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Late Dr. A. D. Shinde

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CONTENT

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Tractors and Technology - Enhancing Customer Relations through CRM

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Abstract
This paper aims to study the rapidly evolving landscape of the Indian tractor industry, the integration of technology and Customer Relationship Management (CRM) systems has emerged as a pivotal strategy for enhancing customer relations. This research paper explores the profound impact of CRM implementation on customer relationships within the context of the tractor manufacturing and dealership sector. The paper begins by providing an overview of the tractor industry's current challenges and dynamics, highlighting the competitive pressures, and changing customer expectations faced by tractor manufacturers and dealers. It then delves into the role of CRM systems as powerful tools for capturing, analysing, and leveraging customer data to develop personalized engagement strategies. It also discusses how CRM systems enable tractor companies to provide timely and customized services, predictive maintenance, and seamless communication channels. Furthermore, the paper explores the challenges and potential barriers to CRM implementation in the tractor sector, addressing issues related to data security, user adoption, and integration with existing systems. It offers insights into best practices and strategies to overcome these challenges successfully. The paper concludes by emphasizing the transformative impact of CRM on the tractor industry's customer relationships and its potential to drive sustainable growth and profitability. It highlights the need for tractor manufacturers and dealers to embrace CRM technologies as essential tools in their pursuit of customer-centric excellence. In an era where technology-driven customer engagement is paramount, this research paper serves as a valuable resource for tractor industry stakeholders, providing actionable insights into how CRM can be harnessed to foster stronger, more enduring relationships with customers, ultimately leading to a more prosperous future for the farming and Agricultural sector with support and growth of Tractor industry.
Keywords: CRM, Brand Loyalty, Customer Satisfaction, Customer Retention, Customer Centric Approach,

I INTRODUCTION- A BRIEF OF INDIAN TRACTOR INDUSTRY: -

The Indian tractor industry is one of the largest and most competitive in the world. It has been growing at a significant rate over the past few years, with several domestic and international players making their presence felt in the market. The Indian tractor industry is primarily dominated by a few large players such as Mahindra and Mahindra, TAFE, Escorts, Sonalika, and John Deere. These players account for a major share of the total market, but there are also many smaller players operating in the industry. The Indian tractor industry has been driven by several factors including increasing demand for food, rising mechanization in agriculture, increasing government support, and favourable government policies. Additionally, the Indian tractor industry has been witnessing rapid advancements in technology, fuel efficiency, and comfort features, which has further boosted demand. Tractors are the prime equipment of farm mechanization. Tractors are capital-intensive machines, and the sale of such machines depends largely on bank credit facilities. Tractors replace manual and animal labor on agricultural farms. These are also used for transportation/haulage (with a trolley attached to it), electricity generation, use at building construction sites and other places through its PTO (Power Take Off) function.

[3]The Indian Tractor Industry has made a significant progress in terms of production and capacity. Around one million Tractors are produced every year in India. The population of running tractors in India is around 30 million compared to 9 million tractors in China.

The Indian tractor industry has advanced in technology and growth even in comparison with countries which were pioneers in tractor manufacturing! It reflects the dynamism of the Indian Industry and maturity of the policies adopted by the Government of India to meet the needs of the farmers. Imported as well as indigenous technology was used to meet the overall requirements of the farming fraternity. Now the number one tractor manufacturing company in the world is an Indian Company: Mahindra and Mahindra Limited.

In our country tractors have been imported for long time. Additional production of tractors to meet the customer demand was constrained because of government licenses. The increased demand of tractors after the Green Revolution in 1968 led to collaborations. Government of India now encouraged indigenous production. Credit facilities for the purchase of tractors were enhanced. Bank schemes were liberalized to help market growth. The imports continued till 1973. On account of the oil crisis in 1973, the import of fully built-up tractors was banned. New manufacturers entered the manufacturing arena leading to stagnation in demand. Actually, the market became competitive since 1973.

The government lifted the Statutory Price Control on Tractors. They gave direction to the commercial banks to expand rural lending. Bank Credit availability to farmers increased significantly. The tractor market expanded rapidly from the beginning of 1977.

The production of tractors more than doubled during the next five-year period. It was 33,000 units in 1975 and increased to over 71,000 units in 1980. The number of tractors in use also crossed five lac units.

The government gave exemption of excise duty on tractors with lower drawbar power, to help small farmers. Production went up to 75,000 tractors in the year 1985. In 1990 around 1,40,000 tractors were produced. The number of tractors in use in India reached one million units in 1989 and in 1990 the population of tractors was estimated to be 1.2 million units. In the eighties, India started exporting tractors also, mainly to some African countries.

After the economic reforms in 1991, along with few other industries; the Government of India dispensed off the compulsion of industrial license for tractor manufacturing also. Even foreign companies were permitted to take up production in India. Production increased during this period to over 2,55,000 units. The number of tractors in use in India at that time was over two million units. Thus, the tractor manufacturing industry was well established by the end of the 20th century in India. Agriculture, Farm Mechanization and Customer Care are the three areas where maximum focus is required to be given in India. The Government, the Public Sector, the Private Sector, and the farmers themselves are increasingly realizing g this need and are also making an all-out effort to cater to this need.

In order to further strengthen and support the agricultural sector, several initiatives have been taken by the Government of India under the Atma Nirbhar Bharat Abhiyan.

आत्मनिर्भरभारतअभियान : (Atma Nirbhar Bharat Abhiyan) :-The government is also bringing up agricultural reform laws for farmers. When there is so much focus from all quarters on farming, mechanization and consequently customer care, then this is the opportune time to find and fill the gaps in the Customer Relationship Management (CRM) in the Tractor Industry through our survey and research and be useful to the society. This is the reason why this topic was chosen for study.

Government of India (GOI) has announced 1 Lakh crores towards Agri Infrastructure Fund and this

financing will be provided for funding agriculture infrastructure projects at farm-gate & at aggregation points and for financially viable post-harvest management infrastructure. It shall lead to reforms in essential commodities Act, Agriculture Marketing and Agriculture Produce Pricing and Quality Assurance also given by government to farmers; these legislative reforms seek to remove agricultural commodities such as cereals, pulses, oilseeds etc. from the list of essential commodities and aim to reform agricultural marketing.

Studies also support to some extent PM Garib Kalyan Ann Yojana in which already. The tractor industry played a vital role in our country's Farm Development. The spectacular growth was mainly aided by the fundamental regulatory changes in the Industrial Sector. There are 16 domestic companies alongside four global one's manufacturing tractors in the country at present. Regarding market share, five companies in India account for more than 80% of the share in the tractor industry -- Mahindra and Mahindra, TAFE, ITL-Sonalika, Escorts, and John Deere. In this we studied buying habits of Customers, their interests, financial support to the farmers, efforts undertaken by Tractor dealers to convince customers, 'After-Sale Support' available, selling skills, spare parts availability, and customer support. These points deeply affect the market share, selling trend of a product, and most important unique selling factors which create a differentiating impact on the customer understanding. Tractor manufacturers in India realized that their existence depended on thorough knowledge of consumers and understanding of their buying behavior. The earlier consumer behavior studies highlighted the way in which people build their preferences and how they spend their resources, time, money, effort on consumption-related things based on their plan.

Major Tractor Manufacturers in India:

S.No	Company Name	Website	Tractors Since	Location
1	Standard Tractors	www.standardcorp.in	1990	Barnala, Pb.
2	Mahindra & Mahindra Tractors	www.mahindratractor.com	1965	Mumbai, M.S.
3	Tractors and Farm Equipment Limited	www.tafe.com	1961	Chennai, T.N.
4	Escorts Agri Machinery	www.escortsgroup.com	1971	Faridabad, Har
5	Sonalika -International Tractors Limited	www.sonalika.com	1998	Hoshiarpur, Pb.
6	John Deere India Private Limited	www.deere.co.in	1999	Pune, M.S.
7	New Holland Tractors	www.newhollandindia.co.in	1999	Noida, U.P.
8	HMT Tractors	www.hmttractors.co.in	1971	Pinjore, Har
9	Force Motors Limited	www.forcemotors.com	1997	Pune, M.S.
10	Preet Tractors	www.preetagro.com	2002	Nabha, Pb.
11	Mahindra Gujarat Tractor Ltd.	www.mahindragujarat.com	1963	Rajkot, Guj
12	Same Deutz – FAHR India (P) Ltd.	www.samedeutz-fahr.com	1999	Ranipet, T.N.
13	Indo Farm Industries Limited	www.indofarm.in	2000	Baddi, H.P.

14	Kubota Agricultural Machinery (I) Pvt.Ltd.	www.kubota.co.in	2008	Chennai, T.N.
15	Captain Tractors Pvt. Ltd.	www.captaintractors.com	1998	Rajkot, Guj.
16	Trishul Tractors Pvt. Ltd.	www.trishultractors.com	2003	Rajkot, Guj.
17	Eicher Tractors	www.eicher.in	1961	Chennai, T.N.
18	White Wagon Private Limited	www.whitewagon.in	2009	Rajkot, Guj.
19	SAS Motors Limited	www.sasmotors.net	2003	Faridabad, Har
20	VST Tiller Tractors Ltd.	www.vsttillers.com	1983	Bengaluru, Kar.

II. LITERATURE REVIEW - CUSTOMER RELATIONSHIP MANAGEMENT (CRM):

[1]A relationship is a feeling of connectedness between two people or a group of people. There is a feeling of belongingness, experiences good or bad or mixed, memories pleasant or painful. [2]Once a product is sold to a customer; a new relationship is formed between two people viz the seller and the customer. Simultaneously a new relationship is also formed between the Manufacturer and the user. A new relationship is also formed between the Product Designers and the End Users.

Some relationships can be short lived; a onetime transaction: 'Sell, make profit, and forget'. However, for a person with foresight, this 'One Time Transaction' has the potential of getting converted into a longtime association of product use, service, spares, and Seller-Customer relationship of mutual trust, product satisfaction, value for money, repeat purchases, word of mouth, public opinion building, introducing new customers, company-customer meets, improvements in product design and establishment of a brand name!

Winning the trust of the customer through Quality Service, Customer Care, Customer Contact, and efforts towards Customer Retention are the keys to maintaining a strong relationship with the customer.

III IMPORTANCE OF CRM: CRM stands for Customer Relationship Management. It is a strategy used by companies to manage interactions with customers and potential customers. CRM systems help companies to organize customer data and use it to build and maintain relationships, improve customer satisfaction and loyalty, and increase sales and profitability. The goal of a CRM system is to build long-term relationships with customers by understanding their needs and preferences and providing customized products, services, and support. Tractor companies in India are using CRM for various customer-centric activities such as Lead Management, Sales Management, Service Management along with complete Marketing and brand Management.

IV Benefits of CRM: [9]CRM offers numerous benefits to businesses, including improved customer satisfaction, increased sales revenue, more efficient marketing, streamlined business processes, better customer data organization, enhanced collaboration between departments, and increased customer loyalty. By centralizing customer data and automating business processes,[10] CRM systems allow businesses to provide faster and more personalized customer service, identify revenue opportunities, and improve overall operational efficiency.

V Conclusions of CRM: - In conclusion, CRM or Customer Relationship Management is a crucial tool for businesses looking to improve their customer service, increase sales revenue, and optimize their operations. By centralizing customer data and streamlining business processes, CRM systems allow companies to automate many of the manual tasks, reduce errors and gain better insights into customer behavior, enabling them to offer more personalized and customized products and services. However, not using CRM systems can pose a significant threat to companies, including Lost opportunities, Inefficient operation, poor customer services and inaccurate decision. In summary, not using CRM systems can lead to missed opportunities, reduced efficiency, poor customer service, and inaccurate decision-making which can negatively impact the business. Therefore, it is essential that businesses embrace CRM technology to gain a competitive advantage, improve customer satisfaction, and increase profitability.

Suggestions for further reading:

1. Integrated CRM 'Customer Relationship Management in the Automotive Industry' - Automotive News Europe
2. 'Driving Customer Loyalty: The Power of Automotive CRM' – The Salesforce
3. 'The Role of CRM in the Indian Automobile Sector' - Business Today, India.
4. Kapoor, A. (2020). "Revolutionizing Customer Experience: CRM in the Indian Automobile Industry." Journal of Marketing and Consumer Behavior, 5(2), 45-52
5. Sharma, R., & Verma, S. (2019). 'Impact of CRM on Customer Loyalty: A Study of Select Automobile Dealerships in India' International Journal of Customer
6. Patil, M., & Kumar, V. (2018). 'Driving Growth through Effective CRM Implementation: A Case of Indian Automobile Dealerships' - Journal of Strategic Marketing, 26(6), 512-528

References:

1. According to a report by Deloitte, CRM systems are pivotal in enhancing customer experience, which is a key differentiator in the competitive automobile market.
2. Harvard Business Review emphasizes that effective use of CRM can lead to higher customer satisfaction, loyalty, and repeat business, especially in industries like automobiles. "The Power of CRM"
3. A study published in the International Journal of Engineering and Management Research highlights that CRM implementation positively impacts customer retention and dealer profitability in the Indian automobile industry. "Customer Relationship Management in Automobile Industry"
4. Deloitte - "Driving through the consumer's mind - CRM in the automotive industry
5. NASSCOM - "CRM Success Stories: Maruti Suzuki"
6. Harvard Business Review - "How CRM Transforms Vehicle Dealerships"
7. Smith, J. (2020). "Driving Success: How CRM is Transforming Automobile Dealerships." Automotive Business Insights, 8(2), Page 45-56.
8. Patel, R., & Gupta, A. (2019). "Customer Relationship Management in the Indian Automobile Industry: A Case Study of Maruti Suzuki." Journal of Business Excellence, 12(4), Page 78-92.
9. "Driving Customer Loyalty in the Automotive Industry through CRM" - Harvard Business Review.

10. "Impact of CRM in the Automobile Industry" - Journal of Customer Relationship Management.
11. "CRM Strategies for Auto Dealerships" - Automotive News.
12. "Transforming Car Buying Experience: The Role of CRM" - Forbes.
13. Gupta, N. (2019). Impact of CRM on Customer Retention and Profitability in Auto Dealerships. International Journal of Research and Analytical Reviews (IJRAR), 6(3), Page 164-169.
14. Federation of Automobile Dealers Associations (FADA). (2020). Study on the Effectiveness of CRM in Indian Automobile Dealerships.
15. Bhaskar, S. (2021). Revamping the Auto Retail Landscape in India. Automotive India News.
16. Chopra, S., & Mehta, S. (2019). "Effectiveness of CRM in Automobile Industry: An Empirical Study of Indian Car Manufacturers." International Journal of Recent Technology and Engineering, 8(2), 4047-4052.
17. Gupta, R. & Jain, S. (2018). "Customer Relationship Management in Automobile Industry in India: A Case Study of Maruti Suzuki India Limited." International Journal of Research in Marketing Management and Sales, 1(1), 1-10.
18. Sharma, P., & Singh, S. (2020). "CRM in the Indian Automobile Sector: A Study of Customer Satisfaction in Post-Purchase Activities." Journal of Commerce & Management Thought, 11(2), 331-343.

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Realizing the Use Cases through Classes, Objects and Their Relationship

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Abstract: Since its inception, the Unified Modelling Language (UML) has proven to be a valuable tool for software developers in modelling the system at hand. The use case diagram serves to provide developers with an understanding of the functions that external users expect from the system. On the other hand, the class diagram focuses on how these expected functions can be implemented in the system through the use of classes, attributes, and operations. This necessitates that the classes interact and collaborate with one another in order to fulfil these functions. The class diagram visually represents the relationships between classes and objects. It is important to note that the class diagram is reliant on the accuracy and comprehensiveness of the use case diagram, as any errors or omissions in the latter will have significant implications for the former. This paper aims to explore the relationship between these two crucial diagrams.
Keywords: Unified Modelling Language, Use Case Model, Class Diagram, Requirement modelling, Data model.

I. INTRODUCTION:

The software development process commences with requirement analysis, during which software developers strive to comprehend the desired functions and features that end users expect from the system. The objective is to enhance the user's daily work by providing them with a system that is more efficient and effective. Subsequently, requirement modelling is undertaken, involving the creation of various diagrams to gain insight into the functioning of the existing system in terms of inputs, processes, outputs, data storage, and data flow.
Requirement engineering is a challenging task due to the fact that requirements exist within the problem domain, while software objects exist within the solution space (Betty H.C. et al 2007). As software is applicable across various domains and its complexity continues to grow, the gathering, analysis, and modelling of requirements becomes increasingly arduous (Mona Batra et al 2020). Consequently, many organizations are placing greater emphasis on requirement engineering, recognizing that the quality of the software is contingent upon the clarity, completeness, and consistency of the requirements (Kanishka Gopal et al 2016).
This underscores the significance of thorough and comprehensive requirement analysis within the software development process.

