IRJEMS International Research Journal of Economics and Management Studies
Published by Eternal Scientific Publications
ISSN: 2583 – 5238 / Volume 2 Issue 4 October 2023 / Pg. No: 24-34
Paper Id: IRJEMS-V2I4P104, Doi: 10.56472/25835238/IRJEMS-V2I4P104

Conceptual Article

Charting the Uncharted: Prospective Advancements in Artificial Intelligence within the Banking Sector

[1]Abdul Khader Aneesh A, [2]Abdul Jaleel K A, [3]Abdul Rasheed K.M

[1] Assistant Professor, Department of Commerce, The Yenepoya Institute of Arts, Science, Commerce & Management, Yenepoya (Deemed to be University) Deralakatte, Mangalore, Karnataka, India.

[1]Research Scholar, PG Department of Commerce, Mangaluru University, Mangalore, Karnataka, India.

[2]Assistant Professor, Department of Management, The Yenepoya Institute of Arts Science Commerce and Management, Yenepoya (Deemed to be University), Deralakatte, Mangalore, Karnataka, India.

[3]Assistant Professor, Department of Humanities, The Yenepoya Institute of Arts Science Commerce and Management, Yenepoya (Deemed to be University), Deralakatte, Mangalore, Karnataka,

Received Date: 05 October 2023 Revised Date: 14 October 2023 Accepted Date: 16 October 2023 Published Date: 18 October 2023

Abstract: Purpose: *The rapid advancement of technology worldwide is being driven by Artificial Intelligence (AI). This study intends to assess how digitalisation has affected using Artificial Intelligence (AI) in banking to handle customer questions and complaints using completely automated or human-assisted methods. The ultimate goal of this study is to raise awareness and demonstrate the benefits of AI to banks.*

Methodology: *The qualitative research that formed the basis of this study used secondary data sources. To find and evaluate pertinent publications, a thorough search was done utilising databases like , Web of Science, MEDLINE, and Scopus. The study also relied on information obtained from various sources, including books, newspapers, and government statistics.*

Findings: *The study's findings state that AI technologies have the greatest potential for cost savings across various banks, particularly in front and middle-office operations. In an effort to prevent fraudulent payments and improve anti-money laundering and KYC regulations, banks are integrating AI into their middle office operations. Additionally, banks are utilising AI to improve client identification and verification, provide personalised insights and suggestions, enhance customer relationships through chatbots and voice assistants, and simulate human interactions.*

Practical Implication: *A thorough grasp of the many uses of AI in banking will be provided by this study. It will serve as a useful resource for banks and financial institutions to leverage AI for optimal results effectively.*

Keywords: *Banking, Artificial Intelligence (AI), SWOC analysis, Scam and Fraud Detection, Chatbots.*

I. INTRODUCTION

The rise of digital technology is changing businesses and how firms run. Every industry in today's technology-driven world is assessing and putting new value-creation strategies into practice [1]. The banking sector is going through considerable changes, the most noticeable of which is a stronger consumer focus. Financial organisations in the nation are benefiting from artificial intelligence, which can spot odd human behaviour, cut costs, and boost productivity [2]. In the banking industry, artificial intelligence makes banks more efficient, trustworthy, helpful, and understandable [3]. The digital era helps modern banks maintain their competitive edge in the market. The life of humans is already being significantly impacted by artificial intelligence (AI), changing everything from how we live to how we work [4]. Financial services organisations are incorporating AI technology into banking operations in response to rising client expectations and the goal of providing a better customer experience [5]. Artificial intelligence has the capacity to detect fraud, mitigate unknown hazards, and assist in regulatory compliance management [6].

II. OBJECTIVES OF THE STUDY

1. To explore the primary application of artificial intelligence in the Indian banking sector.
2. To examine key elements of using AI technology to improve the front and middle offices.
3. To research how artificial intelligence is affecting the Indian banking sector.
4. To analyse AI through the Strengths, Weaknesses, Opportunities, and Challenges of the banking industry.

III. REVIEW OF LITERATURE

This qualitative study used secondary data. The researcher used , Web of Science, MEDLINE, and Scopus to conduct a systematic search for and analysis of relevant papers for this investigation from 2017 to 2021. Additionally, some data obtained

from multiple publications, newspapers, and government statistics comes from diverse sources and is presented in a different style.

Table 1: Shows the articles on adopting Artificial Intelligence in banking sectors and its usage.

S. No.	Key Words	Focus	Outcome	Authors Name
1.	Artificial Intelligence (AI)	Artificial intelligence (AI) is the process of designing and developing smart, capable machines that can handle and carry out tasks alongside human intellect. This study also shows how Artificial intelligence is being used to make information-intensive sectors, including the academics, commerce, banking and financial sectors, advertising, universal health care, etc.	AI is helpful for doing repetitive work like responding to the same queries and extracting data from many documents, which can be the domain of the machine, allowing individuals to focus on becoming more productive and inventive.	Davenport & Ronanki (2018). [7]
2.	AI is Changing the Face of Modern Day Banks	Increased profitability, broader financial system penetration, and the facilitating of low-value transactions are all made possible by AI technology. The expansion and improvement of banks are multiplied by the efficient use of technology. The advent of artificial intelligence attracts more customers, which aids banks in expanding, and benefits the front-end and back-end offices as well as other money-related monitoring activities.	According to this survey, several participants preferred smart wallets to cash transactions, demonstrating how useful AI is in everyday life. AI also provides a second level of fraud protection in the banking sector. AI is useful and simple to use, and users look forward to periodically bringing in new AI breakthroughs.	Kaur, D., et al. (2020). [8]
3.	Artificial Intelligence in Banking	Nowadays, businesses have converted their operations into digital forms to make their jobs easier. The banking industry is no exception. In brief, computers are used in banks to obtain information and carry out tasks without the need for human participation.	This will support increasing investments, IP rights, profitability, and other factors.	Kaya, et al. (2019). [9]
4.	Accessing Risk	The banks are using artificial intelligence in financial sectors commonly called Fintech, and to make more efficient regulatory works in a better and good way is called RegTech.	With the help of these technologies' banks can continuously monitor market misconduct, prepare detailed reports and forward the same to the respective authorities.	Bauguess, S. W. (2017). [10]
5.	Applications of Artificial Intelligence	The major goal of this study is to determine whether banking industries need to adopt AI—in several fields, including automated customer service, trading, financial advice services, and decision-making.	The investigation findings demonstrate that these services offer good customer service by lowering loan distortions, increasing the safety of payments, optimising compliance-related chores, raising customer engagement, and effectively advancing the banking industry's financial position.	Königstorfer, F., & Thalmann, S. (2020). [11]
6.	AI and Automation in Banking Services	Modern banking is replete with sophisticated technology and process automation, making it feasible to purchase any good from anywhere in the world. All different financial services are requested by customers, including online banking services, Android banking apps, Fintech, auto payments, electronic payments, etc. These services of various kinds were created using machine learning methods that automatically track data, confirm its accuracy, synchronise it with banks' central databases, and check its integrity.	According to this study, financial firms and others may provide digital transformation, robotic systems, and 24-hour availability, and voice agents and chatbots are beneficial long-term investments. Moreover, customers who initially refused emerging innovations in banking will eventually accept them.	Ris, K., et al. (2020). [12]

