising targeted subsidies. Criminals would be able to balance out their spending and put more money towards improving their health, education, and income if they used these services. Inclusionary development could assist low-income people attain financial security, asset accumulation, economic mobility, and personal empowerment if it is applied consistent.

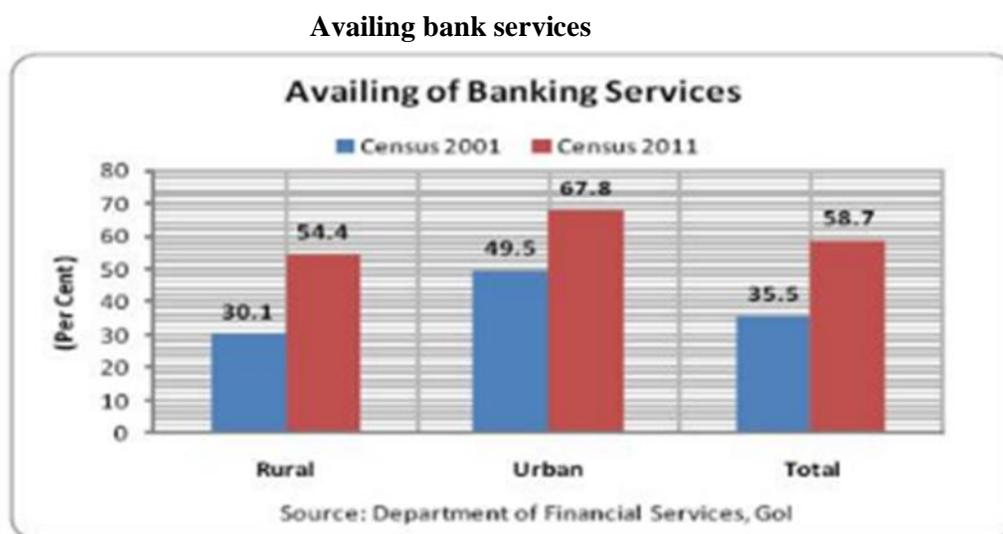


Figure: 3 Banking service availability

As a result, inclusive development with stability necessitates financial inclusion. However, inclusive finance may be a long-term goal that will take time to achieve, access to financial products in developing countries, such as India, is hindered by various factors including limited awareness, Unaffordability, high transaction costs, and inconvenient, inflexible, and substandard products. The subsequent section will undertake an analysis of India's financial

inclusion. Financial inclusion empowers residents to utilise their incomes to better their finances and build their country.

The Federal Reserve Bank and Indian government have long stressed financial inclusion to foster inclusive economic growth.

PMJDY (Pradhan Mantri Jan Dhan Yojana) launched in August 2014. PMJDY helps excluded people get savings bank accounts, low-cost loans, remittances, insurance, and pensions. Such low-cost penetration requires technology. Thus, PMJDY's success was enabled by the core banking ecosystem and NPCI's debit card issue scaling. Banks opened record-breaking savings accounts under the scheme. Its progress intrigues.

RBI handled financial literacy, digital literacy, and FI projects. RBI and Ministry of Finance top forums oversaw PMJDY, boosting FI. Opening enormous mission-mode bank accounts has changed FI. Future customers and banks will gain from mass customer accretion.

After building a stable FI infrastructure and speeding up PMJDY growth, the next step should be to alter newly connected beneficiaries' mindset to borrow from banks and repay loans on time to benefit from the formal economy. This will help micro and small businesses, reducing poverty and raising community standards.

The subsequent stage of Financial Inclusion entails a reduced emphasis on policy and a heightened focus on disseminating financial and digital knowledge, as well as raising awareness among beneficiaries of the potential of rural enterprises through their borrowing privileges and bank loan responsibilities. An all-encompassing approach to literacy that involves the participation of individuals at the grassroots level is necessary.

It is recommended that the Reserve Bank of India (RBI) and banks collaborate with State Education Boards (SEBs), Central Board of Education (CBSE), University Grants Commission (UGC), and All India Council for Technical Education (AICTE) to mandate Financial Inclusion (FI) as a subject across all levels of education, ranging from primary to tertiary education. This will enable upcoming scholars to comprehend the significance of cultivating a sound loan repayment culture. The prioritisation of FI projects is necessary to advance financial and digital literacy.

Businesses, nonprofits, banks, NBFCs, and government entities all working in FI should be given opportunities to grow. Without widespread use, FI infrastructure will not be able to benefit society. Gaining financial literacy has been linked to a global decrease in poverty. The next round of inclusion, after substantial investment in FI infrastructure, should encourage beneficiaries to make use of financial services to enhance their economic and social well-being. An updated analysis confirms that even though as many as 80% of Indians now have a bank account and a similar number have a cell phone, the country's financial inclusion levels remain among the poorest in the world, even worse than in Sub-Saharan Africa in several respects.