Requirement Engineering encompasses the process of requirement modelling, in which software developers utilize specific methods to visually represent user requirements, typically through the use of diagrams and images. Diagrams, such as Data Flow Diagrams (DFD) and Use Case Diagrams, are the preferred means of modelling requirements due to their enhanced communicative capabilities compared to textual representations. The primary focus during requirement modelling is on determining what needs to be accomplished, rather than how it should be achieved. In the subsequent design phase, the emphasis shifts towards determining how user requirements can be translated into softwarecomponents and architecture.

For object-oriented systems, the fundamental building block is the class diagram, which illustrates the classes necessary to fulfil user requirements and the relationships between them. This is accomplished by specifying attributes and methods for each class.
Consequently, each requirement can be traced back to the corresponding classes, attributes, and methods. It is important to note that a single class may not be sufficient to implement a user requirement; multiple classes may be required. In order to fulfil the requirements, these classes must interact and collaborate, enabling the system to deliver the desired functionality to the user.

II. RESEARCH PROBLEM:

Each phase within the software development life cycle relies on the preceding phase, as the output of the preceding phase serves as input for the subsequent phase. This demonstrates the interdependence of phases within the software development life cycle, indicating that they cannot be viewed in isolation. The work product of each phase is directly linked to the work product of the following phase. In the context of object-oriented software engineering, the requirement analysis phase yields a use case diagram, which is utilized to define the relationship between system requirements and users. These requirements must then be mapped to classes, attributes, and methods to ensure that the final system fulfils the necessary functionality for the user. The purpose of this paper is to comprehend, establish, and substantiate the correlation between use case diagrams, which are the output of the requirement analysis phase, and class diagrams, which are the output of the design phase.
The research conducted by Kmalrudin concludes that the most crucial diagram or modeling tool in object-oriented programming is the use case diagram, particularly in the context of requirements validation (M. Kamalrudin and others 2015).

III. REQUIREMENT ENGINEERING AND DESIGN:

The software's quality is contingent upon its ability to meet the user's requirements. This underscores the significance of the requirement engineering process in software development. It is imperative that the requirement engineering process effectively gathers and documents all user requirements and desired functionalities. These requirements can be categorized as either functional or non-functional, with functional requirements being implemented as system functions and non-functional requirements encompassing features expected by the user.

In order to gather the necessary requirements, developers employ various tools and techniques known as fact-finding techniques, which include information gathering and integration techniques(M. Christel et al 1992). The requirement engineering process involves selecting from a collection of proposed requirements, prioritizing them, determining system boundaries, resolving conflicts, establishing objective acceptance criteria, and so on (Betty H.C. et al 2007). (Gareth Rogers 2016) has identified eight common requirement problems: missing requirements, hidden stakeholder needs, inadequate or ambiguous requirements, conflicting requirements, lack of testability and measurability, challenges in communicating requirements, changing requirements, and over-specification. These problems make requirement engineering challenging for developers.

In their paper (Geshwaree Huzooree and others 2015), emphasize the negative effects of poor and incomplete requirement engineering. Software development often encounters problems such as schedule delays, cost overruns, low customer satisfaction, failure to meet expectations, errors leading to poor quality deliverables, and increased maintenance costs due to rework, all of which can be attributed to improperly defined requirements. This discussion underscores the importance of the requirement engineering process, as it is the foundation upon which all other activities in software development depend.

Following requirement engineering, the design phase involves transforming the requirements into actual classes and establishing relationships between them. It is often necessary to have interaction and collaboration between classes in order to bring the requirements to fruition. This is achieved through the creation of a class model, which allows developers to consider and design the classes needed to implement the desired functionality. In his thesis (Dong Liu 2004) , the author proposes a method for semi- automating the conversion of functional requirements into a class model. The process begins with the use case diagram, which provides insight into the functional requirements that developers must consider when identifying the necessary classes for implementation.

The classes serve as fundamental components in an object-oriented system; however, a single class may not be adequate for implementing the necessary functionality. It is essential for the classes within the system to interact and cooperate with one another in order to execute the desired functionality. This necessitates the establishment of relationships between the classes, which can be visually represented through a class diagram. While the use case diagram is a result of requirement engineering, the class diagram is a product of thedesign process.

IV. USE CASE DIAGRAM

We present a methodology for implementing use cases using a class diagram. To illustrate the process, we will consider the design and development of a savings bank account system. The actors involved in this system include the customer, manager, cashier, and junior officer. The desired functionalities for these users encompass opening an account, issuing a passbook and chequebook, withdrawing and depositing funds, calculating and posting interest, updating the passbook, and closing an account. By utilizing the gathered information, we can construct a use case diagram that visually represents the actors and their respective functions of interest.

The use case diagram depicted in Figure 1 illustrates the functionalities expected by the actors within the savings bank account system. Each use case represents a specific function within the proposed system. It is important to note that the implementation of these functions necessitates the utilization of multiple classes and objects, as a single class alone is insufficient to achieve complete functionality. The successful realization of these interactions and collaborations between classes and objects can be achieved through the utilization of class diagrams, as well as interaction diagramssuch as sequence and collaboration diagrams.

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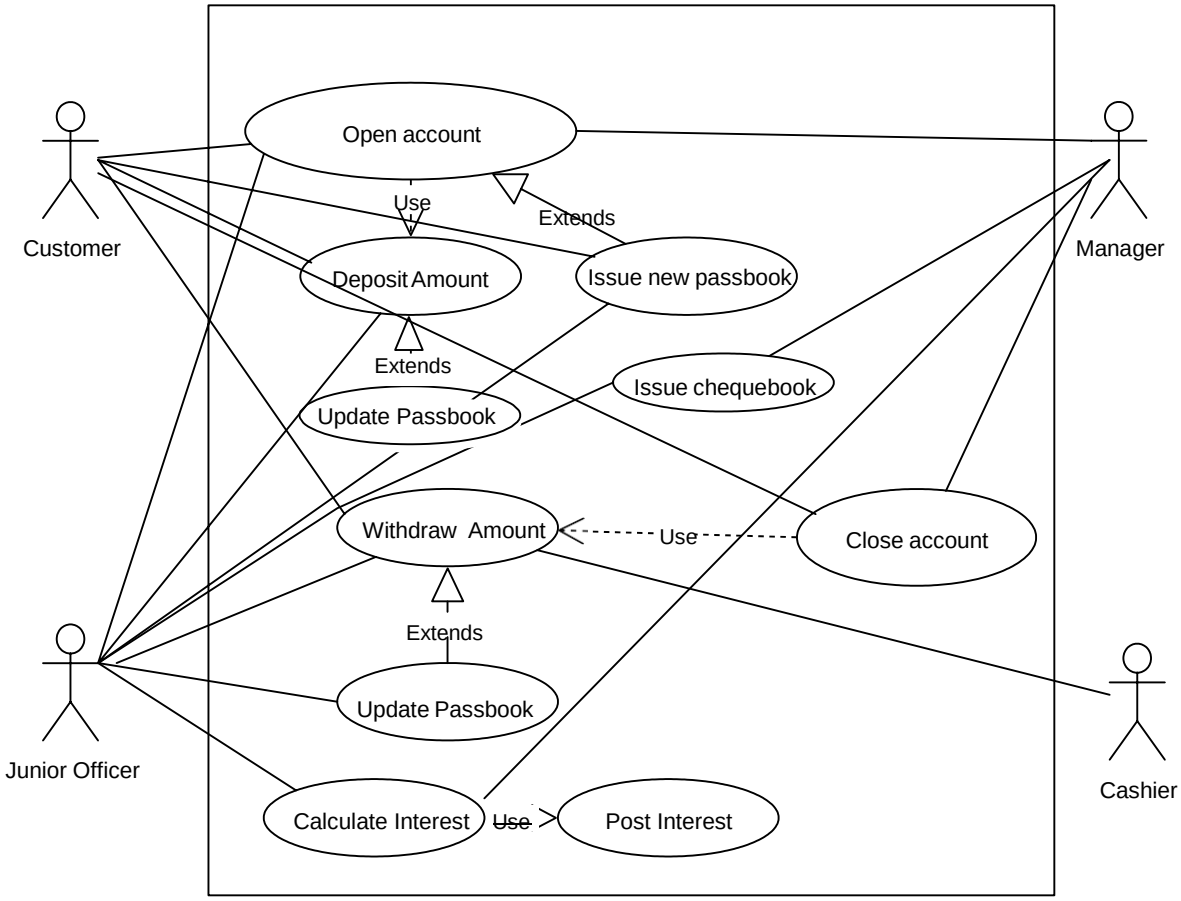
Figure 1: Use case diagram for Savings Bank Account System



The use case relationships and descriptions play a crucial role in understanding and documenting the functionality of a system. The use case diagram, which depicts the relationships between different use cases, provides a high-level overview of the system's functionality (Sa'adillah & Ali, 2022). However, it does not comprehensively understand system functions and the specific interactions between the different use cases. To address this limitation, it is necessary to provide detailed use case descriptions that provide a more in-depth explanation of each use case. These descriptions follow a template provided by the Unified Modeling Language and serve as a comprehensive guide to understanding the behaviour and interactions within the system. This approach is supported by various authors and studies. For instance, the Use Process approach combines Business Process Modelling Notation and UML Use Case Diagrams to model requirements (Bochicchio et al., 2012). This approach emphasizes the involvement of customers in the requirements definition process, leading to a successful project outcome. Furthermore, the use case descriptions also serve as a bridge between the use case diagram and the actual implementation of the system. They provide a clear understanding of the specific functionality, actors involved, and the relationships between use cases. The use case relationships, such as "use" and "extend," indicate the nature of the interactions between different use cases.

V. USE CASE DESCRIPTION

The use case description has five sections objectives, initiation of use case, flow of messages, alternative flow of messages, special/supplementary requirements, and how the use case finishes the functionHans-Erik Eriksson et al. The use case description has to be written for each use identified in use case modeling, but for this paper, we will consider only one use case description. Let us consider a use case "Withdrawal of amount"

A. Objectives of use case:
   i) To record transactions permanently.
   ii) To update the balance in the account.
   iii) To make payment to the customer.

B. How the use case is initiated:
   The customer submits a filled withdrawal slip to a junior officer in the bank.

C. The flow of messages:
   The customer submits a filled withdrawal slip to the junior officer.
   Junior officer verifies and validates information on withdrawal slips.
   The junior officer checks the balance in the account of the customer.
   Junior officer records withdrawal transactions in books of account.
   The junior officer updates the balance in the account.
   The junior officer issues a token to the customer by writing the token number on the withdrawal slip.
   Junior officer records transaction number on withdrawal slip.
   The slip is sent to the manager.
   The manager verifies and validates transactions.
   The manager signs the slip and sends it to the cashier.
   The cashier announces the token number from the slip.
   The customer hands over the token to the cashier.
   The cashier verifies the token and counts currency notes to match the amount.
   The cashier records currency details on the backside of the slip.
   The cashier makes payment to the customer.

D. Alternative flow of messages:
   i. If the account number written on the withdrawal slip is incorrect
   Inform the customer to correct it.
   ii. If the amount written on the withdrawal slip is greater than the balance in the account + minimum balance
   Inform customer of "Insufficient balance".

E. How use case finishes:
   The use case finishes by recording the transaction in the books of account, updating the balance in the account, and making payment to the customer.

Together the use case diagram and use case description make the use case model complete and clear. This will provide all stakeholders with the information about who are the users of the system? What functions are they expecting from the system? How use cases are related to each other? How the work is carried out in the system?. The information obtained here is critical for software development process and it will initiate realization of use cases in to classes, objects and relationship between them.

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VI. REALIZING USE CASES

In order to create a class diagram, it is necessary to carefully select each use case and use case description to determine the corresponding classes needed for implementation. We will begin the process of realizing use cases with the help of classes objects and relationship between them. Where each class and object can be divided in to three compartments the first compartment is used to name the class appropriately, the second compartment is used to define attributes of the class and the third compartment is used to declare methods to be implemented by the class.

Let us begin the process of use case realization by selecting "open account" use case depicted in figure 1. To implement this use case, two classes need to be designed: an interface class and a customer class, where interface class will implement user interface with the system that will enable the user to interact with system and provide necessary input. The customer class will define attributes of customer that are necessary for the function. Also the methods should be identified for the class that are must for carrying out the required function in the system.

Additionally, a decision must be made regarding the handling of database utilities. Should a common class be created to manage the interface between the database management system and the application classes, or should the code be written within each class? If the decision is to create a common class, three classes will be required to implement the "open account" use case. As the data required by accounts class is accepted and provided by use interface class and to store the date accounts class takes the help from database interface class the relationship is dependency between accounts and use interface and accounts and database interface.

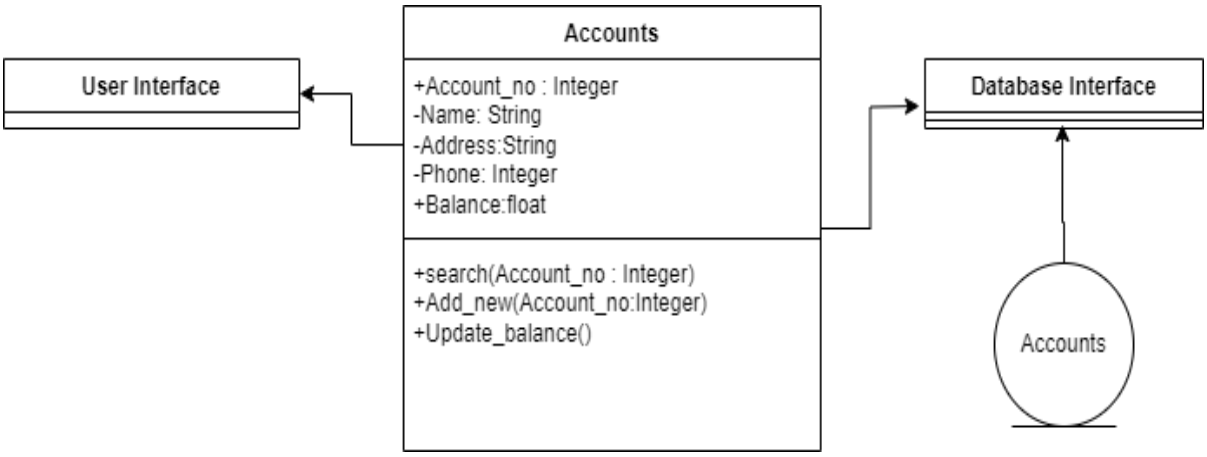

Figure 2 : Class diagram Showing Classes and relationship between them to successfully carry out open account use case.

Similarly, for the "withdraw amount" use case, an interface class must be designed to accept details about the withdrawal operation. Furthermore, when accepting the details of the withdrawal transaction, the account number of the customer needs to be validated, which is an attribute of the account class. This implies that the account class must implement search operation by accepting account number and if the account number is found it must return the account details required. If the account number is not present the account class must display a message on the interface indicating it is not found. Additionally, a table has to be designed in the database to record the data permanently. This makes a compulsion on designer that in order to handle the data a class has to be designed that is responsible for storing and retrieving data to and from the table. The scenario

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depicted here can be represented using a class diagram shown in fig. 3. Fig. 3 shows classes and relationship between then in order to implement withdraw amount use case successfully. The transaction class can be designed as a base class and withdrawal and deposit classes can be inherited from transaction class. Between accounts and transaction class the relationship is association. If a class is designed for implementing common database utilities the account and transaction classes will be dependent on this class for storage and retrieval of data from the database.