7.	AI and Bank Credit Assessment	Artificial intelligence is a technology with automation that focuses on core banking tasks like assessment and credit risk analysis. The establishment of AI-based assessment models to determine loan terms, requirements for financing, and risk management of the loan portfolio, as well as forecast bankruptcy risks.	The study emphasised how banks and other financial institutions use vast amounts of data and machine learning technologies to evaluate the trustworthiness of people who had previously been rejected (using traditional methods) and grant them access to loans. With the aid of artificial intelligence (AI) and machine learning, big data will enable economic agents to apply machine learning algorithms for credit assessments, enabling low-income earners, the poor, small companies, small-scale farmers, women, and those with low incomes to obtain credit.	Mhlanga, D. (2021). [13]
8.	AI and FinTech	The advent of technology-driven payment banks like Airtel Payments Bank, Paytm Payments Bank, etc.; the introduction of neo-banks (which do not have a physical presence and operate primarily online); the emergence of neo-banking platforms; and the expansion of Non-Banking Financial Companies (NBFC) have given the idea that banks cannot thrive in conventional ways. Therefore, Fintech upheavals and increased customer demands have made AI valuable in the banking industry.	The study's findings indicate that banks are now extending into the retail, IT, and telecom industries to provide services like mobile banking, online mobile banking, and real-time money transfers as consumer expectations continue to rise. Customers can now access most financial services from anywhere at any time, thanks to technological advancements.	Singh, K. (2020). [14]
9.	AI and Mobile Banking (AIMB)	Customers are shifting as they use their smartphones to make payments with a debit or credit card or through apps and can quickly view their bank balances on their smartphones. Customers who are proficient at technology have incorporated it into their regular lifestyle and anticipate a flawless banking experience. The primary intention of the study is to find out how the co-creation of value helps customers feel at ease using platforms for mobile banking and artificial intelligence (AI) services.	The findings imply that the incorporation of artificial intelligence into the digital platform of self-service technology is redefining the delivery of services and the role of the customer in co-creating value. Furthermore, compared to relational (hedonic) value propositions, AIMB offers a greater number of transactional (practical) value propositions.	Payne, E. H. M., et al. (2021). [15]
10.	Robotics Process Automation (RPA) in Banking	Robots are quickly changing the banking and finance industries in a number of ways, saving the industry millions of dollars and streamlining labour-intensive tasks. Essentially, it is based on a software virtual workforce, which opens up human employees to focus on more productive, less physically demanding tasks. RPA assists financial firms with anything from business analysis to invoice processing.	Automation of robotic processes lowers mistake rates, lowers labour costs, boosts accuracy, and increases operational efficiency, all of which contribute to the banking sector's explosive expansion.	Vijai, C., et al. (2020). [16]

Indian banks must keep up and assist customers in quickly adopting new technologies. AI technology and digitalisation enabled banks and users to streamline the banking process.

IV. ARTIFICIAL INTELLIGENCE IN INDIAN BANKING SECTOR

The growth of Artificial Intelligence (AI) in the Indian banking industry has been a gradual but consistent process. Indian banks have recently embraced AI-powered solutions to increase operational effectiveness, improve customer

experience, and reduce fraud. The growth of big data and digital technology has been one of the main factors influencing AI growth in the Indian banking sector [17]. Banks have access to massive amounts of data, which they can use to inform their business decisions and develop AI-powered solutions. Midway through the 1950s, the phrase "artificial intelligence" was first used. A computer system that can be capable of observation, understanding, action, and learning. To put it another way, a framework that can see, assess, and understand its surroundings [17]. It acts on the data it gets, improves its understanding of the outcomes, and draws conclusions from what transpired. Technology has the ability to significantly expand the capacities of humans and machines, allowing them to perform things that are currently only possible with their help [18].

AI will lay the groundwork for more innovative goods and services. Additionally, artificial intelligence holds the ability to change financial services business structures and client experiences completely. [19]. Humans and machines must work together to provide the best outcomes, which calls for training and a reevaluation of future employment possibilities in the banking industry. [20,21]. Additionally, mass customisation—which can only be tapped by innovations like AI and blockchain—is the key to opening up major potential in the future. [22]. The neglected population's desire for technology-enabled mainstream banking. [23]. By embracing tech intensity, the banks are setting new benchmarks for the Indian financial industry and utilising the power of AI to create novel client experiences with various solutions. [24].

Banks are typically early adopters of information technology potential. This is true now for the returned workplace, wherein modern-day technology has been utilised for a maximum time (for example, to progress payments) and for the front end. Automatic teller machines (ATMs) [25], one of the first financial IT products, are an example [26]. The repetitive tasks of financial institution staff members, such as coin withdrawals and account stability checks, were replaced by these gadgets. Customers' access to preferred financial services was made more accessible, and banks were also made to operate more efficiently [27].

A) Government Initiatives to Support AI in Banks:

The government of India actively supports the implementation of Artificial Intelligence (AI) in the banking industry through various initiatives and programs. Here are a few ways in which the government has been supporting the implementation of AI in the banking sector:

- ***Promoting digital transformation***: The Indian government has been promoting digital technologies' adoption, including AI, across various sectors to drive digital transformation in the country. This has made the climate favorable for the application of AI in the finance industry.
- ***Fostering innovation:*** The government has launched various initiatives to foster innovation and intensify the use of AI in the banking industry. These initiatives include grants and funding for start-ups and small businesses working on AI-powered solutions for the banking sector.
- ***Skilling the workforce***: The government has launched several skilling programs intended to develop the workforce's skills in the field of AI. This is aimed at addressing the shortage of skilled professionals in the field of AI and enabling the widespread adoption of AI systems in the banking sector.
- ***Developing AI-friendly regulations***: The government has been working on developing friendly regulations to implement AI in the banking sector. These regulations ensure the responsible use of AI while also fostering innovation and driving the growth of the technology.