As per the recent Global Findex Services report released by the World Bank in April 2018, there has been a reduction in gender, wealth, and education gaps in account ownership due to the availability of mobile banking services. However, there is a concern regarding the low utilisation of available facilities by account holders, which raises questions about the effectiveness of financial inclusion measures.

Pradhan Mantri Dhan Jan Yojana (PMJDY), was started in 2014 with the goal of bringing banking services to India's hitherto unbanked people. According to the global Findex study, it has been substantially responsible for the dramatic surge in new account openings.

Only about 1% of PMJDY account holders (out of a total of 3.1 million beneficiaries) make use of the available overdraft facilities, and approximately 17% of the accounts under the Pradhan Mantri Jan-Dhan Yojana (PMJDY) scheme exhibit a "zero-balance" status, indicating that they remain inactive. 17% of PMJDY accounts are "zero-balance," meaning they are not used.

Even though the number of Indians with access to formal credit has increased, many still aren't part of the formal banking system because according to recent data, 38% of accounts in India are deemed inactive, indicating that there has been no activity in terms of deposits or withdrawals for a period exceeding one year.

The paper suggests that effective utilisation and involvement in financial services can contribute to the advancement of development goals by promoting investments in education and healthcare, mitigating the impact of financial crises, and reducing dependence on foreign currency.

Mobile banking has not yet been successful in India.

Compared to other emerging countries, a far smaller percentage of the Indian population uses a smartphone or the internet to access their bank account, makes digital payments, or makes use of a mobile money wallet. In 2017, the prevalence of mobile money accounts in India was limited to a small subset of the population. However, by the same year, approximately 5% of the population had adopted this financial technology. By way of comparison, the proportion of individuals possessing a mobile money account in Sub-Saharan Africa stood at 21% in the year 2017. The region exhibited the greatest value in comparison to other regions worldwide, indicating a 50% surge from the previous year of 2014. The data reveals that the percentage of Indian adults who engaged in digital payments in 2017 was only 29%, whereas the corresponding figures for Kenyan and South African adults were 97% and 60%, respectively.

Recommendations:

The attainment of financial inclusion remains a distant goal that requires significant progress. The development of online banking and other innovations in the banking industry are steps in the right direction. According to recent research, products play a crucial role in establishing a financially accessible ecology. If we look at the financial inclusion innovations that have occurred in different parts of the globe, we can clearly identify the following as the most important conditions in order to achieve success in the realm of financial inclusion, certain measures must be taken:

The following are some recommendations that might help increase financial inclusion in India.

The government should open more bank locations.

- The government should put more bank outlets in places that are hard to reach.
- Banks should put more attention on goods that are easy to use, cheap, and have a lot of uses.
- The RBI should often check to see if customers are using financial products in a good way, and if not, it should investigate why.
- Banks should do regular polls in rural areas to find out what people need money for.

- Non-governmental organisations (NGOs) and other groups that don't make money could also do more to spread banking services to rural and inaccessible places.

- Banks should let customers give comments about the goods and services they offer. RBI should let service companies improve what they offer.
- Mobile banking goods should be available at a price that most people can pay.
- Make it easier for people in remote places to use banking goods. Accounts that can be opened with no minimum amount
- You should also make it easier to start a bank account.
- No need to insist on a greeting or protection.
- The RBI will change its policy.
- Services should be offered to customers at their homes on a commission basis, like commission brokers, daily cleaners, and so on.
- Figure out and use easy methods for mobile banking.
- RBI should let business owners invest in new products.
- The economy does better when more people can use money. It will grow more quickly and be more stable. It will make people's lives better and make sure that the country grows in a healthy way. Also, it will diminish the gap between the rich and the poor. Gandhi often thought that this is what our India should be like.