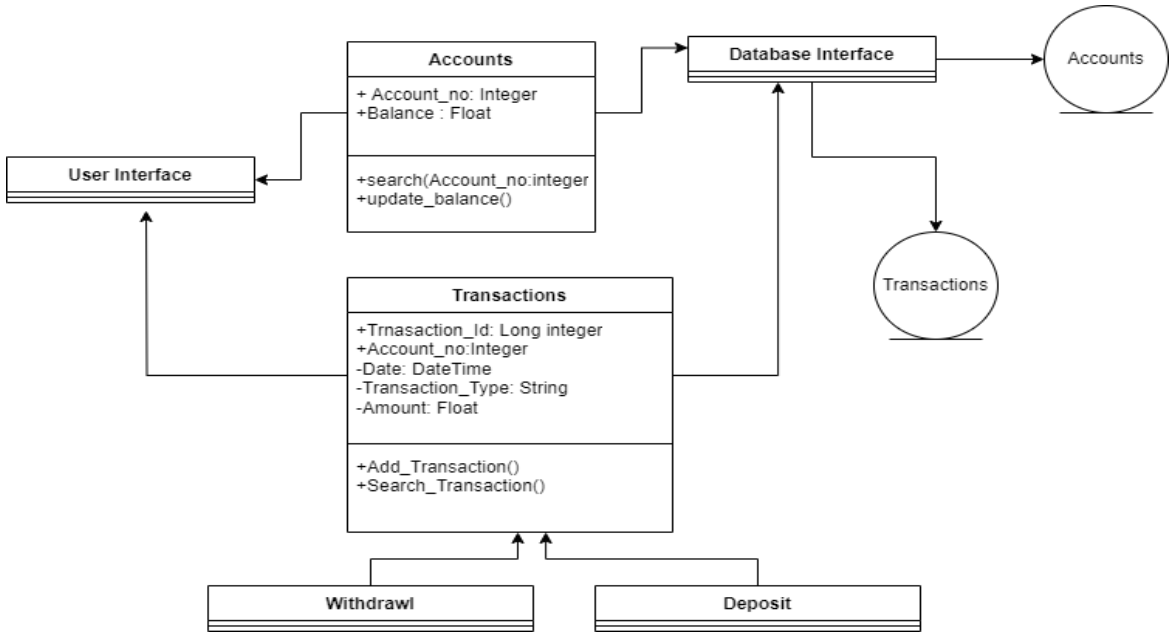

Figure 3 : Class diagram Showing Classes and relationship between them to carry out Withdraw amount and Deposit Amount use case.

The successful execution of the "deposit amount" use case necessitates the retrieval of information from the customer table through the customer class, as well as the insertion of a new transaction into the transaction table using the transaction class. To facilitate this use case, an interface class must be designed, which will accept the necessary information from the user. Furthermore, it will require an interface with the database management system. The relationship is association between accounts and transaction class and dependency between accounts and user interface and database interface.

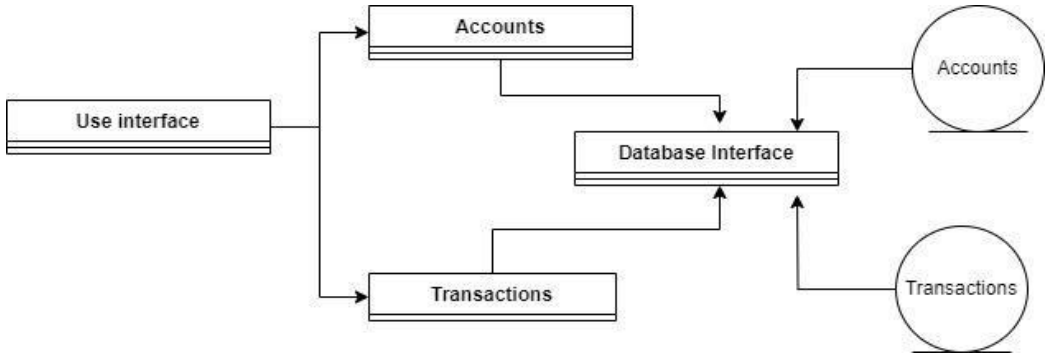

Figure 4: Update passbook use case

The update passbook use case involves retrieving data from the customer and transaction tables and subsequently generating a printed record in the passbook. However, in order to facilitate this process, it is necessary to design and develop an interface class that can accept account information for the purpose of updating the passbook.

The preceding discussion highlights the importance of creating a new class and utilizing existing classes as a reference point in order to effectively implement each use case. This emphasizes the relationship between the use cases depicted in the use case diagram and the classes depicted in the class diagram. If any use cases are omitted from the use case diagram, the class diagram will not accurately represent the necessary classes for implementing the use case. As a result, the system may fail to meet all user requirements and compromise the overall quality of the system. Therefore, it is recommended to follow a strategy that ensures the development of comprehensive and clear requirement specifications and a class model, which will ultimately enhance the quality of the system.

VII. THE PROPOSED STRATEGY:

Based on the experience and observation we recommend following strategy to enhance the quality of the proposed system. If the steps recommended are followed it can improve the overall system quality considerably.

1. Engage with the user to ascertain the functional requirements.
2. Build the list of use cases and user roles.
3. Construct a use case diagram that illustrates all the functions and user roles.
4. Write use case description for each use shown in diagram.
5. Present the diagram to both users and team members for verification and validation.
6. Refine the list of use cases and user roles.
7. Incorporate any necessary modifications to the model following the verification and validation process.
8. Analyse each use case depicted in the use case diagram along with the use case description and consider the classes needed for successful implementation.
9. Build the list of classes.
10. Identify the relationships between classes, such as association, inheritance, aggregation, and interface.
11. Validate the class diagram by cross-referencing it with the use case diagram to ensure that all required classes are accurately represented.
12. Seek verification and validation of the class diagram from members of the software development team.
13. Refine the list of classes and make necessary changes to class diagram if required.

As the quality of the system is always dependent on how many user requirements are fulfilled by the system, the strategy discussed above involves users, customers and team members we will be able to obtain their suggestions that can improve the quality of the system. This will lead to a complete and correct solution to the user problem.

VIII. SUMMARY:

The study delves into the correlation between use case diagrams and class diagrams in software engineering. It illustrates how use case diagrams clearly define the expected functions of a system from a user's perspective, which class diagrams then depict through the formulation of classes and their interconnections. The paper underscores the importance of accurate and comprehensive usecase diagrams for the development of class diagrams. It also highlights the critical role of

requirement engineering in gathering and modelling requirements during software development. The paper concludes by emphasizing that requirement engineering is an integral phase in software development, as it aids in meeting user expectations, thereby mitigating potential problems such as time and cost overruns. The researchers also propose a method for actualizing use cases through class diagrams, which includes real-life examples.

IX. CONCLUSION:

In conclusion, the paper firmly establishes the symbiotic relationship between use case diagrams and class diagrams in the sphere of software development. It sheds light on how use case diagrams facilitate the understanding of external user expectations, whereas class diagrams aid in realizing these expectations through classes, attributes, and operations. The paper underscores that the accuracy and completeness of the use case diagram is vital for the correct formation of the class diagram. The significant role of requirement engineering in software development cannot be refuted, as it is pivotal in designing a fool proof system, and circumventing issues such as missing or conflicting requirements. Failures in the requirement engineering process can lead to various detrimental effects such as missed schedules and unsatisfied customers. The paper proposes a method to implement use cases through class diagrams effectively, thereby advocating for strong interaction and collaboration between classes. The paper successfully presents the connection between use case and class diagrams and reiterates the pivotal role of requirement engineering in successful software development.

X. FUTURE WORK:

The current research paper can serve as a foundation for future work in the area of software development, with specific focus on requirement engineering. The proposed methods for translating use cases into class diagrams could be refined or other techniques could be explored. Since one of the main challenges identified in requirement engineering is the issue of missing or conflicting requirements, future research could focus on innovative strategies to ensure the accuracy and completeness of the requirements to reduce related problems. Furthermore, it would be beneficial to develop automated methods when converting functional requirements into class models, as proposed by the authors could be a very fruitful area for further investigation.

This research has its limitations, including a need for empirical evidence to substantiate the proposed method. The usage of a savings bank account system as only example also restricts the generalizability of findings to other software development scenarios. To mitigate these limitations, future research should include empirical studies to validate the relationship between use case and class diagrams, as well as examine diverse software development contexts. Multiple examples sourced from various genres of software development would provide comprehensive insights into this relationship and how it can be utilized for efficient software development.

References:

1. Bochicchio, M., Bruno, A. and Longo, A. (2012). Supporting Continuous Improvement in Care Management with BPM. International Journal of Software Engineering, 1(2), pp.32–38. doi:https://doi.org/10.5923/j.se.20110102.04.
2. Cheng, B.H.C. and Atlee, J.M. (2007) 'Research Directions in Requirements Engineering,' IEEE Computer Society Conference [Preprint]. https://doi.org/10.1109/fose.2007.17.
3. Christel, M.G. and Kang, K.C. (1992) Issues in requirements elicitation.

https://doi.org/10.21236/ada258932.

4. Eriksson, H.-E., Magnus Penker, Lyons, B. and Fado, D. (2003). UML 2 Toolkit. John Wiley & Sons.
5. Gareth Rogers (2016) 'RE in Agile Projects: Survey Results' – Requirements Engineering Magazine. [online] Available at: https://re-magazine.ireb.org/articles/re-in-agile-projects-survey-results [Accessed 4 Oct. 2023].
6. Gopal, K. et al. (2016) 'Software quality problems in requirement engineering and proposed solutions for an organization in Mauritius,' International Journal of Computer Applications, 137(2), pp. 23–31. https://doi.org/10.5120/ijca2016908698.
7. Huzoree, G. and Ramdoo, D. (2015) 'A systematic study on requirement engineering processes and practices in Mauritius,' Computer Science and Software Engineering, 5(2). https://espace.curtin.edu.au/handle/20.500.11937/16937.
8. Kamalrudin, M. and Sidek, S. (2015) 'A review on software requirements validation and consistency management,' International Journal of Software Engineering and Its Applications, 9(10), pp. 39–58. https://doi.org/10.14257/ijseia.2015.9.10.05.
9. Liu, D. (2004) 'Automating transition from use-cases to class model,' Masters Thesis [Preprint]. https://doi.org/10.1109/ccece.2003.1226023.
10. Mona Batra1, Dr Archana Bhatnagar2, (2020) "A Requirements Engineering Process Model for Software Development", International Research Journal of Engineering and Technology (IRJET), Volume: 07 Issue: 07 | July 2020 e-ISSN: 2395-0056, p-ISSN: 2395-0072.
11. Sa'adillah, M. and Ali, R. (2022). Logical framework of information technology: Systematization of software development research. Telfor Journal, 14(1), pp.26–32. doi:https://doi.org/10.5937/telfor2201026s.

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"Investment Pattern Towards Life Insurance Policy of Salaried Persons in Kolhapur City."

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Abstract:

Investment for the salaried class is a self-restriction from spending the entire income to stabilize the regular financial flow during some inevitable time hindrance. Investment is the sacrifice of a particular present value of money in anticipation of a reward. Risks and uncertainties occupy human life. Emotional factors influence Indian consumers. A Typical Indian believes in future and tries to have a better and more secure life for his family in future. A rupee earned by the person will be spent towards leading the family in the present and for a better life in future. Life insurance covers both the components, viz., risk coverage and saving. The economy comprises people, the majority of whom are middle class and salaried. Insurance has emerged as the best option for saving and risk coverage. In India, insurance is frequently well thought out as a tax-saving or saving tool instead of a tool to protect future or for long-term financial benefits.

Insurance is essential in the complex modern world since risk can be insured. Life insurance broadly covers the financial loss incurred to the family due to the death of the Insured. The insurance company compensates the insured's family by paying the sum assured. Life insurance is also considered as insurance cum investment plan, in which the policy is for a stipulated period. The maturity is calculated at the death of the insured or the completion of a stipulated period, whichever is earlier.

Amid the spread of coronavirus, various measures are being taken by the insurance players. COVID-19 has spread in more than 70 countries worldwide and has led to a lockdown in India. With the recent coronavirus outbreak, many people have become more aware of insurance and want to ensure the best medical treatment for themselves and their family members.

Therefore, in this context, the present study becomes highly essential. The detailed, extensive analysis of the behavioral patterns of the investors would help the government to work out various schemes to mobilize finance. The respondents of the study consist of only those people who are earning fixed-income salaries in Kolhapur City. The investment pattern of salaried employees differs from that of professionals and business people due to safety, regular flow of income, tax saving benefits, security and retirement benefits.

***Key Words*: Investment, Risk Coverage, Insurance, Savings, Planning, Salaried Persons**

1.1 Introduction:

Risks and uncertainties occupy human life. Emotional factors influence Indian consumers. A Typical Indian believes in future and tries to have a better and more secure life for his family in future. A rupee earned by the person will be spent towards leading the family in the present and for a better life in future. Life insurance covers both the components, viz., risk coverage and saving. The economy comprises people, and the majority of them are middle class and salaried. Insurance has emerged as the best option for saving and risk coverage. However, in India, insurance is frequently well thought-out as a tax-saving or saving tool instead of a tool to protect future or for long-term financial benefits. Indian people are predisposed to invest in property and

gold, followed by bank deposits. They selectively invest in shares, but the percentage is tiny; likewise, spending in the life insurance sector is also meagre.

Insurance is vital in the complex modern world since risk can be insured. Life insurance broadly covers the financial loss incurred to the family due to the death of the Insured. The insurance company compensates the insured's family by paying the sum assured. Life insurance is also considered as insurance cum investment plan, in which the policy is for a stipulated period. The maturity is calculated at the death of the insured or the completion of a stipulated period, whichever is earlier. It has led to growth in the insurance business and the evolution of various types of insurance covers.

Most life insurance policies sold in India are not term-life but investment-linked policies, usually with modest returns. Since life insurance is used for risk coverage as well as a means of savings and investment, its demand depends on the changing financial resources and needs of a family.

The insurance sector is growing vastly in India. This growth is driven by India's favourable regulatory environment, guaranteeing reliability and fair play. This environment has become an insurance market, encouraging foreign investors to tap into the sector's enormous potential since the Indian government liberalized the insurance sector in 2000 and opened the doors for private contributions.

a. Theoretical Background

Insurance is defined as a contract or a policy in which an individual or organization receives financial protection and reimbursement of damages from the insurer or the insurance company. The basic principle of insurance is that an entity will choose to spend small periodic amounts of money against the possibility of a huge unexpected loss. All the policyholder pools their risks together. Any loss that they suffer will be paid out of their premiums which they pay.

Life assurance is a contract between the policy owner and the insurer, where the insurer agrees to pay the designated beneficiary a sum of money upon the occurrence of the insured individual's death or other event, such as terminal or critical illness. In return, the policy owner agrees to pay a stipulated amount at regular intervals or lump sums. Life-based contracts tend to fall into two major categories:

- ✓ **Protection Policies** are designed to provide a benefit in case of a specified event, typically against lump sum payment. A common form of this policy is Term Insurance, Whole Life,and Pension/Retirement Plan.
- ✓ **Investment Policies**: The main objective is to facilitate capital growth by single or regular premiums. The common forms in this category include ULIP, Money Back, and Endowment Plans

b. Salaried Investors:

The respondents of the study consist of only those people who are earning fixed Income as salary. The Investment pattern of salaried employees differs from that of professionals and business people due to safety, regular flow of income, tax saving benefits, security and retirement benefits.

1.2 Significance of the Study

A big boom has been witnessed in the Insurance Industry in recent times. Many new players have entered the market and are trying to gain market share in this rapidly improving market.

- ✓ As the large insurance market is still untapped, based on the survey, the potential of theIndian market can be evaluated.

- ✓ New distribution channels and marketing strategies can be evaluated based on the awareness of Life Insurance.

1.3 Objectives of the Study

The purpose of the study is to determine the behaviour and preference of salaried persons toward Life Insurance Policies.

1. To determine customer's perceptions towards Life Insurance Companies
2. To study features considered while buying an Insurance Policy.
3. To analyze the factors considered before and while buying the Insurance Policy.
4. To study the most preferred type of policy and Life Insurance Company.

1.4 Hypothesis of the Study

Ho: There is no relation between Age and Policy type.
H1: There is a relation between Age and Policy type.

1.5 Research Methodology

Research methodology is a way to solve the problem systematically. The study of the research design is descriptive because it highlights the relationship between age group and income level on tax saving amount.

a. Sources of Data Collection

The primary data is collected through a questionnaire method by circulating Google Forms in the presence of various salaried persons in Kolhapur city.

The secondary data related to the literature review, theoretical background, and conceptual data are collected by visiting the Library and refereeing articles and research papers related to our study.

b. Sampling

The sample size was planned to be 80. The snowball sampling technique is used to select a sample of 80 salaried persons by using Google Forms. As the primary data is collected through Google form by snowball sampling, the data of the first 80 respondents are considered for data analysis.

c. Scope of the Study

As the data is collected from salaried persons of Kolhapur City, the scope of the study is limited to Kolhapur City.