The government of India has been actively supporting the implementation of AI in the banking industry through various initiatives and programs aimed at promoting digital transformation, fostering innovation, skilling the workforce, and developing AI-friendly regulations. These efforts are helping to create a supportive environment for implementing AI in the financial industry and driving its growth and adoption in the country. However, the development of AI in the Indian banking sector has been a slow but steady process, driven by the rise of big data and digital technologies, as well as the government's efforts to promote digital transformation. Despite the challenges, AI can potentially transform the banking industry, providing numerous benefits and opportunities. As the technology continues to evolve and mature, we can expect to see even greater adoption of AI in the Indian banking sector in the coming years.

V. REASONS FOR THE INCREASED ADOPTION OF AI IN THE BANKING SECTOR

The rising use of AI in the banking industry has a number of causes. This comprises:\

- The banking industry faces fierce competition.
- Promote services that are process-driven [28].
- Implement self-service in banks.
- Customer requests for new and unique customised products and services [29].
- To Improve efficiency in operations [30].
- To Rising labour force output [31].

- To assist in concentrating on safety and revenue [32].
- A goal is to improve employee performance by utilising software robotic technology [33].
- To decrease the chance of theft and security lapses [34].
- To manage vast volumes of information at incredible speeds and produce insightful results [35].
- Incorporating good decisions in the different fields of banking with the help of AI [35].

Over the past few years, 12 Indian banks have received consistent press coverage for their AI activities:

A) SBI:

This bank introduced SIA. SIA provides a chatbot solution that enables customers to interact with the bank through natural language conversation, reducing wait times and the need for human customer service representatives. It assists customers with routine financial procedures and answers their questions ineptly, exactly like a bank staff. SIA is continuously evolving to provide more AI-powered solutions to enhance the customer experience [36].

- ***Bank of Baroda (BoB):*** It has created a cutting-edge digital branch with cutting-edge gadgets like an artificial intelligence-based robot called Baroda Brainy and a Digital Lab with free Wi-Fi services.
- ***Baroda Brainy***: It is an AI-powered platform that provides a range of services to the bank's customers, such as chatbots for customer service, fraud detection, and risk management. The platform also automates manual tasks and provides actionable insights to enhance the customer experience.
- ***Digital Lab***: It is an innovation center established by BoB to explore new AI-powered solutions and technologies and to improve its operations and customer experience continuously. The Digital Lab aims to leverage AI and other cutting-edge technologies to stay ahead in the rapidly evolving banking industry. [37]**.**

B) Allahabad Bank:

Allahabad Bank, like many other financial institutions, is using artificial intelligence (AI) is probable in various aspects of its operations. Fraud detection, automated customer service, loan processing, including risk management are some frequent applications for AI in the banking industry. By using AI, banks can process a lot of data accurately and rapidly, improve operational efficiency, and provide better and more personalised services to their customers. [38].

C) Andhra Bank:

Andhra Bank has implemented an AI initiative called Float Bot to improve its customer service and reduce manual labour. This AI Chatbot is linked with the Core Banking waiters of this bank to digitally interact and manage onboarding and training, as well as client assistance, for its 5 Cr visitors. It is an AI-powered chatbot solution that enables customers to interact with the bank through natural language conversation, reducing wait times and the need for human customer service representatives.

This AI initiative by Andhra Bank is aimed at improving its customer experience and reducing manual labour while staying ahead in the rapidly evolving banking industry. By implementing Float Bot, the bank can provide instant and accurate responses to customer inquiries, which can help enhance the bank's reputation and competitiveness. [39].

D) YES Bank:

YES Bank has implemented two major AI initiatives, YESmPower and YES ROBOT, to improve its operations and customer experience.

- ***YESmPower***: It is a lending product. This is an AI-powered platform that provides a range of services to the bank's customers, such as chatbots for customer service, fraud detection, and risk management. The platform also automates manual tasks and provides actionable insights to enhance the customer experience.
- ***YES ROBOT***: It is an AI-powered chatbot solution that enables customers to interact with the bank through natural language conversation, reducing wait times and the need for human customer service representatives. It is prepared to respond to customers' banking-related inquiries whenever they arise, without the inconvenience of waiting on hold or conducting online research, and this chatbot provides instant and accurate responses to customer inquiries, enhancing the customer experience [40].

E) HDFC Bank:

It has created the chatbot EVA, which stands for Electronic Virtual Assistant and is an AI-powered chatbot solution which enables customers to interact with the bank through natural language conversation. EVA responds to consumer questions quickly and accurately, cutting down on waiting periods and the demand for human customer service employees. [42].

F) Axis Bank:

It stands for Axis AI and Automation and is an AI-powered platform that provides a range of services to the bank's customers, such as chatbots for customer service, fraud detection, and risk management. The platform also automates manual tasks and provides actionable insights to enhance the customer experience. This AI initiative is aimed at improving the bank's operational efficiency, reducing costs, enhancing the customer experience, and staying ahead in the rapidly evolving banking industry. By implementing AXAA, the bank can provide more targeted products and services, prevent fraudulent activities, and improve its reputation and competitiveness in the market [42].

G) ICICI Bank:

This bank was the first in the nation to integrate AI technology on a broad scale into visually appealing operations. This has implemented multiple AI initiatives, but it does not have a specific named AI initiative. However, the bank has implemented AI-powered chatbots, AI-powered fraud detection solutions, and AI-powered personalised services. These programs have helped ICICI Bank increase operational effectiveness, lower expenses, and improve customer satisfaction. According to the study, it has been projected that over 750 software robots handle about 2 million deals every day, making up 20 of the sale levels [43].

H) Canara Bank:

They introduced Mitra, a creative robot that assists visitors in navigating the bank. The mortal resource now includes a second one, Candi, who is just marginally less effective than Mitra.

- ***Mitra:*** It is an AI-powered virtual assistant that provides instant and accurate responses to customer inquiries through natural language conversation. Mitra enables customers to interact with the bank and get their queries resolved without the need for human customer service representatives.
- ***Candi:*** It is an AI-powered chatbot solution that enables customers to access banking services through a conversational interface. Customer enquiries are promptly and accurately answered by Candi, cutting down on waiting periods and the demand for human customer support employees [44].

I) City Union Bank:

Lakshmi, a banking robot, was introduced by this institution. It is a banking robot designed to improve customer service and reduce manual labour. Lakshmi enables customers to interact with the bank and get their queries resolved without the need for human customer service representatives. In addition to 125 topics, the robot can converse with visitors. The robot has been configured to connect with the fundamental banking results and reply to general inquiries [45].