Conclusions:

Achieving inclusive growth relies a lot on making sure that growth chances and rewards are shared fairly. Financial inclusion is a crucial instrument that ought to be utilised by all individuals within the nation to foster overall growth. For growth to happen in a good way, the state must understand that order must be created in terms of fair funding. In different parts of the country, different amounts of money are included in the economy. As an example, the rate of monetary inclusion is better in Kerala, Maharashtra, and Karnataka, whereas Gujarat, Manipur, Assam, Bihar, Uttar Pradesh, Madhya Pradesh, and other states demonstrate a comparatively lower level of monetary inclusion. From a viability/sustainability point of view, it is hard to reach more people and places, which is a problem. Various government agencies at both the central and state levels are currently experimenting with diverse delivery methods as they continue to develop appropriate business models. However, in certain instances, the efforts made may not be sufficient in addressing the alarming issue of economic disparity. When it comes to using money services or goods, financial knowledge and awareness

are still a problem. In order to achieve the objective of financial inclusion, it is imperative that all stakeholders, including regulatory bodies, financial institutions, governmental entities, civil society organisations, and non-governmental organisations, collaborate and coordinate their efforts. Financial exclusion is a prevalent issue across several states in the United States. Addressing this challenge requires a tailored approach that takes into account the unique historical and demographic characteristics of each state, as well as those of its counterparts in other regions.

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Exploring E-Waste Management for Bhubaneswar

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Abstract:

With the advancement of digital technology and its wide spread adoption a lot of electronics goods have become an indispensable part of our daily lives. While the world is engaged to buy new electronics products for their convenience at the same time products are also being discarded by consumers due to various reasons but primarily because of End of Life (EOL) of the products and due to these the products are become unusable in nature. And once the product has achieved this state its becomes an e-waste for the society. E-waste comprises of items like discarded Televisions, Computers, Cell phones, CRT's and other electronics items. Many of these contains some precious metal such as gold, silver, nickel, copper, and palladium as well as some hazardous substances like lead, cadmium, mercury. These hazardous substances can have bad impact on human health and the environment if not handled properly due to their material and chemical compositions. The current study focuses on issues with respect to the e-waste management in city of Bhubaneswar.

Keywords: Sustainability; E-waste, Reverse Supply chain, Solid Waste Management, 3R

1. Overview/Introduction:

With the increasing population and mass adoption for digital devices India is moving towards becoming a dump yard of e-waste. As per the figures shared by e-waste monitor in year 2019, the 53.6 Mt of e-waste was generated globally during the year 2019 itself which makes an average of 7.3 kg per capita. The same will be having an increasing trend in coming years, as gradually the awareness increasing and next generation technology will phase out the existing electronic products forcing consumers to buy new ones. It can be predicted that by the year 2030 the per-capita generation of e-waste will increase to 9.0 kg. The primary reason for the huge generation of e-waste is attributed to higher level of disposable income, urbanization and mass industrialization. At the same behavioral aspects like high consumption of electronic equipment, short life cycle and less repair options are the major cause of the problem. The E-waste management attribute to 2 of the 17 Sustainable Development Goals (SDGs) as formulated by the United Nations. This caters to the 11th and 12th goal of sustainability.



Picture Source :<https://sdgs.un.org/goals>

Apart from avoiding the adverse effects of the e-waste for human and environment there exist a huge opportunity if the e-waste is managed properly and with proper discovery, classification, re-use, re-cycle and disposal mechanism. Studies indicates that the global market for e-waste related circular economy can result in more than \$10 Billion USD per year and it will also help in recovery of precious metals like gold, silver , aluminum, copper ,and iron with less than 85% of the cost associated with the actual mining processes. In turn all these initiatives will help in minimizing CO2 emission which adds to the global environmental causes. Although there are a lot on initiatives taken worldwide there seems to be gap between the vision and actual state of the e-waste management activities in reality. India stands at the

center stage attraction in the south Asian countries to have a policy to manage-waste since 2011 which authorizes only designated dismantlers and collectors. However the vision and execution has experienced a huge gap due to various socio behavioral as well as technical factors. So it is crucial that e-waste should be managed efficiently. The primary reasons attributing to the poor e-waste management in India are nonexistence of inventory management, unhealthy process of recycling, lack of awareness among the public, weak legislations etc. [1]. In India primarily e-waste is recycled in a very unhealthy manner and mostly recyclers involved in this are women and children. As it contains heavy metals like lead, cadmium and mercury, it causes high blood pressure and kidney failure like diseases in adults once the water or soil is contaminated with these hazardous metals. It also has a lot of adverse effect on children like lower birth weight, damage of the nervous system etc. Discarding and dumping of this waste causes air, soil and water pollution and becomes a catastrophe for the environment [2]. Studies reveals that globally around 70 to 80% of the e-waste is exported from a developed country to a under developed countries for dumping purpose or for the informal way of recycling. Major reason behind this disposal and recycling of e-waste can be expensive in developed countries due to stringent environmental regulations and labour costs. Instead of exporting environmental problems to developing counties by the developed counties, they should come forward to help the developing counties to battle against this big issue [3].Two important factors that affect a sustainable e-waste management are disposal behaviour and awareness among people both in developed and under developing countries. The social, economic, cultural and political differentiation in India is a major challenge for a sustainable e-waste management. [4].