1.6 Limitations of the Study

1. The present study is limited to a survey of only salaried persons.
2. The study is applied in nature. The findings emerging from the analysis are helpful to investment planning of salaried persons only.

2. Data Analysis & Interpretation

The primary data of 50 salaried persons is collected through a Google Forms questionnaire. The data of 50 respondents is analyzed in the following various tables.

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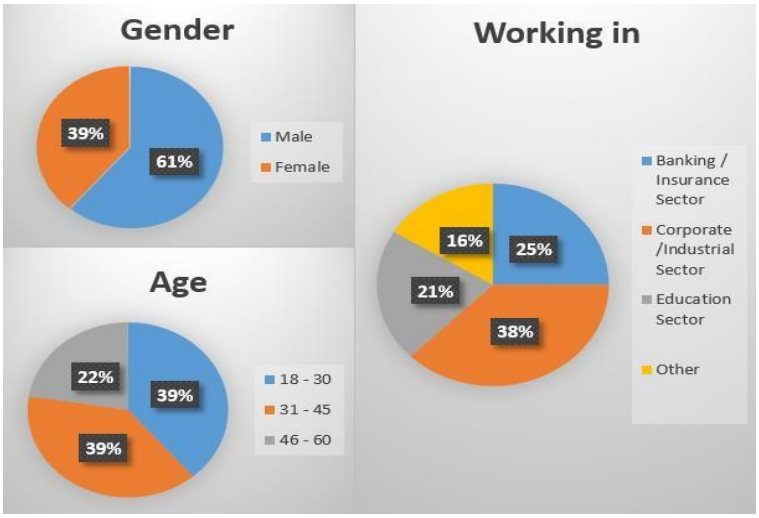
Table 1 Demographic Profile of the Respondents

Demographic	Variable	No. of Respondents	% of Respondents
Age	18 – 30 years	31	39
	31 – 45 years	31	39
	46 – 60 years	18	22
Gender	Male	49	61
	Female	31	39
Working in	Banking / Insurance Sector	20	25
	Corporate /Industrial Sector	30	38
	Education Sector	17	21
	Other	13	16



Inference: The demographic information gathered from the respondents in various graphs. According to the study, 39% of employees are aged 31 to 45 and 39 % are aged 46 to 60. 38% of respondents are working in the Corporate – Industrial Sector, and 25% are working in the Banking – Insurance Sector.

Table 2 Factors considered for selection of Insurance Policy

Factor	Variable	No. of Respondents	% of Respondents
Maturity Period	5 – 10 Years	10	13
	10 – 15 Years	39	51
	Above 15 Years	31	36
Premium Frequency	Yearly	18	23
	Half Yearly	21	26
	Quarterly	12	15
	Monthly	29	36

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Selection Channels	Self	20	25
	Agent	36	45
	Financial Advisor	24	30
Perception	Protect Future	43	54
	Tax Saving Instrument	21	26
	A Saving Tool	16	20

Inference: The table shows that 36% of respondents are investing for more than 15 years, while in total, 87% are investing for more than 10 years. 36% are selecting premiums on a monthly basis, while 23% are paying yearly premiums. 75% of respondents are selecting insurance policies with the help of an Agent or Financial Advisor. 54% are investing to protect their future, while 26% are investing as tax benefit instruments.

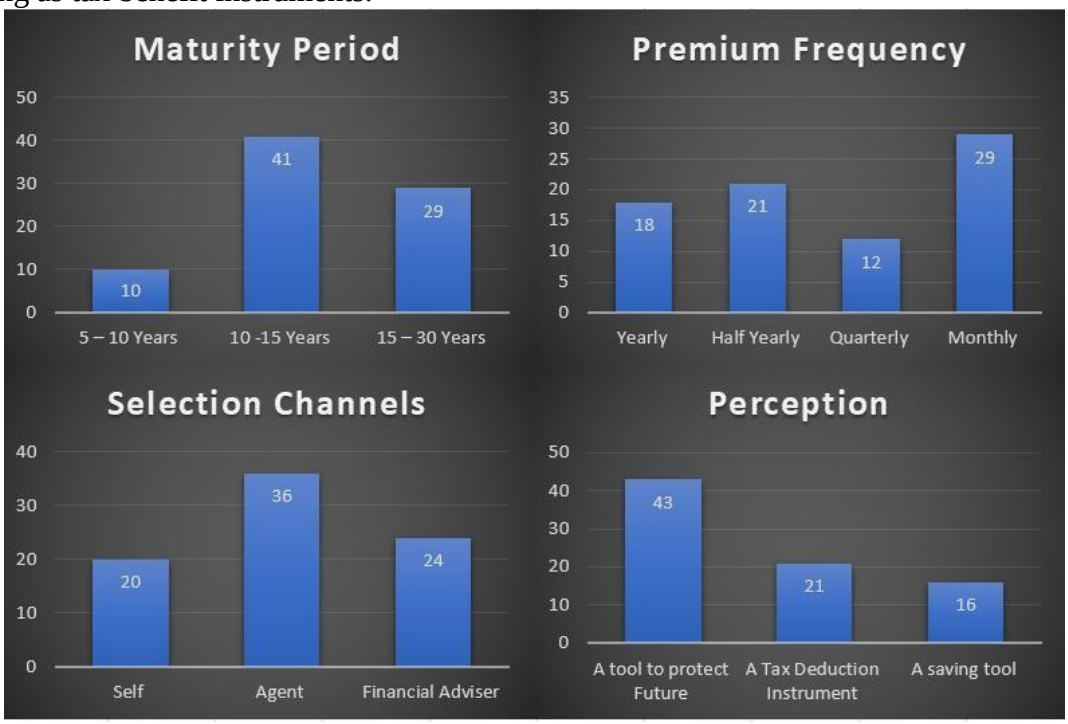

Table 3 Insurance Company Preferred by Respondents

INSURANCE COMPANY	Number of Respondents	Percentage
Life Insurance Corporation	42	27%
SBI Life Insurance	34	22%
ICICI Prudential	19	12%
HDFC Life Insurance	17	11%
Tata AIA Life Insurance	12	8%
Max Life Insurance	10	6%
Bajaj Allianz Life Insurance	6	4%

Birla Sun Life Insurance	6	4%
Kotak Life Insurance	5	3%
AEGON Life Insurance	3	2%
Reliance Nippon Life Insurance	2	1%

Note: *Since some of the respondents have mentioned more than one response, the responses outnumbered the respondents*

Inference: The above table shows that 27% of respondents are with LIC – Life Insurance Corporation. SBI Life Insurance is in second position with 22% preferred insurance company. ICICI Prudential Insurance and HDFC Insurance are with 12% and 11% at third and fourth positions.

Table 4 Company Features considered for buying Insurance policy

COMPANY FEATURES	RESPONSES	PERCENTAGE
Reputation of Company	55	47%
Larger Life Coverage	28	24%
Claim Settlement Ratio	25	21%
Minimum Investment Amount	10	8%
Total	**118**	**100%**

Note: *Since some of the respondents have mentioned more than one response, the responses outnumbered the respondents*

Inference: The above table shows that 47% of respondents buy insurance by considering the Reputation of the Company. Also, 21% of respondents were selected based on the claim settlement ratio.

Hypothesis of the Study

Ho: There is no relation between Age and Policy type.

H1: There is a relation between Age and Policy type.

Table 5 Policy Nature and Age Group

Plans and Age	18-30	31-45	46-60	Total
Insurance with Investment Plans	34	41	11	86
Pure Insurance Plans	13	20	26	59
Total	47	61	37	145

Observed Frequency Of	Expected Frequency Ef	$\frac{(Of - Ef)^2}{Ef}$
34	28	1.29
41	36	0.69
11	22	5.50
13	19	1.89
20	25	1.00
26	15	8.07
	χ^2 =	**18.44**

Degrees of Freedom = (r -1) x (c – 1) = (2 -1) x (3 -1) = 2 **Hence,** $\chi^2_{0.05, 2}$**= 5.99**

As the calculated Chi-square value is greater than the table value at a 5 % significance level, we reject the null hypothesis.

Inference: Hence, it is concluded that "There is a relation between Age and Policy type."

3. Findings

1. In the study, the student has investigated 80 salaried respondents of Kolhapur City, and it reveals that 25% of investors are selecting the insurance policies by themselves while the remaining 75 % are taking the help of Financial Advisers and agents.
2. 87% of the investors are taking insurance policies for more than 10 years.
3. 51% of investors pay insurance premiums on a monthly or quarterly basis, while the remaining 49% pay on a yearly or yearly basis. It indicates that the premium paying frequency does not affect policy selection.
4. 54% of investors are selecting insurance for protecting their as well as their family's future.
5. Though many companies are in the insurance business, Life Insurance Corporation of India is still leading with 27%, followed by SBI Life Insurance with 22%.
6. 47% of investors are buying insurance policies by considering the Company's Reputation, and 21% of investors by considering the Claim Settlement Ratio.
7. The chi-square' method is used for hypothesis testing, and it found that “There is a relation between Age and Policy type.”

4. Conclusion

In Kolhapur City, the investment habits of salaried persons are changing very frequently. Individuals have their perceptions towards various types of investment plans. Most of those feel insurance is a tax-saving option rather than risk protection and saving options. If their investment patterns are analyzed, most respondents prefer long-term investments and low-risk-moderate return options. The respondents are choosing an insurance company and insurance policy from agent and certified financial adviser. Analysis shows that investment preferences are affected by age and income. However, LIC, without any doubt, is the market leader in the life insurance sector.

References:

1. **Deepak Sood, D. N. (2015).** Study of Saving And Investment Pattern Of Salaried Class People With Special Reference To Chandigarh (India). *International Journal of Research in Engineering, IT & Social Sciences ISSN 2250-0588, Volume 5*(Issue 2).
2. **Gautam, S. L. (2013).** Income Tax Planning: A Study of Tax Saving Instruments. *International Journal of Management and Social Sciences Research (IJMSSR) ISSN: 2319-4421, Volume 2*(No 5).
3. **Kothari, C. R. (n.d.).**Research Methodology, Methods and Techniques (Second Revised ed.). *New Age International (P) Ltd. New Delhi.*
4. **Miranda, Mavy,(2023).** A Study of Investment Pattern of Salaried Employees in Udupi City, *EPRA International Journal of Environmental Economics, Commerce and Educational Management, Volume: 10 | Issue: 8| August 2023, ISSN: 2348 – 814X*
5. **Neena, Therasa, P. J., S, Bhuvaneswari,(2022).**A Study on Investment Pattern of Salaried People with Reference to Coimbatore City, *International Journal of Creative Research Thoughts (IJCRT)Volume 10, Issue 6 June 2022 | ISSN: 2320-2882*
6. **Thomas, J. (n.d.)**. *A Study on Prefered Investment Avenues among Salaried People*. Retrieved from http://groupexecelindia.com/St.J_College/pdf/9.pdf

Prospects for Sustainable Economic Development: Charting India's Path to a Prosperous Future

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ABSTRACT:

This present research paper discusses the significance of sustainable economic development in India, focusing on its impact on the environment, social equity, and long-term economic stability. Sustainable economic development in India is pivotal for addressing environmental, social, and economic challenges simultaneously. It promotes a holistic approach that not only fosters long-term economic growth but also safeguards the environment, promotes social equity, and enhances the well-being of its citizens. By embracing sustainability, India can position itself for a prosperous and resilient future in a rapidly changing global landscape. Sustainable economic development promotes long-term stability by diversifying the economy, increasing resource efficiency and supporting responsible fiscal policies. By reducing the risk of financial shocks and ensuring efficient use of resources, India can navigate the complexities of the global economy with greater resilience.

Keywords: Sustainable Economic Development, Inclusive growth, India, Prosperous Future, Long term.

I. INTRODUCTION:

India is world's most populations and diverse nations, stands at a critical juncture in its pursuit of sustainable economic development. With a rich history and a rapidly evolving global landscape, the path to prosperity for this South Asian giant is being carefully charted. In this era of unprecedented challenges and opportunities, India's prospects for sustainable economic growth are a topic of significant importance. This introduction serves as a gateway to exploring the multifaceted dimensions of India's development journey, emphasizing the critical factors and strategies that will shape the nation's future.

At the core of India's aspirations lies the ambition to build an economy that not only grows robustly but also addresses pressing social and environmental concerns. The nation seeks to foster inclusive growth that uplifts all segments of its diverse population while ensuring the responsible stewardship of its natural resources. Achieving this delicate balance is no small feat, and it necessitates an in-depth examination of the key elements driving India's economic trajectory. From harnessing the potential of its youthful and skilled workforce to navigating the challenges of income inequality and environmental sustainability, India faces a myriad of complex issues on its path to prosperity. Moreover, in a rapidly globalizing world, India must navigate the intricacies of international trade, technology adoption, and geopolitical dynamics to secure its position on the global stage. As we delve into the various facets of India's economic development, it becomes evident that the nation's journey is both a source of inspiration and a case study for nations worldwide seeking to chart a course towards sustainable and equitable economic progress.

This exploration of India's prospects for sustainable economic development aims to shed light on the opportunities and challenges that lie ahead. By understanding the intricate interplay of factors influencing India's growth trajectory, we can gain insights into how nations can achieve a prosperous and sustainable future in an increasingly interconnected world.

II. LITERATURE REVIEW

1. Singh, A., Kanaujia, A., & Singh, V. K. (2022). Focused to measure the research activities on SDGs in India. This research study utilises standard bibliometrics approach and textual

analysis of data collected from Dimensions database for a five-year period (2016–2020). The results of this study show a positive response from the Indian research community towards the SDGs. It stated that about 12 percent of the total research output from India is found directly related to SDGs. The overall research study was based on Main Contributors Technical subjects such as Engineering, Medical and Health Sciences, and Chemical Sciences.

2. Patil, J. S., & Kadam, B. J. (2014): This study attempts to analyse sustainable development in Indian perspective. For this research study Researchers Study period of 2000-01 to 2009 -10. This research paper highlights the role of sustainable development in economic growth of the country. In this research study researcher want to analyse the indicators of sustainable development the impact on Indian Economy. This research stated that Development plays an important role in economic development in today. This study concludes that India has been converted into developed country from underdevelopment one, when the share of Manufactured goods in exports is considered. But at the same time, it has failed in achieving self- sufficiency in the production of capital goods that play a vital role in achieving Sustainable development. India has failed in tackling the problem of poverty and promoting the development of human Resources.
3. Pooja, M. (2021):.This study analyses the impact of challenges on inclusive growth of India. It. According to this study 'Jobless Growth' is a risk to the Indian economy. This study also focuses on importance of sustainable economic growth and development. This study suggests that the government should use appropriate direct or indirect instruments of economic policy, increase the expenditure on health and create more job opportunities in all the sectors.
4. Alba Kruja (2013): While the majority of people continue to live in poverty, a small percentage of the population may see an improvement in their standard of living as a result of economic growth. The degree of development is determined by the distribution of economic growth within the population. This research looks at the history of environmentally friendly growth, as well as how it should be envisioned and what needs to be done to make it a reality.
5. Yi Zuo, Ying-ling Shi and Yu-zhuo Zhang (2017): This paper provides a detail study on the Beijing-Tianjin-Hebei region in China by using a scenario Analysis method. The models presented in this work can aid in the comprehension of a 3E coordination system's sustainable development pattern and serve as a resource for institutions that have policy-making authority. According to the findings, the 3E system's long-term development in the Beijing, Tianjin, and Hebei region is not appropriate, it is modifiable by modifying the energy structure. Additionally, more money should be allocated to environmental protection, as this will enhance the excellence of the environment and guarantee steady growth as opposed to uncontrollably rising energy and GDP.
6. Anirban Banerjee (2022): This study on Sustainable Development in India seeks to examine how far the Sustainable Development Goals have been achieved In India. He focused on some selected human development and environment protection goals with special reference to West Bengal. In two sections, this study looked at a few specific SDGs: protecting the environment and promoting human development. They conducted a case study on sustainable development in West Bengal and talked about the main trends in SDG research. They discovered that West Bengal's and India's track records for attaining the SDGs differed from one another. In order to achieve the goals of human development—

reducing poverty, achieving food security, good health, gender equality, a decent standard of living, access to clean water and sanitation, and environmental protection—need of people-oriented policies as well as eco-friendly ones.