J) Punjab National Bank (PNB):

Punjab National Bank (PNB) has publicly announced its intention to deploy AI in account reconciliation and use data to enhance its inspection systems. By implementing AI in these areas, PNB aims to improve efficiency and accuracy in its financial operations and provide better service to its customers. The bank can speed up account reconciliation operations, decrease errors and human interference, and automate repetitive and laborious duties with the aid of AI. By using data to improve inspection processes, the bank may more efficiently identify and stop fraud while also enhancing its overall risk mitigation and regulatory compliance. These AI initiatives by PNB are part of its ongoing efforts to stay ahead in the rapidly evolving banking industry and improve its competitiveness [46].

K) IndusInd Bank:

It is an AI-powered virtual assistant that allows customers to access banking services through Amazon Alexa. The Alexa Skill enables customers to check account balances, get mini-statements, and request chequebooks through voice commands. This makes it convenient and time-saving for customers to access banking services without having to log into their online banking portals or visit a branch. Additionally, the virtual assistant responds to consumer concerns quickly and accurately, eliminating the need for human labour and enhancing the entire customer experience. By implementing the IndusAssist Alexa Skill, the bank can provide instant and accurate responses to customer inquiries, which can help enhance the bank's reputation and competitiveness. The use of Amazon Alexa also provides customers with a convenient and user-friendly interface, making banking more accessible and efficient. It has introduced the IndusAssist Alexa Skill, which allows users of bank accounts to conduct both financial and non-financial banking operations using Alexa, a virtual assistant developed by Amazon [46].

VI. THE MAJOR ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE BANKING INDUSTRY

Banks can manage record-level, high-speed data using artificial intelligence to gain insightful information. In addition, technologies like biometric fraud detection systems, AI bots, and digital payments all contribute to providing outstanding services for a wider range of clients [47]. A wide range of technologies fall under the umbrella of the field of artificial

intelligence, including but not limited to machine learning, natural language processing, expert systems, vision, speech, planning, robotics, etc. [48].

1. **Customer support and involvement (Chatbot):** The employment of chatbots reduces costs with an extremely high return on investment, making it a common use across many sectors [49]. Customers' chatbot demands, such as bank balance inquiries, micro logins, statements, transfers, etc., are readily resolved, reducing contact stress at contact centres', online banking, etc. [50].
2. **Robotic cues:** A robot-advisor looks at shared financial data and history in an effort to assess a customer's financial health. Based on the client's research and customer aspirations, the robot advisor suggests investments in a certain process or product [51].
3. **Basic Predictive or Targeted Analytics:** The most common applications of AI are generic semantics, naturalness in ubiquitous speech applications, and predictive analytics. Specific patterns and connections in the data previously difficult to find with existing technologies are now found using artificial intelligence [52]. Bank account holders or customers will be able to spot the ones that are not being used. Up-sell and cross-sell opportunities, as well as operational data indicators, directly impact sales [53].
4. **Cybersecurity protection on computers:** Artificial intelligence increases the effectiveness of protection systems whenever it can by using information from prior threats and then learning patterns and metrics that might not be relevant for attack prediction and prevention [54]. Even artificial intelligence assists in monitoring internal risks or breaches and recommends corrective actions that help stop hacking attacks or data exploitation [55].
5. **Direct credits and credit ratings:** Analysing information from both conventional and unconventional data sources, artificial intelligence can help detect alternative lenders' and customers' creditworthiness [56]. This supports banks' efforts to create innovative credit system approaches built on a solid credit rating model, including for individuals or companies with a scant credit record. This helps banks create innovative credit system procedures based on a robust credit rating model, even for individuals or enterprises with a brief credit record [57].

VII. THE KEY ELEMENTS TO USE AI TECHNOLOGY TO IMPROVE THE FRONT AND MIDDLE OFFICES

A) Business Process Management at Back-End:

- ***Human Resource-related services*** **-** Artificial intelligence may be utilised to handle hiring-related primary-stage duties like interacting with new hires, preliminary screening prospects via chat risk assessment, and early-stage filtering utilising social networking analytics.
- ***R&D of Investment-related services*** **-** Numerous back-end tasks are repetitive. It may be a good idea to use software robots to do these activities, which may not only conserve time but also result in outstanding effectiveness and precision [58].
- ***Algorithmic Trading*** **-** There are numerous algorithmic systems for handling high-frequency trading, in which data is received from multiple stock markets, and several investment choices are taken in nanoseconds depending on this information.
- ***Robotic Process Automation*** **-** The upcoming era of Robotic Process Automation involves computational thinking. [59].
- ***Insurance Underwriting*** **-** Applying artificial intelligence to handle insurance-related duties such as evaluating risk accuracy metrics and anticipating a customer's payment of premiums. [60].

B) Privacy, Security, and Compliance:

- ***Scam & Fraud Detection and their Prevention*** **-** Scam and fraud detection using machine learning (a type of AI) is much more convenient now than previous methods. [61].
- ***Compliance Monitoring*** **-** The use of AI minimises the time required to evaluate long paperwork and highlight potential errors, which is now feasible in seconds rather than hours beforehand [62].

C) CRM, Marketing, and Customer Support:

- ***Chatbots or voice bots Services*****-** Chatbots and voice bots are well-known already, and more advanced forms of chatbots called Co-bots (chatbots with cognitive skills) are on the way. [63].
- ***Smart Wallets*****-** E-wallets offer swift and clever capabilities, including scanning fingers for security, that makes them easy to use and safe [63].
- ***Personalised Financial Services*****-** Bots with intelligence are also utilised to manage client targets. For example, suggesting stocks or bonds [63].
- ***Robotic Process for Handling Financial Products*****-** Robots can manage financial products without human participation [64].

VIII. THE IMPACT OF AI IN THE BANKING SECTOR

In the banking industry, AI technology is quickly taking over. AI helps automate every work process in the banking sector. Therefore, AI plays a huge part in the financial sector. Here are a few examples of how artificial intelligence has influenced the banking business.

A) Reduce Operating Expenses:

Many banks have already implemented automated procedures; they use artificial intelligence, machine learning, and Natural Language Processing (NLP). AI chatbots are revolutionising banking with their emergence. Banking institutions may provide dependable 24/7 customer care and increase their credibility by using AI chatbots [65]. Thus, the creation of AI chatbots for the bank will lower the costs involved with providing human customer care. Banks are able to enhance customer service and provide round-the-clock support by getting rid of tedious manual operations, improving the user experience, and implementing AI in their mobile banking apps [66].