Picture Source:

<https://zdnet3.cbsistatic.com/hub/i/r/2015/06/10/cbf406d6-ed30-408a-8022daf9b9db38c7/resize/770xauto/226cf25257c4fc567185f959286e5744/e-waste-3.jpg>

For the city of Bhubaneswar is more crucial as we have recently identified as one of the best Smart City in India and one of the key parameters for retaining the same would be having an efficient e-waste management mechanism. The challenge exist in identifying the process of *prediction* , *identification* of e-waste source of the city and define an efficient methodology which will comply with global as well as Indian standards and create an example for other cities to follow the same approach.

2. Methods/Techniques:

Secondary data collection techniques using internet and published articles in different journals are used to complete the study. The details and the facts are collected from global e-waste organization's data(e.g. Ewastemonitor.info, globalewaste.org) as well as journals related to e-waste management in India, Odisha and especially for Bhubaneswar. The facts and figures are collected from the various reliable sources from internet.

3. Discussion:

Increasing volumes of electronic products like Mobile phones ,Cathode ray tubes used in TVs, computer monitors and peripherals, video cameras and other electronic items contribute to the majority of the e-waste mass. A major part of the same are generated in and around the ity of Bhubaneswar. This is due to the heavy urban population density of the digital citizens are living here. A study conducted by International Resource Group Systems indicates that Odisha generates roughly around 2937.8 tons of e-waste every year [5].Desktop, PCs accessories and

electronic devices like cell phones are the major part of the e-waste. A bulk of these wastes remains unprocessed, causing environmental hazards. Only 30% of the waste materials processes are processed in organized way. Mobile Phone related e-waste is increasing day by day and will have an increasing trend of CAGR 23.5%(global trend).Studies indicate that when scientifically processed one million mobile phones around 500 pound of silver and 20,000 pound of copper can be extracted along with few pounds of gold. Apart from the precious metals many hazardous materials like Lead, hard plastic, chromium, mercury, beryllium and cadmium etc. can be safely recycled or separated from the waste which can pose much health related problems like kidney, lungs and nervous breakdown. Due to all these facts various discussions and planning are being done so that the requisite preparedness can be done so that the impact can be minimized. However there has not been any major initiative taken which handles this issue from different dimensions which are the primary cause for this issue. Studies indicate the following factors primary influence the poor e-waste management issues.

1. Lack of awareness in society regarding the adverse effect of e-waste.
2. Highly unorganized approach for e-waste handling
3. Absence of electronic waste Inventory present in Odisha
4. Lack of awareness in people for re-cycling the e-waste

Currently many private organizations along with Bhubaneswar Municipality Corporation (BMC) are managing the waste in different part of Bhubaneswar but the e-waste management is not specifically taken in to account. BIITM, a reputed educational institute located in Bhubaneswar, has taken an initiative to proactively manage e-waste by collecting it and directing it towards recycling through Hulladek, a responsible e-waste management organization in Kolkata. So there is a good opportunity for starting an e-waste management initiative in Bhubaneswar as there are many educational institutes offer technology based studies where many electronics equipment are used. Reverse supply chain can be used as an effective way of managing e-waste. The refurbishing and remanufacturing techniques with the 3R methods can also be used to handle the e-waste. The most important part is public awareness and strong legislations are needed. [6]



Picture Source:

<https://www.financialexpress.com/india-news/e-waste-in-odisha-to-touch-2050-mt-by-2021mait/686928/>

4. Advantages and Limitations:

As 5G revolutions has already knocked at our doors, a lot of new electronic devices is overflowing into the market as consumers are opting for new devices and this in turn will obsolete a lot of devices and all these will qualify for e-waste. Apart from the same Bhubaneswar is a hub for young mass as it is the most preferable education hub for costal part of Odisha as well as eastern states of India. Apart from this a lot of new job seekers come every year to Bhubaneswar to have a job either in private or public sector. The young mass is more inclined towards the new age electronic devices and changing them more often. This makes Bhubaneswar a potential city to consider e-waste management being the urban and educational hub of Odisha. There also exists a challenge with the residents of the city as there is not much awareness about the e-waste related hazards.

5. Conclusion:

Based on the study done it is evident that a mechanism which can eliminate the hazards described above. For the same a model needs to be decided and implemented which can handle the e-waste management issue from its origin to the destruction. Once the source and causes are identified there can be different organized process to collect, segregate, re-use, recycle , recover and dispose it in a proper way so that it do not cause any harm tour eco system.

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