OBJECTIVES OF THE STUDY

1. To understand the meaning of sustainable economic growth.
2. To know the significance of sustainable economic development in India, focusing on its impact on the environment, social equity, and long-term economic stability.
3. To Study the key challenges and opportunities facing India on its path to sustainable economic development
4. To analyse the significant progress made by India towards sustainable economic development in various sectors.

III. RESEARCH METHODOLOGY:

This paper is descriptive and based on secondary data that have been taken from Economic Survey, government official websites, internet, magazines, and journal, and newspapers, Research papers.

SUSTAINABLE DEVELOPMENT IN ECONOMIC PERSPECTIVE

Sustainability includes growth in the social, environmental, and economic spheres. From an economic standpoint, sustainable development is defined as economic growth that satisfies current demands without jeopardising the ability of future generations to satisfy their own. It is a comprehensive strategy for development that considers environmental, social, and economic aspects. Reducing pollution, developing renewable energy sources, and making optimal use of resources are all necessary for sustainable economic growth. It also necessitates the development of occupations that pay a liveable income as well as investments in healthcare and education.

Economic Development and Sustainable Economic Development are related concepts, but they differ in their scope and objectives:

Economic Development:	Sustainable Economic Development:
Economic development refers to the process of improving the economic well-being and standard of living of a country or region's population. It typically focuses on increasing the overall economic output, income levels, and employment opportunities within an economy. Key characteristics of economic development include: • Growth-Centric: Economic development often emphasizes increasing Gross Domestic Product and per capita income as primary indicators of progress. • Short-Term Focus: It may prioritize immediate economic gains without necessarily considering the long-term impact on the environment or social equity.	Sustainable economic development, on the other hand, incorporates environmental, social, and economic considerations to ensure that economic growth is achieved in a way that preserves resources, promotes social equity, and minimizes negative environmental impacts. Key characteristics of sustainable economic development include: • Holistic Approach: Sustainable economic development takes a more comprehensive view, considering ecological, societal, and Economical dimensions. It seeks to balance these aspects for long-term well-being. • Long-Term Focus: It prioritizes strategies and policies that promote economic growth and addressing social inequalities for future generations

• Industrialization: Economic development frequently involves industrialization, urbanization, and infrastructure expansion to stimulate economic activity. • Resource Utilization: It may not prioritize sustainable resource management and can lead to resource depletion and environmental degradation if not managed carefully.	• Environment Stewardship: Sustainable development incorporates strategies to reduce pollution, conserve natural resources, and combat climate change. It aims to protect ecosystems and biodiversity. • Social Equity: It emphasizes inclusive growth, aiming to reduce income disparities, improve access to education and healthcare, and ensure that the benefits of development are distributed more equitably. • Resource Efficiency: Sustainable development seeks to optimize resource use, reduce waste, and promote renewable energy sources to minimize the ecological footprint.

Significance of Sustainable Economic Development in India with a focus on its impact on the environment, social equity, and long-term economic stability:

1. Environmental Impact:
    - Mitigating Environmental Degradation: India faces severe environmental challenges, including high levels of air and water pollution, deforestation, and land degradation. Sustainable economic development places a strong emphasis on responsible resource management and pollution control measures. This helps mitigate environmental degradation, leading to cleaner air and water, healthier ecosystems, and improved overall environmental quality.

    - Addressing Climate Change: India is susceptible to the impacts of climate change, including extreme weather events and rising sea levels. Sustainable development strategies incorporate climate adaptation and mitigation measures, such as the adoption of renewable energy sources, reforestation, and the promotion of energy-efficient technologies. These measures not only reduce India's carbon footprint but also enhance its resilience to climate-related challenges.

    - Conservation of Biodiversity: Sustainable economic development includes efforts to protect and conserve biodiversity. India is home to a rich array of flora and fauna, and sustainable practices help safeguard these valuable natural assets. Preserving biodiversity is not only vital for ecological balance but also supports industries like ecotourism.

2. Social Equity:
    - Inclusive Growth: One of the key principles of sustainable development is inclusive growth. India's income inequality and regional disparities have been

persistent challenges. Sustainable economic development prioritizes policies and programs aimed at reducing disparities and ensuring that economic benefits are shared more equitably among various social and income groups.

- Empowering Marginalized Communities: Sustainable development efforts often include initiatives to empower marginalized and disadvantaged communities. This can involve skill development programs, access to education and healthcare, and support for small-scale entrepreneurs in rural areas. Empowering these communities not only improves their quality of life but also enhances their participation in the broader economy.

- Gender Equality: Sustainable development recognizes the importance of gender equality. It promotes women's participation in economic activities and decision-making processes. This not only fosters social equity but also contributes to economic growth by harnessing the full potential of the workforce.

3. Long-Term Economic Stability:

- Diversification of the Economy: Sustainable economic development encourages diversification of the economy. Overreliance on a single industry or resource can make an economy vulnerable to external shocks. By diversifying into sectors like technology, renewable energy, and manufacturing, India can enhance its economic stability.

- Resource Efficiency: Sustainable practices, such as efficient water and energy use, reduce wastage and resource depletion. This not only conserves resources for the future but also improves economic efficiency, lowering production costs for businesses.

- Responsible Fiscal Policies: Sustainable development emphasizes responsible fiscal policies, including debt management and long-term planning. This helps ensure that the government can continue to provide essential services and invest in infrastructure even during economic downturns.

- Resilience to Global Challenges: In an interconnected world, economic stability is closely linked to global events. Sustainable development equips India to better weather global economic crises, making it more resilient to external shocks.

Challenges and Opportunities

India faces a range of challenges and opportunities on its path to sustainable economic development. India’s journey towards sustainable economic development involves navigating these challenges while capitalizing on its unique opportunities. Effective policies, investments, and international collaborations will be crucial in achieving a prosperous and sustainable future for the nation.

Challenges:

- Income Inequality: High income inequality persists in India, with a significant disparity between the wealthy and poor . Addressing this disparity is essential for achieving inclusive growth and social equity.
- Environmental Degradation: India grapples with severe environmental challenges, including air and water pollution, deforestation, and climate change impacts. Balancing economic growth with environmental sustainability is a significant challenge.
- Resource Scarcity: As India's population continues to grow, the demand for natural resources such as water, energy, and arable land increases. Ensuring resource efficiency and sustainability is crucial.
- Infrastructure Gaps: India faces infrastructure deficiencies in areas like transportation, energy, and healthcare. Bridging these gaps is essential for fostering economic growth and improving living standards.
- Skill Mismatch: There is often a discrepancy between the abilities possessed by the workforce and the demands of the job market. Addressing this skill gap is vital for maximizing economic productivity.
- Agricultural Challenges: India's agricultural sector faces issues like low crop yields, water scarcity, and farmer distress. Implementing sustainable farming practices and enhancing agricultural productivity are key challenges.
- Access to Education and Healthcare: Ensuring quality education and healthcare services for all citizens is essential for human capital development and reducing social disparities.
- Urbanization Pressures: Rapid urbanization is straining cities with challenges like congestion, inadequate housing, and pollution. Sustainable urban planning and development are critical.
- Geopolitical Factors: India faces geopolitical challenges that can impact economic stability and trade relationships, such as border disputes and regional tensions.

Opportunities:

- Demographic Dividend: India has a youthful population, offering a significant workforce. Capitalizing on this demographic dividend through skill development and job creation can drive economic growth.
- Renewable Energy: India has abundant renewable energy resources. Expanding the use of solar and wind power presents a significant opportunity for reducing carbon emissions and increasing energy efficiency.
- Digital Transformation: India's digital economy is growing rapidly, fostering innovation and entrepreneurship. Leveraging technology and digital infrastructure can enhance economic competitiveness.
- Sustainable Agriculture: Adopting sustainable agricultural practices can boost crop yields, conserve resources, and improve food security.
- Manufacturing and Export: India has the potential to become a global manufacturing hub, with opportunities to increase exports and attract foreign investment.

- Financial Inclusion: Expanding financial services to the unbanked population can drive economic growth and reduce poverty.
- Entrepreneurship: India's vibrant start-up ecosystem fosters innovation and job creation, contributing to economic development.
- Global Partnerships: Engaging in international collaborations and trade agreements can enhance India's economic prospects and global standing.
- Sustainable Urbanization: Implementing sustainable urban planning practices can improve the quality of life in cities and drive economic growth.
- Healthcare and Pharmaceuticals: India has a thriving pharmaceutical industry with opportunities for both domestic and international growth.

Significant Progress Made by India

India has made significant progress toward sustainable economic development across various sectors. While the journey is ongoing, several notable advancements stand out:

- Renewable Energy: India has emerged as a global leader in renewable energy adoption. The country has made substantial investments in solar and wind power, leading to a substantial increase in renewable energy capacity. Initiatives like the National Solar Mission and competitive bidding for solar projects have been essential in achieving this progress. India is on track to exceed its renewable energy targets, reducing its carbon footprint and contributing to environmental sustainability.

- Electric Mobility: India has been actively promoting electric vehicles (EVs) as a means to reduce air pollution and dependence on fossil fuels. Incentives, subsidies, and infrastructure development for EVs, along with initiatives like the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme, have accelerated the transition to electric mobility.

- Green Finance: The Indian financial sector has witnessed the emergence of green finance and sustainable banking practices. Banks and financial institutions are increasingly incorporating environmental, social, and governance (ESG) factors into their lending and investment decisions. This shift promotes investments in sustainable projects and responsible business practices.

- Waste Management: India has made strides in waste management and sanitation through initiatives like the Swachh Bharat Abhiyan (Clean India Campaign). This nationwide program has significantly improved sanitation facilities and waste disposal infrastructure, leading to cleaner and healthier living conditions in many areas.

- Rural Development: Schemes such as the MGNREGA Act have not only provided employment opportunities in rural areas but also contributed to sustainable development. Projects under MGNREGA include activities like afforestation and water conservation, promoting environmental sustainability.

- Digital Transformation: India's digital revolution has fostered economic development while reducing environmental impact. Initiatives like Digital India and the promotion of digital payments have enhanced efficiency in various sectors, including governance, banking, and e-commerce, reducing the need for physical resources.

- Agriculture: sustainable farming methods like organic farming and precision agriculture, are gaining traction in India. These practices aim to enhance crop productivity while minimizing environmental harm through reduced pesticide and fertilizer use.

- HealthCare: The healthcare sector has seen innovations in telemedicine and digital health, improving access to healthcare services while reducing the carbon footprint associated with physical medical visits.

- Education: India's emphasis on education and skill development has not only empowered its workforce but also promoted social and economic sustainability. Education is a cornerstone for equitable development.

- Clean Transportation: India is exploring cleaner transportation alternatives, such as compressed natural gas (CNG) for public buses, metro rail systems, and pedestrian-friendly urban planning, which contribute to reduced pollution and congestion in cities.

IV. RESULTS AND DISCUSSION

- India's Renewable Energy: India, home to 1.3 billion people, has a huge energy demand to support its quickly expanding economy. India was an energy-deficient country when it gained its independence, but efforts to make the country energy independent have continued for more than 70 years. With more than four lakh MW of installed electricity capacity.

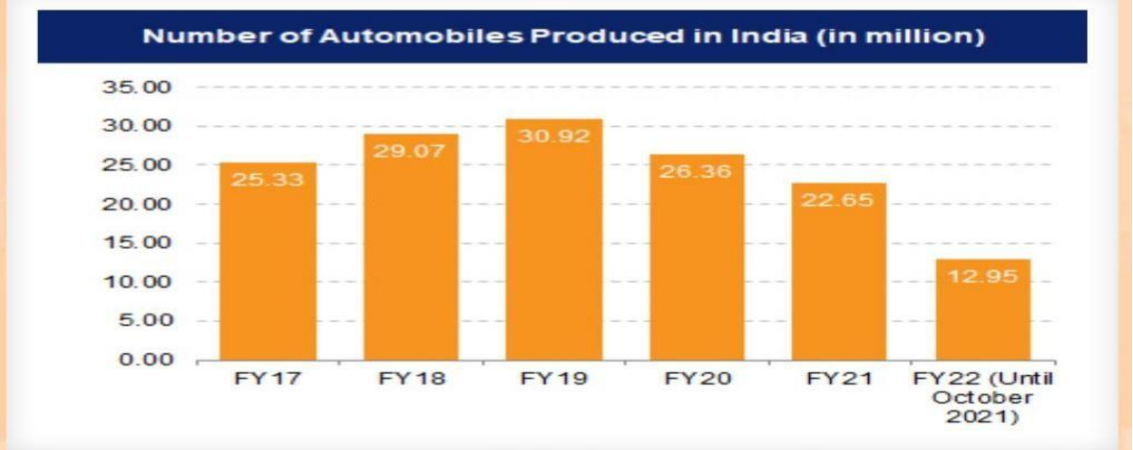
Installed capacity of renewable sources of energy in India

Solar	Wind	Small hydro	Large hydro	Biopower	Nuclear
48.55 GW	40.03 GW	4.83 GW	46.51 GW	10.62 GW	6.78 GW

Source: Press Information Bureau Gove. Of India 2022

- India achieved a noteworthy achievement in 2023–24 (through August 2023) by selling 8,32,434 EVs.By 2025, it is predicted that India's electric vehicle (EV) market will grow to a value of Rs. 50,000 crore, or US$ 7.09 billion. According to a CEEW Centre for Energy Finance study, India could offer US$ 206 billion in opportunities for electric car sales by 2030. This will require an investment of US$ 180 billion in infrastructure for charging and vehicle manufacturing. The Rocky Mountain Institute (RMI) and NITI Aayog predict that by 2030, India's EV finance

market will be valued at approximately US$ 50 billion, or Rs. 3.7 lakh crore. As per report the India energy storage alliance, the country's EV market is anticipated to develop at compound annual growth rate (CAGR) of 36% until 2026. Furthermore, the market for EV batteries is anticipated to grow at a 30% compound annual growth rate (CAGR) over the same time frame. The goal of the Indian automobile industry is to export five times as many vehicles between 2016 and 26. India's total automobile exports in FY23 were 47, 61,487. In FY23, India's two-wheeler automobile exports totalled 36, 52,122.



Source: IBEF

- Advancements in Healthcare Infrastructure -The Economic Survey 2023 highlights the noteworthy improvement in human resources, which are the fundamental constituents of the healthcare system. In addition to health management and support staff, they include doctors, nurses, pharmacists, midwives, dentists, allied health professionals, community health workers, social workers, and other healthcare practitioners. Creation. 32,384 clusters with a combined 6.4 lakh hectares of land and 16.1 lakh farmers have As of November 2022, been covered. Likewise, 177 FPOs/FPCs have been awarded under MOVCDNER. Established Source : Economic Survey 2022-23
- Automobile Industry: According to the Economic Survey, in 2022 end , our nation surpassed Germany and Japan to third-largest car market by sales volume . It was further stated that India was the world's fourth-largest producer of passenger cars in 2021 and the biggest producer of two- and three-wheeled vehicles. In further detail, the Economic Survey projected that the domestic electric vehicle (EV) market would reach one crore units sold annually by 2030, growing at a 49% between 2022 and 2030. It further stated that by 2030, the EV sector will generate 5 crore direct and indirect jobs.

CONCLUSION

In conclusion, India's prospects for sustainable economic development are promising as the nation charts its path to a prosperous future. With a growing population, a dynamic workforce, and a commitment to innovation and technology, India has the ability to become a major global

economic player. However, to achieve sustainable development, India must address key challenges such as income inequality, environmental sustainability, and infrastructure development. Investments in education and skill development, along with policies that promote inclusive growth, will be crucial in reducing income disparities and ensuring that the benefits of economic growth are distributed more equitably. Additionally, a continued focus on renewable energy sources and environmental conservation will be essential to mitigate the unfavourable consequences of climate change and ensure long-term sustainability. Furthermore, India's government and private sector should collaborate to enhance infrastructure development, including transportation networks and digital connectivity, which are essential for economic growth and competitiveness in the global market. In summary, India's journey towards sustainable economic development is a complex but attainable goal. By addressing these challenges and seizing opportunities, India can open doors for a prosperous future that benefits all its citizens while contributing to global economic progress.

REFERENCES

1. Economic Survey 2022-23

2. Kruja, A 2013, 'Sustainable Economic Development, a Necessity of the 21st Century', Mediterranean Journal of Social Sciences.