B) Customer Support:

Enhancing customer service is one of the banking sector's most important artificial intelligence applications. Every business gets its money from its customers. A company that provides greater customer service will boost its brand equity. Additionally, maximum recruitment and retention are achieved by providing enhanced services to customers without causing frustration. Even while on vacation, other AI applications offer banking services [67]. Perhaps it is not possible for the banker to clarify the customer's difficulties, especially when on vacation. In this approach, bank AI enables banks to deliver associated services at the right time and level. The artificial intelligence (AI)--powered virtual assistant for bank customers provides you with tailored user recommendations and automatic transmission of updates to the customer's credit report. Additionally, send payment instructions for invoices to clients as well [68].

C) Select Customers with Good Credit for Completed Payments (Loan Processing):

Most people are aware that applying for a personal loan from a bank can be frustrating in general. In the traditional loan process, loan officers manually review and verify loan applications and supporting documents; it might be a difficult and time-consuming operation. In AI, the loan process can be automated, reducing the time and resources required. AI algorithms can analyse the loan application and supporting documents, verifying the information and highlighting discrepancies [69]. Credit scoring is yet another manner in which AI facilitates the lending process. AI algorithms can analyse enormous volumes of financial data to establish the creditworthiness of a client and make an instantaneous loan decision [70]. This not only reduces the time required for loan approval but also ensures that loan decisions are based on accurate and up-to-date information.

Furthermore, AI algorithms can determine a customer's risk profile based on data from various sources, which can be used to determine loan approval and interest rates. Artificial intelligence-based credit decision systems examine client transaction data to quickly evaluate whether or not a consumer is eligible for a loan. Artificial intelligence-based mobile banking development Apps that make it simple for users to apply for loans, credit cards, chequebooks, etc [71].

D) AI aids Banks in Maintaining Compliance:

Banking and medical services Compliance regulations frequently alter for different industries. Each bank will offer banking services and assist consumers while observing all applicable laws. A bank should not reveal its customers' banking details; it is extremely vulnerable to hacking attacks. Technologies for fraud investigation enabled by artificial intelligence can spot irregular behaviour by hackers. In this approach, AI assists banks in providing best-in-class customer data protection [72].

Banks are implementing various AI initiatives such as virtual assistants, chatbots, and intelligent systems to improve their operations and give customers a more banking experience that is both convenient and efficient. These initiatives have proved the ability of AI to change the banking industry and have increased the competitiveness of Indian banks in the international marketplace. The increasing adoption of AI in the banking industry demonstrates banks' dedication to innovation and desire to give their customers the best banking experience possible. As technology develops, AI will probably have a more significant part in the near future of the Indian banking sector as a whole.

IX. SWOC ANALYSIS

Banks in the public and private sectors are utilising emerging technology to grow their market shares. All banks have begun investing in artificial intelligence through more client involvement in an effort to increase profits. To achieve this, SWOC is the best tool to analyse banks' standards and transactions to set a benchmark. A SWOC analysis is a powerful planning method used to evaluate an organisation's, company's, or project's strengths, weaknesses, opportunities, and challenges [73-80]. SWOC analysis is very helpful for figuring out internal and external aspects that are important for making decisions. Banks in the public and private sectors are utilising emerging technology to grow their market shares. All banks have begun investing in artificial intelligence through more client involvement in an effort to increase profits.

Table 2: Shows The SWOC Analysis of Artificial Intelligence in the Banking Sector.

Strengths	➢ Software that analyses customer group-specific transactions is driven by AI and presents clients with opportunities to invest in various products that will increase their interest or their ability to make wiser financial decisions. ➢ By reducing repeated chores, AI personalisation increases bank employees' job efficiency. ➢ AI gathers information from several sources to confirm your account's current financial status. ➢ AI provides enhanced data protection through voice commands or voice recognition. The AI compares the accounts in the event that the account holders' credentials are being used fraudulently for phone or in-person transactions. Speech patterns of account holders during attempts to execute a transaction. ➢ The use of AI automates the delivery of communications to account holders by text, email, or voice, and it verifies your identity before sending any messages. ➢ Artificial intelligence penetrates the heart of bank security operations, encrypting every stage with passwords that authenticate and transmit transactions. Recognise businesses' efforts to combat fraud and money laundering.
Weaknesses	➢ Artificial intelligence will always be inhuman. It can be a computer or an algorithm, and while it can utilise information, it will not be able to comprehend or respond to the complexities of real feeling. ➢ The pool of people working with the sophisticated tools and procedures of AI applications in banking was observed to have a clear lack of expertise. ➢ Artificial intelligence (AI) is a field with highly sophisticated and expensive technologies. ➢ The AI makes decisions using powerful Machine Learning and Natural Language Processing methods that are difficult for the average person to comprehend and analyse.
Opportunities	➢ Artificial intelligence is integrated with other technologies like machine learning, deep learning, and the Internet of Things. This enables a quicker response to problems that can help other industries in the form of customer services. ➢ AI makes it possible to comply with the existing banking laws fully. Keeping up-to-date on implementing developments enables the bank to control operations and maintain compliance. ➢ From a financial standpoint, artificial intelligence is still expanding, and institutions will be prepared to take advantage of the newest developments. ➢ With the growing use of artificial intelligence, there is an obvious requirement for a trained workforce. This gives 24-7 non-stop, diligent, and unwavering competence to a user. To ensure the precision of the information saved, professionals and engineers with skills in domains such as data science and machine learning are necessary. ➢ AI algorithms will assist users in making more secure and profitable credit decisions by studying their existing credit histories, creditworthiness, financial transactions, and customer recommendations.
Challenges	➢ Employees are concerned that the adoption of artificial intelligence may lead to job losses. ➢ Social engineering, often known as ethical hacking, poses a significant threat to banking and finance. People are frequently the most vulnerable link in the security chain, as they are easily misled into exposing confidential data and login credentials. This might affect both bank employees and clients. ➢ Employees use insecure login passwords, which facilitate cybercriminals or hackers. ➢ Unauthorised access to staff and customer data, especially exposing a bank to a statutory violation of privacy that might end in a large fine in addition to a private class action lawsuit. ➢ Hackers are aiming to obtain individualised information from mobile devices and applications used by clients for banking. ➢ They could help save the service's supplier cash on labour and running expenditures, but they increase inefficiency for customers because they are old, insufficient to handle the spectrum of customer issues, or prone to technological breakdowns.

This report will help you understand how prevalent artificial intelligence is in the banking business. Furthermore, it assists in establishing a standard among other competitors in the current market by recognising our own flaws in banking operations.