3. Prashar, A & Sunder M, V 2019, 'A bibliometric and content analysis of sustainable development in small and medium-sized enterprises', Journal of Cleaner Production, pp. 1-35.

4. Ulugbek, a 2015, CBU International Conference on Innovation, Technology Transfer, and Education.

5. Rao, PK 2000, Sustainable Development, Blackwell Publishers, Malden, Massachusetts, USA, p. 84.

6. Pezzey, J, 'Economic Analysis of Sustainable Growth and Sustainable Development', World Bank.

7. Patil, JS & Kadam, BJ 2014, 'Sustainable Development in Indian Economic Perspective', Journal of Economics and Sustainable Development.

8. Choudhary, R, & Srivastava, PP 2020, 'Economic Growth and Sustainable Development in India', International Journal of Recent Technology and Engineering (IJRTE), vol. 9, no. 4.

9. Pooja, M 2021, 'The challenges of Sustainable Economic Growth in India', International Journal of Recent Advances and Research, vol. 8, no. 2.

10. Singh, a, Kanaujia, A, & Singh, VK 2022, 'Research on Sustainable Development Goals: How has the Indian Scientific Community Responded?' Journal of Scientific & Industrial Research, vol. 81, pp. 1147-1161

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Micro-scale Agriculture with Coir and itsEcological and Economical Gains.

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ABSTRACT — The Coir is the resource that is produced from the husk of coconuts. Coir is the waste extracted from coconut that can be used further for making various kinds of products. Coconut Pith can be used in farming activities and gardening activities and also in nurseries & landscape projects This coir is extracted from the husk i.e. the inner shell of coconut. The basic aim of this research is to study about the coir how the coir is produced, how they are processed and how they can be used in agriculture as a replacement for soil and chemical fertilizers, & the process of making coir-related products. Normally the coconut fibers are categorized according to the maturity of the coconut. Coir fibers are categorized into two types brown (mature) and white (immature). Characteristics of coir make them special in that they are damage resistant to saltwater, Strong, Water resistant & retaining capacity, and more. Coir, Coconut Pith & Coco coir peat has water holding capacity, properties of insect repletion, quick and easy to dry or wet, and saving fertilizer because of non-leaching makes it a very good substitute for soil. It prevents & keeps plant and their roots from drying out due to less water. Processing coconut fiber, peat, and its products is a time-consuming process. It starts with harvesting, husking (separation of husk from coconut), retting, defibring, & next procedure change according to the product which is going to be made. The coir is a very useful & needy industry that can replace plastics which is very important for today's generation. But need some more study and improvement. They have some negative points but can change the world to pollution-free.

Keywords- Coir, Retting, Husking, Peat, Pith.

INTRODUCTION

Coconut (Cocos nucifera) plays a significant role in India economically and culturally, known locally as "Kalpavriksha" meaning the divine fruitful tree. (Vikaspedia) The states of Kerala, Karnataka, and Tamil Nadu lead coconut cultivation with wide-ranging utility from leaves to roots. (Coconut Cultivation States, Vikaspedia,) Coir refers to the fibrous husk material between the hard interior shell and outer coat. Brown coir originates from fully ripened nut husks, characterized by high tensile strength, abrasion resistance, and durability, used in products like floor mats and brushes. White coir comes from unripened husk fibers, featuring a smoother texture more suited for making fine products like string,rope, and nets.(https://coirboard.gov.in)

Additionally, coir dust or pith constitutes the non-fibrous spongy residue after fiber extraction. Composted coir pith can enhance soil properties by improving texture, aeration, moisture retention, fertility, and supporting native microbial populations. With the presence of key nutrients like potassium and phosphorus, balanced fertilizer adjustments for nitrogen limitations can create an optimal plant growth medium. (Vikaspedia)

Such properties lend well to decentralized small-scale farming systems, like home gardening with the reuse of local organic waste. By requiring less virgin soil, chemical inputs, and irrigation water while improving yields and nutrition of produce, coir-based micro farming reflects principles of appropriate technology, circular economy, and sustainable living. (Vikaspedia)

OBJECTIVES

- To analyze the potential of coir pith as a sustainable growing medium for micro-scale agriculture systems like terrace gardening
- To quantify the effects of coir on soil health and productivity indicators like structure, nutrient content, and moisture retention for vegetable cultivation
- To evaluate the economic feasibility and circular benefits of reusing locally available coconut cultivation waste as input material replacing standard media
- To provide practical guidelines to farmers on ideal preparation methods and appropriate fertilizer requirements when utilizing coir-based growing mediums

This study aims to assess the viability of employing coir, a lignocellulosic byproduct of coconut harvests, as a sustainable growing medium for small-scale gardening systems. Specific objectives are to test how amending soil with coir can enhance properties like texture, aeration, moisture retention, and fertility to evaluate impacts on plant health and productivity. The potential economic benefits of reutilizing locally available agricultural residues are analyzed to promote circular systems that minimize waste and new resourceconsumption. Optimized guidelines will be formulated around ideal coir preparation techniques and appropriate fertility management recommendations when switching from standard media to coir for home, terrace, and community gardeners. Overall the goal is to quantify the multidimensional performance across environmental conservation, social value, and economic saving dimensions for micro-farming with coir based on empirical data.

LITERATURE REVIEW

Akhila Rajan and Abraham (2008) highlight the growing environmental consciousness worldwide, which has led to a shift towards designing environmentally compatible materials. They emphasize the emerging importance of coir (lignocellulosic natural fiber) as an engineering material due to its high tensile strength and elongation properties. The authors provide an overview of coir fiber properties and traditional uses, noting that coir, as an eco-friendly fiber, has tremendous potential in India and globally for applications such as mattresses, fabrics, and other novel uses.

Noguera, Abad, and Puchades (2000) evaluated selected properties of coconut coir waste from 13 sources as a substitute for peat. They found that coir possessed high porosity and air content but lower water-holding capacity compared to peat. The pH ranged from slightly acidic to neutral, and salinity varied widely between sources. Nutrient levels were mostly low, especially nitrogen, but phosphorus and potassium levels were extremely high. Plant growth was similar between unleached and leached coir. The authors noted that coir's unique chemical properties might

necessitate crop-specific adjustments in fertilizer programs.

Praveenkumar and Vinayagamoorthi (2017) analyzed the production, export, and government support schemes for the Indian coir industry. They highlighted India's dominance in global coir exports, primarily to China, with increasing trade in coir geo-textiles and pith. As a biodegradable fiber, coir has advantages over synthetic materials for applications such as soil erosion control. The authors reviewed previous schemes for coir industry development and analyzed the challenges and advantages for Indian exported coir products.

REVIEW METHODOLOGY

Field research was conducted to observe the coir fiber production processes at small and large-scale industrial operations in Tirunelveli, Tamil Nadu, India. Three factories were visited: the large-scale Mani Fibres facility located on Thenkasi Road Ayikudy and two smaller-scale facilities - Arulmigu Kamakshi Fibres on Thenkasi Road Ayikudy and an anonymous factory in Muthukrishnaperi.

The key steps in the conventional coir fiber extraction process observed were:

1. **Harvesting:** Mature and immature coconuts are plucked or collected once fallen based onindustry requirements
2. **Husking:** Separating the husk fiber from the inner coconut manually or mechanically
3. **Retting:** Microbially decomposing the husk pulp naturally or chemically to loosen fibers.Performed through saltwater or freshwater retting methods.
4. **Defibering:** Crushing decomposed husks to separate the fibers and pith mechanically

RESULTS AND DISCUSSION

A comparative analysis of process attributes in the three small and large-scale factories visited revealed key differences as highlighted in Table 1.

Table 1. Comparative analysis of small-scale and large-scale coir fiber factories

Attribute	Small Scale Factory	Large Scale Factory
Raw Material	Lower input quantities	Larger input quantities/own coconut groves
Capital Investment	Lower	Higher
Land Required	Small efficient parcels	More land for machinery/processes
Energy Consumption	Lower	Higher
Productivity	Lower with less labour and equipment	Higher with more labour and equipment
Water for Retting	Lower quantities used	Larger quantities used

Retting Process	Salt and freshwater techniques	Salt and freshwater techniques
Machinery Requirements	Less machinery utilized	More machinery utilized
Pollutants	Waste piles emit air, land, and water pollutants	Waste piles and emissions from machinery emit air, land, and water pollutants

- The field observations reveal several key differences between the small and large-scale coir fiber production facilities in terms of inputs, processes, outputs, and environmental impacts.
- The small-scale operations require less capital investment to set up smaller decentralized units closer to coconut farms. This reduces transportation costs for raw material procurement. The smaller batches of husk inputs allow flexibility to cater to niche local markets. However, the production capacity is lower despite employing just as much labor per unit. The limiting factors are the lack of automation and centralization benefits.
- Conversely, larger factories have higher throughput from bulk equipment, consistent power for pieces of machinery, and the ability to meet large orders. However, this requires significant upfront investments, specialized maintenance skills, and managementoversight. If fiber prices dip or orders dry up, covering high fixed operating costs is challenging.
- An apparent tradeoff seems to be aggregated performance versus robustness to local risks. The numerous small units spread risks across individual farms and regions. Large single-point factories are more vulnerable to factors like strikes, fires, or supply chain glitches.
- On sustainability metrics, the small operations edge out with relatively lower energy and water footprints. Concentrated waste piles at large factories overwhelm local carrying capacities. However, newer factories incorporate eco-efficiency features like rainwater harvesting and waste product utilization. Ultimately adding pollution control systems across all factories big or small is vital.
- In conclusion, policy initiatives to incentivize renewable energy adoption, support small farmer livelihoods, modernization grants, and sustainable safety net funds can promote balanced growth. The merits of both decentralized small-batch and centralized large-scale production models need recognition in development plans for the coir industry.

CONCLUSION

- The field observations of small and large-scale coir factories in Tirunelveli, Tamil Nadu demonstrate the significant role this industry plays in the rural economy of coconut-producing southern Indian states. Numerous decentralized small-scale units with lower capital requirements and environmental impacts cater to local needs. Meanwhile, large centralized factories drive export-oriented growth through scale efficiencies and higher

automation.

- Tradeoffs exist between robustness and productivity across models. Small operations spread market risks but lose out on mechanization gains from specialization. Large factories overcome limitations in batch size, power access and consistency to supply mass market orders yet concentrate waste streams. Government schemes aimed at modernization, skill development, sustainable financing, and renewed R&D can mitigate issues faced in both paradigms.
- The true ecological and economic gains lie in utilizing coir – an undervalued lignocellulosic waste fiber – for emerging applications like micro-scale agriculture. With high porosity, moisture retention, and favourable pH, often exceeding the benefits of standard peat-based mediums, coir offers a renewable substitute. Closed-loop reuse of locally produced waste biomass reduces import reliance and rewards circular outcomes. More field testing is recommended to optimize growing conditions across crops and geographies.
- In conclusion, leveraging coir for decentralized smallholder farms and nurseries supports rural livelihoods along with food and nutrition security goals. With thoughtful policy interventions addressing barriers like high upfront costs of specialized machinery and lackof access to credit, micro-scale agriculture with coir can deliver social, economic, and environmental dividends.

Suggestions

- Encouragement of kitchen and terrace gardening using coir peat can promote chemical-free food production. However, the coir industry faces challenges like modernization needs, raw material shortages, lack of skilled labor, financial constraints, production and marketing issues, and infrastructure limitations.
- The Coir Board should provide guidance on ideal factory locations, and water use limits for retting, and enforce employee safety norms. Addressing waste management through strict action is vital to minimize pollution from the retting processes.
- As small coir units face labor and financing issues hampering productivity, subsidized credit lines and incentives to manufacture value-added products like mats and rugs can improve profitability and wages to attract workers.
- Government schemes including SFURTI, Coir Udyami Yojana, market promotion programs, production infrastructure development, skill programs, and research initiatives can also boost the growth of small-scale coir enterprises.
- While positive impacts like employment generation are there, negative externalities such as retting pollution and unhealthy working conditions need mitigation. Replacing plastics with eco-friendly coir products is also advantageous. Further research and development are still needed for the industry to achieve sustainability across economic prosperity, social welfare, and environmental health dimensions. Robust policy support can enable the coir sector to transform these challenges into opportunities.

REFERENCES

1. Obeng, G.Y., Amoah, D.Y., Opoku, R., Sekyere, C.K.K., Adjei, E.A. and Mensah, E., (2020). Coconut Wastes ss Bioresource For Sustainable Energy: Quantifying Wastes, Calorific Values And Emissions In Ghana. MDPI.
2. Noguera, P., Abad, M., Noguera, V., Puchades, R. and Maquieira, A., (2000). COCONUT Coir Waste, A New and Viable Ecologically-Friendly Peat Substitute. In: XXV International Horticultural Congress, Part 7: Quality Of Horticultural Products. Brussels, Belgium.
3. Praveenkumar, K. and Vinayagamoorthi G., (2017). A Study on Export Performance of Coir Industry In India. Shanlax International Journal Of Commerce.
4. Rajan A. and Abraham, T.E., (2008). Coir Fiber–Process and Opportunities Part 1. Journal Of Natural Fibers.
5. Composted coir dust contains all plant nutrient elements and coir pith compost application increased the soil's native microflora because of the addition of humus materials. [Online]. Available at: https://vikaspedia.in/agriculture/crops/oilseeds-and-cash-crops-1/coconut-development-board
6. Coconut Cultivation States, The states of Kerala, Karnataka, and Tamil Nadu lead coconut cultivation with wide-ranging utility from leaves to roots. [Online]. Available at: https://vikaspedia.in/agriculture/crops/oilseeds-and-cash-crops-1/coconut-development-board

7. **Website links of Governments for more Details:**
8. http://coirboard.gov.in
9. https://msme.gov.in/coir-board
10. http://coirservices.gov.in

Institutional Framework in Developing Social Entrepreneurship with reference to BRICS Countries

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Abstract:
According to a recent study on social entrepreneurship in developing nations, fixing societal issues requires the involvement of social entrepreneurs. The paper examines how social entrepreneurship in the BRICS countries is impacted by the institutional framework. According to the author, social entrepreneurship thrives in emerging economies and its growth is highly influenced by the institutional framework. The institutional structure might provide legal protections for specific rights. Networks and organizations that encourage social entrepreneurship frequently take part in policy advocacy to modify the rules and regulations to do so. The institutional framework can assist with this advocacy work. Ethical and Social Standards: By developing certification and accreditation procedures to boost credibility and trust, organizations can encourage social companies to adhere to ethical and social standards. In conclusion, the institutional framework serves a variety of purposes.

Keywords: Social Entrepreneurship, Institutional Framework, BRICS

1.0 Objectives:

- To understand the institutional framework that constitutes social entrepreneurship
- To understand the BRICS's institutional framework for social entrepreneurship

1.1 Introduction

1.2 Social Entrepreneurship:

Social Entrepreneurship as a field of research is comparatively young. Recently, everyone has embraced the notion that an entrepreneur can manage a business for reasons other than purely financial gain. Several research papers and publications discuss the subject, but a more thorough study in the field is still needed to make a meaningful contribution to academia.

Robinson defines social entrepreneurship as a process that includes: the identification of a specific social problem and a specific solution to address it; the evaluation of the social impact, the business model, and the sustainability of the venture; and the creation of a social mission-oriented for-profit or a business-oriented nonprofit entity that pursues the double (or triple) bottom line (Jeffrey Robinson Navigating Social and Institutional Barriers to Markets: How Social Entrepreneurs Identify and Evaluate Opportunities)

Social entrepreneurship defines organizations or initiatives that, by producing and/or transacting goods or services, seek new solutions to persistent social problems, thus generating high social value. (Social Entrepreneurship Conceptual Approaches Alcides Almeida Monteiro 1,* , José Carlos Sánchez-García 2 , Brizeida Raquel Hernández-Sánchez 2 and Giuseppina Maria Cardella)

The social entrepreneur is a mission-driven individual who uses a set of entrepreneurial behaviours to deliver a social value to the less privileged, all through an entrepreneurially oriented entity that is financially independent, self-sufficient, or sustainable (Social Entrepreneurship: Definition and Boundaries Samer Abu-Saifan)

We can infer from several definitions that social entrepreneurs deal with social issues. To solve these issues, they are self-motivated. Through their business, they serve as a change-maker and provide social value. Some social entrepreneurs pursue social and business goals, while others focus solely on nonprofit organizations. Emerging fields of study are distinguished by the lack of distinct theoretical boundaries and the requirement to combine ideas from many disciplines.

Similarly, a lot of theory for social entrepreneurship is built upon the business entrepreneurship concept and hence a lot of experts are building theory and literature to build relevant concepts of the subject. Similarly, a lot of social entrepreneurship theory is based on the idea of business entrepreneurship, therefore many experts are developing literature and theory to develop pertinent concepts of the subject.

Social entrepreneurship is an innovative, social value-creating activity that can occur within or across the nonprofit, business, and public sectors. (Austin, Stevenson, and Wei-Skillern, 2006)

Social entrepreneurship is prospering in emerging economies. These economies are diverse in every way, including culture, context, and history. The paper attempts to identify the differences in institutional frameworks for the growth of social entrepreneurship in emerging economies that are part of BRICS. It examines how the institutional frameworks of different nations vary. Additionally, it seeks to determine how each nation's institutional setting and social entrepreneurship interact.

1.3 Institutional Framework for Social Entrepreneurship:

According to North (1991), institutions are the regulative, normative, and cognitive frameworks that control and restrain human activities to give social behaviour stability and purpose. According to North (1991) and Doh and Teegen (2002), the institutional framework can be categorized generally into formal and informal categories. Formal comprises the rules and laws that legislators and citizens enact, as well as formal agreements. Conversely, informal embraces culture, traditions, and customs. Baumol 1990 says institution defines the rules of the game that shape the society's economic behavior. The effect of institutions varies based on poverty level, local development, unemployment, etc. Today Governments are unable to act alone in solving social issues and providing social services to the public. Therefore, social entrepreneurs play a crucial role. The institutional framework will benefit from government coordination with social entrepreneurs, which will result in overall balanced local and regional development. Any nation's government can make a difference in three key ways: establishing and enforcing the right legal framework for the operation of nonprofit organizations, recognizing and partnering with successful social entrepreneurs, and expanding the ecosystem for social entrepreneurship. The educational institutions and universities in the nation are also included in the institutional framework because they play a crucial role in creating pathways for development through their courses and degree programs, as well as in creating a culture of social entrepreneurship and developing skills. They can assist individuals in acquiring important skills necessary for entrepreneurship.

Institutions and contemporary entrepreneurial philosophy are intertwined. Institutions are "humanly devised constraints that structure political, economic, and social interactions," according to D. North (1991). Institutions are fundamental components of social structure that serve as strict rules and restraints on behavior. Institutions are unquestioned norms that either serve as implicit regulations for people's behavior or are explicitly and consciously understood by people. The official rules of institutions include the constitution, laws, economic regulations, property rights, and contracts, as well as informal constraints like values, norms, prohibitions, practices, traditions, and codes of conduct.

Let's find out what the institution implies and what its boundaries are. A system of laws, regulations, practices, and stakeholders, each with their own roles and customs, can be referred to as this, and together they have the power to affect socioeconomic activity and behavior.

The institutional framework is made up of various participants who each add to the ecosystem in their own unique ways. Government bodies can be further divided (horizontally and vertically) into several umbrella groups like legal and regulatory environments that make laws, separate Acts, specific programs, and policies. We might cite the European Commission as an example, which has consistently worked to develop social companies while acknowledging their value to the economy. Infrastructure development, a fundamental prerequisite for the growth of social entrepreneurship, is a crucial responsibility of the government.

Banking and financial institutions are the next elements in the frame. The robustness of the banking and financial framework is essential to the entrepreneurial ecosystem because capital is the lifeblood of any endeavour. Social enterprises are innovative businesses that use entrepreneurship to address social challenges. They encompass nonprofit and for-profit endeavours, and their financial and social benefits are combined to produce their returns. They exist in various forms, but they are constantly faced with the same fundamental dilemma: Can they bring in enough money and draw in enough investment to fulfill their expenses and expand their operations? One of the main challenges social entrepreneurs confront is a lack of funding opportunities. An essential step toward attracting investors in the form of stock investors, banks, bond funds, venture capitalists, and others is to increase openness and accuracy in measuring the results of these social enterprises. Thus, the emergence of social businesses and their chances of success will rise as the diversity of investors in an entrepreneurial ecosystem rises.

The development of social ventures and their chances of success will rise if an entrepreneurial ecosystem includes support groups that are social entrepreneurship-focused. According to Peters, Rice, and Sundararajan (2004) and Isenberg (2011), support organizations like incubators and accelerators offer early-stage entrepreneurs' access to professionals like legal, accounting, and technical advisers as well as office space, mentorship, exposure to capital providers, and a community of other early-stage entrepreneurs. Like other businesses, social entrepreneurs can take advantage of the tools and networks offered by assistance groups. However, by providing courses and programs expressly geared toward the development of social ventures, these organizations can also promote social entrepreneurship (Casanovas and Bruno, 2013). The academic system and universities play a significant part in this as they help to develop a competent workforce, which is necessary to support social initiatives.

The socially supportive cultural norms, also known as weak ties in terms of social capital and sociocultural factors, are a significant factor that contributes to the institutional framework. An entrepreneurial ecosystem's culture is comprised of the members' common values, traditions, and areas of competence (Doney, Cannon, & Mullen, 1998). Culture is made up of societal standards, some of which include the acceptance of risk, failure, and experimentation (Isenberg, 2011). If an entrepreneurial environment encourages a charitable perspective, social initiatives will be more likely to be developed and successful.

1.4 Scope of the study:

The research that is currently available on social entrepreneurship emphasizes its importance and contribution to the long-term growth of nations. In many industrialized countries, notably the European Union, social entrepreneurship has been growing and developing for some time. These countries have strong institutional frameworks in place to support this growth. When it comes to development, emerging nations have many obstacles. These economies do, however, offer a

tremendous amount of growth potential. Top rising economies with growth and development potential are represented by BRICS. These nations share similar problems with regard to population, infrastructure, education, employment, and so forth, and still have diversity in terms of context, history, and culture. Understanding the significance and growth of the social entrepreneurship ecosystem requires using these as models for research.

1.5 Understanding BRICS:

Brazil, Russia, India, China, and South Africa make up the BRICS alliance, which was created in 2010 when South Africa joined the BRIC group. The term "BRIC" or "the BRICs" was first used in 2001 by economist Jim O'Neill of Goldman Sachs to refer to an association of rapidly developing economies that he predicted will jointly dominate the global economy by 2050.

The BRICS countries account for 42% of the world's population and around 27% of the world's land area. In terms of population, area, and GDP (PPP), Brazil, Russia, India, and China are among the ten largest nations in the world; the latter three are regarded as existing superpowers or prospective future superpowers. All five countries are G20 members, and their nominal GDPs total US$28 trillion (or nearly 27% of the world's total). The BRICS Business Council may hold discussions and launch projects pertaining to social entrepreneurship and sustainable development within the BRICS framework. The UNDP frequently works with the BRICS nations to foster social entrepreneurship and sustainable development initiatives. Several NGOs in BRICS nations actively support and encourage social entrepreneurship through efforts for funding, advocacy, and training.

1.6 Institutional Framework for Social Entrepreneurship in BRICS

The institutional framework for social entrepreneurship in BRICS countries (Brazil, Russia, India, China, and South Africa).

BRAZIL	
Government Initiatives	The Brazilian government, at both federal and state levels, had started to recognize the importance of social entrepreneurship. Various policies and programs aimed at promoting social enterprises and fostering social innovation were being developed. Government agencies provided grants, subsidies, and financial support to social entrepreneurs and organizations. Programs like the National Program for Support to Social Incubators (Proninc) are aimed at nurturing social startups. Ministry of Economy (Ministério da Economia), National Bank for Economic and Social Development (Banco Nacional de Desenvolvimento Econômico e Social - BNDES), SEBRAE (Serviço Brasileiro de Apoio às Micro e Pequenas Empresas), Ministry of Social Development and Fight Against Hunger (Ministério do Desenvolvimento Social e Combate à Fome), Local Municipal and State Governments
Legal Structure	Social enterprises in Brazil could take different legal forms, such as Non-Governmental Organizations (NGOs), non-profit associations, or even for-profit companies with a social mission. The choice of legal structure often depended on the specific goals and activities of the social enterprise. In recent years, there has been a growing movement to create a specific legal framework for "Empresas de Impacto Social" (Social Impact Businesses) to provide legal recognition and support for social enterprises with a clear social mission.

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Support Organizations	Several incubators and accelerators specializing in social entrepreneurship emerged to provide training, mentorship, and resources to social entrepreneurs. Artemisia, Impact Hub São Paulo, Cubo Itaú, Rede Folha, SEED - Startups and Entrepreneurship Ecosystem Development, InovaBra Habitat, Aceleradora Gênesis (PUC-Rio) Universities: FGV - Fundação Getúlio Vargas, . Unicamp - University of Campinas, USP - University of São Paulo, Insper, UFRJ - Federal University of Rio de Janeiro, UFMG - Federal University of Minas Gerais. These organizations often provide a range of resources such as mentorship, funding, networking opportunities, and workspace to support social entrepreneurs. Additionally, many universities in Brazil have entrepreneurship and innovation programs that collaborate with startups and social enterprises
Investment and Funding	Impact investment funds and angel investors interested in social enterprises were becoming more active in Brazil. They provided funding to social entrepreneurs while expecting a measurable social or environmental return on investment. Crowdfunding platforms, including those dedicated to social projects, were gaining popularity as a source of capital for social entrepreneurs. Few examples include : Artemísia, Brazilian Development Bank (BNDES), Instituto Sabin, Impact Hub São Paulo, Fundação Banco do Brasil (Bank of Brazil Foundation), Brazilian Micro and Small Business Support Service (SEBRAE), Ashoka Brazil, Instituto Ekloos, Movimento Choice, GIFE (Group of Institutes, Foundations, and Enterprises).
Socio-Cultural Factors	Social entrepreneurship replicates the unequal structure of Brazilian society. Class divisions are present in nearly every element of society. Women in Brazil may start enterprises out of necessity in order to balance job and family obligations. Brazilians have a slow negotiation style and may not always follow through on new ventures, according to business culture.

RUSSIA	
Government Initiatives	The Russian government encourages social entrepreneurship through a range of legislative, social, educational, and advisory initiatives. Russia passed a law in 2019 to promote social businesses financially and in other ways. The registration of small and medium-sized firms must include information on the status of social entrepreneurs, according to the law. The Strategy for the Development of Small and Medium Businesses was also unveiled by the federal government in 2016. Through the Centre of Innovation in the Social Sphere (CISS), regional governments aid social entrepreneurs. In order to finance businesses, the Russian government also founded the Russian Venture Company (RVC) in 2006. Another

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	group that aids in the advancement of research and SMEs is the Bortnik Foundation.
Legal Structure	The need for a draft law on social entrepreneurship was confirmed in November 2018 by Dmitry Sazonov, Deputy Chairman of the State Duma Committee on Economic Policy, Industry, Innovative Development, and Entrepreneurship. He added that the Russian Federation's government would focus efforts on developing this field. He thinks that by 2024, there should be a 50% increase in the percentage of non-governmental groups in the market for social services. In 2019, a social entrepreneurship law was enacted in Russia. The law gives social businesses financial and other help. According to the law, social entrepreneurship is an activity carried out by small and medium-sized firms.
Support Organizations	The first to draw attention to this area of economic activity was the great Russian corporations, which were involved in creating the social and entrepreneurial infrastructure as part of their own charity endeavors and corporate social responsibility. Such pillar businesses as Lukoil, Rusal, SUEK, Severstal, Metalloinvest, and others have social entrepreneurship assistance initiatives for 2017. Rusal, a business owned by Oleg Deripaska, pays close attention to social issues and incorporates them into its development plans. To oversee Rusal's social initiatives, the Center for Social Programs was established in 2004 The Agency for Strategic Initiatives to Promote New Projects (Agency for Strategic Initiatives, ASI), an independent non-profit, was founded by the Russian government in 2011. Also actively advancing the concepts and tenets of social entrepreneurship is the Russian Union of Industrialists and Entrepreneurs (RUIE). The RUIE features a Department of Social Entrepreneurship, Sustainable Development, and Corporate Responsibility. Russian players in the infrastructure for supporting social entrepreneurship came together in June 2022. The Coalition was started by the Agency for Strategic Initiatives' Social Projects Support Fund. The coalition is made up of 15 organizations
Investment and Funding	Although social entrepreneurship is institutionalized in Russia, money is a significant obstacle. A few banks, such as Vnesheconom bank, don't offer any unique products for social business. On the other hand, banks in Russia and other countries are progressively integrating environmental, social, and governance (ESG) aspects into their business strategies. Russian social entrepreneurs favor receiving grants or funding from impact or social investors. A 2021 poll found that 76% of social entrepreneurs in Russia are looking for investments totalling more than €50,000.Some Russian corporations, like RUSAL, which coordinates its social investment plan through a corporate Social Policy Committee, have social investment strategies. The biggest coal firm in Russia, SUEK, implements its social activities through a fund. The More Than a Purchase! project was started in 2014 by the Lukoil company and the Our Future Foundation to promote the goods of Russian social entrepreneurs.

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Socio-Cultural Factors	Russia has a low popularity for social enterprise. Less than 1% of Russian businesspeople will be engaged in social enterprise by 2020. 0.36% of Russia's GDP in 2015 came from social entrepreneurs. An authoritarian mentality has influenced Russian culture. Russian parents typically put their kids first and make big decisions for them without consulting them influencing their choices for social entrepreneurship.

INDIA	
Government Initiatives	The Indian government's initiatives, including the Startup India Program, ASPIRE—A Scheme for Promotion of Innovation, Rural Industries, and Entrepreneurship, Atal Innovation Mission (AIM), NewGen Innovation and Entrepreneurship Development Center (NewGen IEDC), and the Venture Capital Assistance Scheme (VCA), among others, have changed the game, and other nations should not be afraid to recognize and replicate these and other similar programs and policies in order to build workable societies. Ministry of Skill Development and Entrepreneurship, NITI Aayog, Rural Development Programs, Social Impact Incubators,
Legal Structure	Social enterprises in India can register under the following acts: Indian Trusts Act (1882) Section 25 of Companies Act (1956) State Society registration Societies Registration Act 1860 Section 8 of companies act, 2013 Special Licensing If an organization is located within a state, it may be registered under the Societies Registration Act of 1860, the Indian Trust Act of 1992, or Section 8 of the Companies Act of 2013
Support Organizations	The most recent season of Shark Tank had participation from and investment for a number of for-profits and even a few not-for-profit social entrepreneurs. The growth of fellowships and transition programs for newcomers and seasoned professionals has made the once-difficult shift to the social entrepreneurship sector simpler. The annual Social Entrepreneurship Summit is held at the Bala Vikasa Center for Social and Responsible Business. Universities and higher education institutions have collaborated closely to do scholarly research that will benefit the community. Other organizations that support entrepreneurship in India include: National Alliance of Young Entrepreneurs (NAYE), World Assembly of Small and Medium Entrepreneurs (WASME), Xavier Institute for Social Studies (XISS), SEWA of Ahmedabad, 'Y' Self-Employment of Calcutta, AWAKE (Association of Women Entrepreneurs of Karnataka). AWAKE (Association of Women Entrepreneurs of Karnataka) The World Economic Forum's sister organization, the Schwab Foundation for Social Entrepreneurship, and the Jubilant Bhartia Foundation have been promoting social entrepreneurship in India for 14 years

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Investment and Funding	In the past, only philanthropic investments could be made in social entrepreneurship. Impact investing, which involves venture capitalists interested in both business and impact criteria, has developed into a sizable industry today and has drawn the attention of traditional investors. In reality, impact firms in India mobilized over $6.8 billion in India in 2021, with climate tech at the lead, according to the Impact Investors Council. Through direct investments or corporate social responsibility (CSR) programs, many businesses are funding social entrepreneurs. In addition, social entrepreneurs in India are receiving funding from a number of prominent grants and awards. Among the prominent awards are The Elevate Prize, Infosys Prize, The/Nudge Prize, and Earthshot Prize, the latter of which was established by The Royal Foundation and Prince William to recognize and honor solutions to the world's most pressing environmental issues that are evidence-based.
Socio-Cultural Factors	In India, support for social entrepreneurship is growing. Some research indicates that young people and college students have a favourable attitude toward social entrepreneurship. According to them, social entrepreneurship may benefit society. They consider social entrepreneurship to be beneficial to society. However, some Indians mistakenly think that social entrepreneurship is the same as social labor and are unaware of the business objectives behind such endeavors.