X. FINDINGS

1. Front- and middle-office AI solutions have the greatest possibility for cost savings across banks.
2. Banks are using AI from the start to expedite the identification of clients and verification, mimic human personnel via chatbots and voice assistants, deepen customer connections, and provide customised advice and guidance.
3. To prevent fraudulent payment transactions and strengthen anti-money laundering (AML) procedures, banks are implementing AI in middle-office tasks and regulatory checks for "know your customer" (KYC) [81].
4. Robotic Process Automation in the banking sector will reach 1.12 billion dollars in 2025 [82].

5. Winning techniques used by banks experiencing AI-enabled transformations highlight how to best capitalise on the opportunity. These tactics emphasise the requirement for a comprehensive AI strategy that encompasses all business lines of banks, usable data, collaborations with outside partners, and skilled personnel.
6. AI is supporting banks in the transformation of activities ranging from accountancy to marketing to agreements and cybersecurity [83].
7. The banking and financial sectors heavily rely on artificial intelligence (AI) to provide dependable and inexpensive banking services. The market for artificial intelligence in banking, which was assessed at $3.88 billion in 2020, is expected to grow at a CAGR of 32.6% between 2021 and 2030, reaching $64.03 billion [84].

XI. RECOMMENDATIONS

1. Banks that utilise AI technology must follow every relevant rule and legislation, particularly confidentiality laws and financial services regulations. Banks must also have rigorous risk management policies established to guarantee the secure and accountable application of AI, as well as the protection of client data and privacy. Furthermore, AI-powered financial services may be subject to industry-specific rules such as anti-money laundering laws and know-your-customer (KYC) protocols. These policies aim to guarantee that AI is utilised responsibly and transparently while also protecting consumers from any harm.
2. With the increased use of AI technology, there will be a clear demand for effective staff. Experienced experts with skills in domains such as data science and machine learning are necessary to lend credibility to the data that is accessible.
3. Implementing ongoing training programs for security awareness or assessing current programs to make sure that they're current and relevant to the threat environment.
4. As the use of artificial intelligence grows, there will be an evident requirement for a competent workforce. Professionals having knowledge and experience in areas such as data science and machine learning are needed to provide legitimacy to the data.

XII. CONCLUSION

The future banking firm powered by AI will be able to enhance back-office operations, decision-making, and the innovation process while utilising data to build encounters that are intelligent, customised, and multichannel. The most significant change may be a shift away from the conventional departmental organisation and toward a platform operating model, in which cross-functional teams are organised as a number of platforms within the bank. The end effect will be greater agility and speed, as well as better alignment of goals and priorities across the company. An implementation plan and the use of AI technologies are more important than ever and are now required for competitive advantage.

XIII. REFERENCES

[1] Fetzer, J. H. (1990). What is Artificial Intelligence?, In *Artificial Intelligence: Its Scope and Limits*, *Springer*, *4*(1), 3-27.
[2] Smith, A., & Nobanee, H. (2020). Artificial intelligence: in banking A mini-review, *SSRN*, *1*(1), 1-9.
[3] Alzaidi, A., & Kazakov, D. (2008). Artificial Intelligence for Islamic Banking. *The Journal of Muamalat and Islamic Finance Research*, *5*(1), 1-15.
[4] Ince, H., & Aktan, B. (2009). A comparison of data mining techniques for credit scoring in banking: A managerial perspective. *Journal of Business Economics and Management*, *10*(3), 233-240.
[5] Eletter, S. F., Yaseen, S. G., & Elrefae, G. A. (2010). Neuro-based artificial intelligence model for loan decisions. *American Journal of Economics and Business Administration*, *2*(1), 27-34.
[6] MARIA, A. (2007). Integration of geographical information systems and artificial intelligence technics to support banking industry decision taking. *Bol. Ciênc. Geod., sec. Artigos*, *13*(2), 353-368.
[7] Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard business review*, *96*(1), 108-116.
[8] Kaur, D., Sahdev, S. L., Sharma, D., & Siddiqui, L. (2020). Banking 4.0:'The influence of artificial intelligence on the banking industry & how AI is changing the face of modern day banks'. *International Journal of Management*, *11*(6), 577-585.
[9] Kaya, O., Schildbach, J., AG, D. B., & Schneider, S. (2019). Artificial intelligence in banking. *Artificial intelligence*. *1*(1), 1-9.
[10] Bauguess, S. W. (2017). The role of big data, machine learning, and AI in assessing risks: A regulatory perspective. *Machine Learning, and AI in Assessing Risks: A Regulatory Perspective. 1*(1),1-6.
[11] Königstorfer, F., & Thalmann, S. (2020). Applications of Artificial Intelligence in commercial banks–A research agenda for behavioral finance. *Journal of behavioral and experimental finance*, *27*(1), 1-32.
[12] Ris, K., Stankovic, Z., & Avramovic, Z. (2020). Implications of implementation of Artificial Intelligence in the banking business with correlation to the human factor. *Journal of Computer and Communications*, *8*(11), 130-144.
[13] Mhlanga, D. (2021). Financial inclusion in emerging economies: The application of machine learning and artificial intelligence in credit risk assessment. *International Journal of Financial Studies*, *9*(3), 1-16.
[14] Singh, K. (2020). Banks banking on ai. *International Journal of Advanced Research in Management and Social Sciences*, *9*(9), 1-11.
[15] Payne, E. H. M., Peltier, J., & Barger, V. A. (2021). Enhancing the value co-creation process: artificial intelligence and mobile banking service platforms. *Journal of Research in Interactive Marketing*. *5*(1), 68-85.
[16] Vijai, C., Suriyalakshmi, S. M., & Elayaraja, M. (2020). The future of robotic process automation (RPA) in the banking sector for better customer experience. *Journal of Commerce*, *8*(2), 61-65.
[17] Malali, A. B., & Gopalakrishnan, S. (2020). Application of Artificial Intelligence and Its Powered Technologies in the Indian Banking and Financial Industry: An Overview. *IOSR Journal Of Humanities And Social Science*, *25*(4), 55-60.
[18] Srivastava, S. K. (2018). Artificial Intelligence: way forward for India. *JISTEM-Journal of Information Systems and Technology Management*, *15*(1). 1-23.

[19] Zhao, Q., Tsai, P. H., & Wang, J. L. (2019). Improving financial service innovation strategies for enhancing china's banking industry competitive advantage during the fintech revolution: A Hybrid MCDM model. *Sustainability*, *11*(5), 1419.

[20] Lui, A., & Lamb, G. W. (2018). Artificial intelligence and augmented intelligence collaboration: regaining trust and confidence in the financial sector. *Information & Communications Technology Law*, *27*(3), 267-283.

[21] Wilson, H. J., & Daugherty, P. R. (2018). Collaborative intelligence: Humans and AI are joining forces. *Harvard Business Review*, *96*(4), 114-123.

[22] Arjun, R., Kuanr, A., & Suprabha, K. R. (2021). Developing banking intelligence in emerging markets: Systematic review and agenda. *International Journal of Information Management Data Insights*, *1*(2), 1-11.

[23] Vedapradha, R., & Ravi, H. (2021). Innovation and challenges of blockchain in banking: a scientometric view. *Asia Pacific Journal of Innovation and Entrepreneurship*, *15*(1), 51-61.

[24] Adhikari, R. P., Aryal, T., & Park, G. (2022). Impact Of Artificial Intelligence On Commercial Bank's ATM. *Farabi Journal of Social Sciences*, *8*(2), 46-52.

[25] Lau, T., & Leimer, B. (2019). The era of connectedness: How AI will help deliver the future of banking. *Journal of Digital Banking*, *3*(3), 215-231.

[26] Mor, S., & Gupta, G. (2021). Artificial intelligence and technical efficiency: The case of Indian commercial banks. *Strategic Change*, *30*(3), 235-245.

[27] Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of management information systems*, *35*(1), 220-265.

[28] Naim, A., Alahmari, F., & Rahim, A. (2021). Role of artificial intelligence in market development and vehicular communication. *Smart Antennas: Recent Trends in Design and Applications*, *2*(1), 28-39.

[29] Thowfeek, M. H., Samsudeen, S. N., & Sanjeetha, M. B. F. (2020). Drivers of Artificial Intelligence in Banking Service Sectors. *Solid State Technology*, *63*(5), 6400-6411.

[30] Al-Surmi, A., Bashiri, M., & Koliousis, I. (2022). AI based decision making: combining strategies to improve operational performance. *International Journal of Production Research*, *60*(14), 4464-4486.

[31] Hammer, A., & Karmakar, S. (2021). Automation, AI and the Future of Work in India. *Employee Relations: The International Journal*. *43*(6), 1327-1341.

[32] Melnychenko, O. (2020). Is artificial intelligence ready to assess an enterprise's financial security? *Journal of Risk and Financial Management*, *13*(9), 191.

[33] Villar, A. S., & Khan, N. (2021). Robotic process automation in banking industry: a case study on Deutsche Bank. *Journal of Banking and Financial Technology*, *5*(1), 71-86.

[34] Mohammed, I. A. (2020). Artificial Intelligence for Cybersecurity: A Systematic Mapping Of Literature. *International Journal of Innovations in Engineering Research And Technology [IJIERT]*, *7*(9). 172-176.

[35] Baftijari, A. (2021). New Trends in The Banking-Financial Sector. *Economic Vision-International Scientific Journal in Economics, Finance, Business, Marketing, Management and Tourism*, *8*(15), 11-22.

[36] Polak, P., Nelischer, C., Guo, H., & Robertson, D. C. (2020). "Intelligent" finance and treasury management: what we can expect. *AI & SOCIETY*, *35*(3), 715-726.

[37] Sindhu, J., & Namratha, R. (2019). Impact of artificial intelligence in chosen Indian Commercial Bank–A cost benefit analysis. *Asian Journal of Management*, *10*(4), 377-384.

[38] Tripathi, S., Garg, R., & Varshini, K. Role of Artificial Intelligence in The Banking Sector. 3(9), 433-442.

[39] Andhra Bank launches AI virtual assistant (2019), Retrieved From https://www.expresscomputer.in/artificial-intelligence-ai/andhra-bank-launches-ai-virtual-assistant/38027/ on 21-11-2022.

[40] Deb, R. (2021). YES Bank fiasco: a corporate governance failure. *Decision*, *48*(2), 181-190.

[41] Subudhi, S. R. I. H. A. R. I. (2019). Banking on artificial intelligence: Opportunities & challenges for banks in India. *International Journal of Research in Commerce, Economics & Management*, *9*(7).

[42] Jaiwani, M., & Gopalkrishnan, S. (2022). Adoption of RPA and AI to Enhance the Productivity of Employees and Overall Efficiency of Indian Private Banks: An Inquiry. *In 2022 International Seminar on Application for Technology of Information and Communication (iSemantic)*.191-197.

[43] Vinoth, S. (2022). Artificial intelligence and transformation to the digital age in Indian banking industry–a case study. *Artif. Intell*, *13*(1), 689-695.

[44] Shawna Guha. (2019). Arificial Intelligence in Indian Banking Scenario: Practically Possible?, Retrieved From https://timesofindia.indiatimes.com/readersblog/smallscribbler/artificial-intelligence-in-indian-banking-scenario-practically-possible-5312/ on 26-11-2022.

[45] Srivastava, K. (2021). Paradigm shift in Indian banking industry with special reference to artificial intelligence. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, *12*(5), 1623-1629.

[46] Yadav, R. A., & Arunmozhi, M. Comparing the Internal Business Process Of Balanced Scorecard Within The Banking Sector In India. *Journal of Tianjin University Science and Technology*. *54*(6), 155-170.

[47] Lu, Y. (2019). Artificial intelligence: a survey on evolution, models, applications and future trends. *Journal of Management Analytics*, *6*(1), 1-29.

[48] Kumar, A., Srivastava, A., & Gupta, P. K. (2022). Banking 4.0: The era of artificial intelligence-based fintech. *Strategic Change*, *31*(6), 591-601.

[49] Pal, S. N., & Singh, D. (2019). Chatbots and virtual assistant in Indian banks. *Industrija*, *47*(4), 75-101.

[50] Hari, H., Iyer, R., & Sampat, B. (2022). Customer brand engagement through chatbots on bank websites–Examining the antecedents and consequences. *International Journal of Human–Computer Interaction*, *38*(13), 1212-1227.

[51] Song, Y., & Luximon, Y. (2020). Trust in AI agent: A systematic review of facial anthropomorphic trustworthiness for social robot design. *Sensors*, *20*(18), 5087.

[52] Davenport, T. H. (2018). From analytics to artificial intelligence. *Journal of Business Analytics*, *1*(2), 73-80.

[53] Agarwal, A., Singhal, C., & Thomas, R. (2021). AI-powered decision making for the bank of the future. *McKinsey & Company*. *1*(1), 1-12.

[54] Soni, V. D. (2019). Role of Artificial Intelligence in Combating Cyber Threats in Banking. *International Engineering Journal For Research & Development*, *4*(1), 7-7.