CHINA	
Government Initiatives	China has a number of policies that encourage social entrepreneurship, such as innovative regulations and regulations in the fields of aged care and rural revival. Pro-growth regulations: Measures that encourage taxation, finance, and intellectual property rights. New steps for relief: Policies that reduce taxes and take other financial action to aid small enterprises. A government-organized non-governmental organization (GONGO) called the Foundation of Poverty Alleviation (CFPA) operates in China and creates viable social enterprises in the microfinance industry. The policies of China have benefited social entrepreneurship. In China in 2019, there were 1684 social enterprises. Key government bodies involved in this effort include: Ministry of Civil Affairs (MOCA), All China Youth Federation (ACYF), Local Governments.
Legal Framework	At the national level, the Chinese government has not yet developed any explicit legislation or policies for social companies. However, the B Corp certification system or the local certification system is used in China to identify social firms. Local governments in China have taken institutional steps to promote the growth of social entrepreneurship through legislation or policy platforms. For instance, in September 2011, the Standing Committee of the People's Congress of the Ningxia Hui Autonomous Region issued Regulations on the Promotion of Charity in the Ningxia Hui Autonomous Region, encouraging the development of "social charitable enterprises," which is regarded as the first local law on SE in China.

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Support Organizations	Five Chinese organizations—Peking University, China Global Philanthropy Institute, Social Enterprise Research Center, Narada Foundation, and China Charity Fair—launched the first unofficial Social Enterprise (SE) Certification in 2015 at the event. Four requirements had to be met in order to qualify for SE certification. (Ye, 2016) A sustainable revenue stream must include at least 50% of income from sales of goods and services, including government purchases. It must also have the following characteristics: (a) clearly defined social goals in its social mission; (b) registered as a corporation or charity for at least one year; (c) a clear governance mechanism with at least three full-time employees; and (d) a sustainable governance mechanism. The SE certification was introduced in 2015, and since then, 1,351 SEs have applied and 234 SEs have received certification. The ratios of certifications to applications showed a clear growing trend from 2015 to 2018: 7/67 in 2015, 16/154 in 2016, 106/510 in 2017, and 109/620 in 2018 (Xia, 2019).
Investment and Funding	China has seen the emergence of experimental social (impact) investing cases in recent years, offering SEs a fresh source of funding. In China, private foundations—often corporate foundations that raise money from private businesses or entrepreneurs—are emerging as the key players in the impact investing market. The Narada Foundation, China Social Entrepreneur Foundation, Leping Social Entrepreneur Foundation, and Live Foundation are just a few of the corporate foundations that are actively helping social entrepreneurs in China.60 International investment institutions are also using the impact investing strategy to fund SEs in China at the same time. a promising direction for the future growth of SEs in China. Social impact investing has spurred social entrepreneurship in China. Funding sources for social entrepreneurs in China include: private philanthropies, grants and contributions from organizations, businesses, governments, or people. The Beijing Municipal Government Additional benefits that social companies that are approved by the Beijing Municipal Government.
Socio-Cultural Factors	In China, behavioral attitudes have less of an impact on socially entrepreneurial intents than do subjective norms. Chinese business people have the view that social capital is crucial for the growth of start-ups, luring investors, and gaining a greater market share. They also think that social entrepreneurship might improve local communities' social cohesion and help to tackle societal issues. Social entrepreneurship has the potential to generate jobs and solve gaps in social services. Nearly 25% of China's adult population, according to the Global Entrepreneurship Monitor, is an entrepreneur. In China, business owners are typically 32 years old and devote over 45 hours each week to their enterprises. A "quasi-social enterprise" is how some Chinese academics refer to social welfare enterprises or cooperatives. Others contend that "social startup" or "startup for public good" should be used instead to minimize ambiguity and emphasize the entrepreneurial qualities of social companies.

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SOUTH AFRICA	
Government Initiatives	Department of Small Business Development (DSBD): The DSBD has various programs and initiatives aimed at supporting small and medium-sized enterprises (SMEs), including social enterprises. National Development Agency (NDA): NDA provides funding and support to organizations and initiatives that focus on poverty reduction and community development, including social enterprises.
Legal Framework	There is no specific legal framework for social enterprises in South Africa. The establishment of social companies is nevertheless made possible by several policy measures. The process of identifying social issues and using entrepreneurship to solve them is known as social entrepreneurship. To address societal concerns, social entrepreneurs start businesses. Social companies in South Africa face challenges operating and growing effectively due to the absence of a legal framework. A clear legal framework might increase the appeal of funding for social entrepreneurs. In South Africa, the majority of social companies are modestly sized and nonprofit. The current frameworks permit a great deal of flexibility.
Support Organizations	Non-Governmental Organizations (NGOs): Social Enterprise Academy South Africa: This organization provides training, capacity-building, and networking opportunities for social entrepreneurs in South Africa. Ashoka South Africa: Ashoka is a global organization that supports social entrepreneurs. They have a presence in South Africa and work with social innovators to scale their impact. SEED South Africa: SEED supports eco-inclusive entrepreneurship in South Africa and offers various programs and support for social and environmental enterprises. Business Incubators and Accelerators: Awethu Project: Awethu Project is a social impact investor and business incubator that supports early-stage entrepreneurs, including those with social missions. Allan Gray Orbis Foundation: While primarily focused on education and entrepreneurship, this foundation supports young social entrepreneurs through their programs. Academic Institutions: Many universities and business schools in South Africa offer courses and programs related to social entrepreneurship and impact investing. These institutions often provide research and training opportunities for aspiring social entrepreneurs.
Investment and Funding	There are various impact investment funds and organizations in South Africa that provide funding to social enterprises. Some of these include the Bertha Centre for Social Innovation and Entrepreneurship and the UCT Graduate School of Business's Bertha Centre Fund.

	SAB Foundation: This organization provides support to social entrepreneurs through its various programs and initiatives, including the Social Innovation and Disability Empowerment Awards. Policy Advocacy Groups: Organizations like the South African Social Entrepreneurship Network (SASEN) work to create a conducive policy environment for social entrepreneurs and promote the sector's growth.
Socio-Cultural Factors	The role of social entrepreneurship in South Africa's economy is growing. Social entrepreneurs are in a good position to address socioeconomic issues in underserved areas. They are able to launch companies that alter the world for the better. Visser (2011) asserts that both the government and society have a limited knowledge of social entrepreneurship. The society views entrepreneurship as countercultural since it lacks a steady source of income and a defined career path.

1.7 Similarities and Differences in Institutional Framework among BRICS Nations:
The need to foster social entrepreneurship has almost universally been acknowledged by the BRICS countries as a means of addressing the serious problems and difficulties that their economies must deal with. Not all of them, however, are aware of the part the institutional framework plays in developing the social entrepreneurship ecosystem. Every BRICS country's progress toward developing this framework has a different rate. For instance, Brazil needs to address the unequal social structure that generates two distinct ecosystems, one for the disadvantaged and the other for the wealthy, in terms of access to human, social, psychological, and financial capital. The building of a balanced ecosystem for social entrepreneurs is supported by all of the BRICS countries; the difference lies in the speed at which it is being done. In terms of all criteria for the institutional structure, India and China are strong and in the lead. To advance at a given speed, South Africa must improve all of its factors. Additionally, it is important to use educational institutions and colleges for this purpose. To draw more capital for social initiatives, the legal framework must be clear and definite. Understanding the significance of social enterprises will be made easier by the social consciousness in nations like Russia.
1.8 Challenges and future need for improvement in the Institutional Framework of BRICS:
The strength of institutional elements for the ecosystem of social entrepreneurship varies across the board among the BRICS countries. Every country should research the significance of all contributing elements, determine where it falls short, and make improvements. It is possible to research and put into practice the optimal models for these that have been successful in other developed nations. Under BRICS, a special agenda for developing institutional ecosystems can be undertaken, and the group can work together to meet the specified standards.

1.9 Conclusion:
According to the study, every BRICS country's longterm progress depends on the development o f social entrepreneurship.It will promote inclusive growth and deal with the major issues these ec onomies are facing.These countries share a variety of issues in relation to their populations, healt hcare, education, unemployment, etc. since they are developing or emerging economies. Fostering social innovation and social entrepreneurship can help to overcome these issues. Institutional frameworks for social entrepreneurship differ among these BRICS countries. Better

institutional frameworks for social entrepreneurship are being adopted and implemented in South Africa and Brazil at the slowest rate, with India being one of the fastest. The issue with Russia is a lack of understanding and support for sociocultural aspects. It is commendable how quickly India has grasped the importance of creating an atmosphere that fosters social entrepreneurship. The ecosystem and economy of China make social entrepreneurship too feasible. In China, social entrepreneurship is actively encouraged by and supported by all essentialinstitutional elements.

1.10 Future Scope for Research

There is very little research and subsequent literature on all the components comprising the institutional social entrepreneurship framework. Very few definitions bring clarity to the institutional framework for social entrepreneurship. Institutional framework and its scope vary according to the countries. It is important to find out the relationship of all these institutional factors on social entrepreneurial growth. Additionally, research must be done to determine what function each of these components plays and if there are any additional factors influencing the ecosystem for social entrepreneurial growth.

References:

1. Kerlin, J.A. (2017) Shaping social enterprise: Understanding Institutional Context and Influence. Emerald Group Publishing.
2. Kerlin's macro-institutional framework for understanding Social Enterprise Country models: A Critique and Expansion (2015).
3. Ács, Z.J., Desai, S. and Hessels, J. (2008b) 'Entrepreneurship, economic development and institutions,' Small Business Economics, 31(3), pp. 219–234. https://doi.org/10.1007/s11187-008-9135-9.
4. Agrawal, A. and Hockerts, K. (2013) 'Institutional Theory as a framework for practitioners of social entrepreneurship,' in CSR, sustainability, ethics & governance, pp. 119–129. https://doi.org/10.1007/978-3-642-36540-9_11.
5. Agrawal, A. and Sahasranamam, S. (2016) 'Corporate social entrepreneurship in India,' South Asian Journal of Global Business Research, 5(2), pp. 214–233. https://doi.org/10.1108/sajgbr-12-2014-0098.
6. Bakhmatova, T. (2018) 'Social Entrepreneurship in russia: Institutionalization and Dynamics of Development', Baikal Research Journal, 9(2). doi:10.17150/2411-6262.2018.9(2).9.
7. Barki, E. et al. (2020) 'Support for social entrepreneurs from disadvantaged areas navigating crisis: Insights from Brazil,' Journal of Business Venturing Insights, 14, p. e00205. https://doi.org/10.1016/j.jbvi.2020.e00205.
8. Bulsara, H.P., Gandhi, S. and Chandwani, J. (2015) 'Social entrepreneurship in India: an exploratory study,' International Journal of Innovation, 3(1), pp. 07–16. https://doi.org/10.5585/iji.v3i1.20.
9. Chandra, Y., Teasdale, S. and Tjiptono, F. (2020) 'Social entrepreneurship research in the Greater China Region: a scoping review and new research framework,' Journal of Asian Public Policy, 14(2), pp. 152–181. https://doi.org/10.1080/17516234.2020.1802907 .
10. 'China's transition to a new phase of development' (2022) in ANU Press eBooks. https://doi.org/10.22459/ctnpd.2022.

11. Hazenberg, R. et al. (2016) 'The role of institutional and stakeholder networks in shaping social enterprise ecosystems in Europe,' Social Enterprise Journal, 12(3), pp. 302–321. https://doi.org/10.1108/sej-10-2016-0044.
12. Hojnik, B.B. (2020) 'Overview of social entrepreneurship development in Slovenia,' Transylvanian Review of Administrative Sciences, (60 E), pp. 5–21. https://doi.org/10.24193/tras.60e.1.
13. Iizuka, E.S., Varela, C.A. and Larroudé, E.R.A. (2015) 'SOCIAL BUSINESS DILEMMAS IN BRAZIL: REDE ASTACASE,' Rae-revista De Administracao De Empresas, 55(4), pp. 385–396. https://doi.org/10.1590/s0034-759020150403.
14. Lekhanya, L.M. (2015) 'The role of universities in promoting social entrepreneurship in South Africa,' Journal of Governance and Regulation, 4(3), pp. 67–71. https://doi.org/10.22495/jgr_v4_i3_p6.
15. Littlewood, D. and Holt, D. (2015) 'Social entrepreneurship in South Africa: Exploring the influence of environment,' Business & Society, 57(3), pp. 525–561. https://doi.org/10.1177/0007650315613293.
16. Mesure, H. (2008) 'Social Entrepreneurship20083Edited by Johanna Mair, Jeffrey Robinson and Kai Hockerts. Social Entrepreneurship. New York, NY: Palgrave Macmillan 2006. 256 pp. 433 words,' Society and Business Review, 3(2), pp. 175–176. https://doi.org/10.1108/17465680810880116.
17. Meyer, N. and Sroka, W. (2021) 'A theoretical analysis of social entrepreneurship: The case of Poland and South Africa,' Journal of Eastern European and Central Asian Research, 8(1), pp. 133–148. https://doi.org/10.15549/jeecar.v8i1.596.
18. Pacut, A. (2020) 'Drivers toward Social Entrepreneurs Engagement in Poland: An Institutional Approach,' Administrative Sciences, 10(1), p. 5. https://doi.org/10.3390/admsci10010005.
19. Polbitsyn, S. et al. (2018) 'Russian University students intentions towards social entrepreneurship,' Vestnik UrFU, 17(3), pp. 554–568. https://doi.org/10.15826/vestnik.2018.17.3.024.
20. Ramesh, S. (2018) 'Entrepreneurship in China and India,' Journal of the Knowledge Economy, 11(1), pp. 321–355. https://doi.org/10.1007/s13132-018-0544-y.
21. Schaltegger, S. and Wagner, M. (2011) 'Sustainable entrepreneurship and sustainability innovation: categories and interactions,' Business Strategy and the Environment, 20(4), pp. 222–237. https://doi.org/10.1002/bse.682.
22. Sengupta, S., Sahay, A. and Croce, F. (2017) 'Conceptualizing social entrepreneurship in the context of emerging economies: an integrative review of past research from BRIICS,' International Entrepreneurship and Management Journal, 14(4), pp. 771–803. https://doi.org/10.1007/s11365-017-0483-2.
23. Stephan, U., Uhlaner, L. and Stride, C. (2014) 'Institutions and social entrepreneurship: The role of institutional voids, institutional support, and institutional configurations,' Journal of International Business Studies, 46(3), pp. 308–331. https://doi.org/10.1057/jibs.2014.38.
24. Sud, M., VanSandt, C.V. and Baugous, A. (2008) 'Social entrepreneurship: the role of institutions,' Journal of Business Ethics, 85(S1), pp. 201–216. https://doi.org/10.1007/s10551-008-9939-1.

25. Umnov, V.A., Плюхина, A.A. and Матвеев, M.B. (2018) 'AN ANALYSIS IN THE SYSTEM OF STATE SUPPORT FOR SOCIAL ENTREPRENEURSHIP IN RUSSIA,' Вестник РГГУ. Серия: Экономика, Управление, Право [Preprint]. https://doi.org/10.28995/2073-6304-2018-3-77-89.
26. Van De Ven, H. (1993) 'The development of an infrastructure for entrepreneurship,' Journal of Business Venturing, 8(3), pp. 211–230. https://doi.org/10.1016/0883-9026(93)90028-4.
27. Zhao, M. and Mao, J. (2021) Social entrepreneurship: An Innovative Solution to Social Problems. Springer Nature.

Internet/Websites:

1. Gaur, M. (2023) 'BRICS Countries 2023: Full Form, Objective, Headquarters, Leaders And Purpose - PWOnlyIAS,' PWOnlyIAS, 27 July. https://pwonlyias.com/brics-countries/.
2. In search of Inclusive Social Entrepreneurship (SSIR) (no date). https://ssir.org/articles/entry/in_search_of_inclusive_social_entrepreneurship .
3. Kaushik, S. and Juneja, V. (2023) 'Inspiring social entrepreneurship for economic sustainability,' Hindustan Times, 29 June. https://www.hindustantimes.com/opinion/from-india-to-africa-inspiring-social-entrepreneurship-for-economic-sustainability-101688030736884.html
4. See how Brazil's social entrepreneurs are transforming lives (2022). https://www.weforum.org/agenda/2022/11/see-how-social-entrepreneurs-in-brazil-are-transforming-lives/ .