[55] Kaloudi, N., & Li, J. (2020). The ai-based cyber threat landscape: A survey. *ACM Computing Surveys (CSUR)*, *53*(1), 1-34.

[56] Fares, O. H., Butt, I., & Lee, S. H. M. (2022). Utilization of artificial intelligence in the banking sector: a systematic literature review. *Journal of Financial Services Marketing*, 1-18.

[57] Naim, A. (2022). Role of Artificial Intelligence in Business Risk Management. *American Journal of Business Management, Economics and Banking*, *1*, 55-66.

[58] Di Vaio, A., Palladino, R., Hassan, R., & Escobar, O. (2020). Artificial intelligence and business models in the sustainable development goals perspective: A systematic literature review. *Journal of Business Research*, *121*(1), 283-314.

[59] Meghani, K. (2020). Use of Artificial Intelligence and Blockchain in Banking Sector: A Study of Scheduled Commercial Banks in India. *Use of Artificial Intelligence and Blockchain in Banking Sector: A Study of Scheduled Commercial Banks in India, Kishore Meghani Indian Journal of Applied Research*, *10*(8). 1-4.

[60] Neale, F. R., Drake, P. P., & Konstantopoulos, T. (2020). InsurTech and the Disruption of the Insurance Industry. *Journal of Insurance Issues*, *43*(2), 64-96.

[61] Truby, J., Brown, R., & Dahdal, A. (2020). Banking on AI: mandating a proactive approach to AI regulation in the financial sector. *Law and Financial Markets Review*, *14*(2), 110-120.

[62] Lee, J. (2020). Access to finance for artificial intelligence regulation in the financial services industry. *European Business Organization Law Review*, *21*(4), 731-757.

[63] Ghandour, A. (2021). Opportunities and Challenges of Artificial Intelligence in Banking: Systematic Literature Review. *TEM Journal*, *10*(4), 1581-1587.

[64] Reddy, K. N., Harichandana, U., Alekhya, T., & Rajesh, S. M. (2019). A study of robotic process automation among artificial intelligence. *International Journal of Scientific and Research Publications*, *9*(2), 392-397.

[65] Nikitha, G. N., Chandana, C., Neelashree, N., Nisargapriya, J., & Vishwesh, J. (2020). Bank customer complaints analysis using natural language processing and data mining. *International Journal of Progressive Research in Science and Engineering*, *1*(3), 22-25.

[66] Tarafdar, M., Beath, C. M., & Ross, J. W. (2019). Using AI to enhance business operations. *MIT Sloan Management Review*, *60*(4), 37-44.

[67] Lee, S. M., & Lee, D. (2020). "Untact": a new customer service strategy in the digital age. *Service Business*, *14*(1), 1-22.

[68] Eren, B. A. (2021). Determinants of customer satisfaction in chatbot use: evidence from a banking application in Turkey. *International Journal of Bank Marketing*. 39(2), 294-311.

[69] Shen, H., & Kurshan, E. (2020, October). Deep Q-network-based adaptive alert threshold selection policy for payment fraud systems in retail banking. In *Proceedings of the First ACM International Conference on AI in Finance.* 1-7.

[70] Mărăcine, V., Voican, O., & Scarlat, E. (2020). The digital transformation and disruption in business models of the banks under the impact of FinTech and BigTech. *In Proceedings of the International Conference on Business Excellence*. 294-305.

[71] Satheesh, M. K., & Nagaraj, S. (2021). Applications of artificial intelligence on customer experience and service quality of the banking sector. *International Management Review*, *17*(1), 9-86.

[72] Singh, C., & Lin, W. (2020). Can artificial intelligence, RegTech and CharityTech provide effective solutions for anti-money laundering and counter-terror financing initiatives in charitable fundraising. *Journal of Money Laundering Control*. *24*(3), 464-482.

[73] Madhura, K., & Niyaz Panakaje, D. (2022). Development of Fashionable Products through Online Retailing: A Case Study on Amazon and Flipkart. *International Journal of Case Studies in Business, IT, and Education (IJCSBE), ISSN*, *6*(1), 61-75.

[74] Aithal, P. S., & Aithal, S. (2019). New Directions in Scholarly Research–Some Fearless Innovations & Predictions for 21st Century Research. *International Journal of Management, Technology, and Social Sciences (IJMTS)*, *4*(1), 1-19.

[75] Bindhu, D. & Niyaz. (2021). Corporate Social Responsibility-A Study on Mangalore Refinery and Petrochemicals Limited (MRPL). *International Journal of Case Studies in Business, IT and Education (IJCSBE)*, *5*(2), 375-385.

[76] Kambali, U. & Niyaz. (2021). An Overview of Agriculture Finance in India. *International Journal of Case Studies in Business, IT and Education (IJCSBE)*, *5*(2), 197-210.

[77] Mendon, S., Salins, M., & Aithal, P. S. (2019). Challenges Associated with Running A Green Business in India and Other Developing Countries. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, *3*(1), 35-47.

[78] Aswani, T. D., & Bhat, S. *THE PROBLEMS AND CHALLENGES OF THE HANDLOOM INDUSTRY–A CASE STUDY IN CHENDAMANGALAM, ERNAKULAM (DT.) KERALA*, *4*(2), 1553-1561.

[79] Frederick, D. P., & Bhat, G. (2022). SWOT Analysis of Swiggy-An Online Food Deliverer. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, *6*(2), 821-830.

[80] Bharathi, & Mayya, S., (2022). A Study on Marketing Strategies and SWOC Analysis of Himalaya Wellness Private Ltd. *International Journal of Case Studies in Business, IT, and Education (IJCSBE)*, *6*(2), 637-654.

[81] Kshetri, N. (2021). The role of artificial intelligence in promoting financial inclusion in developing countries. *Journal of Global Information Technology Management*, *24*(1), 1-6.

[82] Robotic Process Automation (RPA) in Banking Industry (2023). Retrieved From https://automationedge.com/blogs/robotic-process-automation-rpa-in-banking-industry/ on 5-01-2023.

[83] Akter, S., Michael, K., Uddin, M. R., McCarthy, G., & Rahman, M. (2020). Transforming business using digital innovations: The application of AI, blockchain, cloud and data analytics. *Annals of Operations Research*, *1*(1),1-33.

[84] B, Pramod., K , Shadaab., K .Vineet. (2021) AI in Banking Market. Retrieved From https://www.alliedmarketresearch.com/ai-in-banking-market-A11871#:~:text=The%20global%20AI%20in%20banking,32.6%25%20from%202021%20to%202030. On 01-01-2023.