

# Impact On Ai And Digitalization In Banking Sector

<sup>1</sup>AL Ameen A, MBA (Marketing and Sales)

<sup>2</sup>Dr. Ruchika Nayyar

Amity University, Noida.

Corresponding Author: AL Ameen A, Email: al5281111@gmail.com

## Abstract-

Technology has changed how businesses operate, and in recent years, it has been successfully riding the luck of the market to propel enterprises to rapid expansion. The Indian banking industry is steadily moving in that direction as the usage of artificial intelligence (AI) gains in importance. In contrast to other sectors, adoption in the banking industry has been slow. This might be the case because banking is still a labour-intensive sector with tasks that demand human involvement. The Indian banking industry is aware of the need to cut costs and spending on unnecessary jobs, nevertheless. The Indian banking industry is looking into methods to use AI to streamline processes and enhance customer service in the long run. The purpose of this paper is to investigate the areas where AI is being used in the banking sector and to identify the impact of AI and digitalization in banking sector.

**Keywords:** Efficiency, customer experience, cost reduction, Innovation, security, competitive advantages.

## 1. INTRODUCTION

The banking industry is undergoing a digital and artificial intelligence revolution, which has many advantages including better productivity, enhanced client satisfaction, and lower costs. Customers can now access financial services on any device, at any time, and from anywhere thanks to the growth of digital banking platforms. Data analytics is assisting banks to better understand client demands and behavior, while AI-powered chatbots and virtual assistants are being used to provide tailored customer support. The implementation of these technologies, meanwhile, also poses problems for banks, such as cybersecurity issues, moral dilemmas about the use of client data, and the possibility of job loss for employees in the sector. Also, the regulatory environment is changing quickly to keep up with the rate of technological progress, which presents new difficulties for banks. Given the importance of these modifications, it is crucial to comprehend how digitization and AI are affecting the banking industry. This study attempts to offer a thorough examination of how new technologies affect the banking sector, highlighting both the advantages and disadvantages they bring.

AI and digitization have brought both benefits and problems to the banking sector, which is continually changing. Large-scale data analysis, pattern and anomaly detection, and prediction making are all capabilities of AI. Online banking, mobile banking, and e-commerce have all been made possible by digitization, which has changed how banks engage with their clients. Investigating the various uses of AI in the sector, including fraud detection, risk management, customer service, and marketing, is part of a project case study on the influence of AI and digitization on the banking business. Also, the advantages of digitization would be looked at, including improved client accessibility, convenience, and efficiency. The case study might go even deeper into the difficulties that banks confront when they adopt AI and digitization, including data protection issues, cybersecurity dangers, and the requirement for staff up. Ultimately, the project case study would shed light on how the banking industry is changing as a result of the adoption of AI and digitization, as well as what this transition means for banks, customers, and society at large.

## SCOPE OF THE STUDY

The scope of the research extends to identifying How AI is been used in banks. It deals with an in-depth study and analysis of the various ratios of technologies applied in Artificial Intelligence in the Banking sector, mainly to study the impact done by AI and digitalization in banking sector.

## Impact of AI in Banking

- **Improved customer experience:** AI-powered chatbots and virtual assistants can offer tailored customer service and assistance, allowing customers to receive prompt resolutions to their inquiries.
- **Efficiency gains:** AI and digitalization can automate certain banking procedures, including loan approvals, fraud detection, and customer onboarding, resulting in improved efficiency and cost savings.
- **Strengthened security:** Digitalization can be used to improve security by enabling two-factor authentication and leveraging biometric technologies like facial recognition to authenticate clients.
- **Predictive analytics:** Banks can use AI to analyse consumer data and obtain insights into client behavior and preferences, enabling them to offer customized services and products.
- **More convenient and accessible:** Customers can now access financial services through digital banking platforms from any location, at any time, and using any device, resulting in an increase in accessibility.
- **Displacement of jobs:** The adoption of AI and digitalization may result in the displacement of banking industry workers, particularly in positions like customer service and data input.
- **Regulatory difficulties:** The regulatory environment is changing quickly to keep up with technological advancement, which presents new difficulties for banks.
- **Ethics:** The use of client data for AI-powered services presents ethical questions, specifically around data protection and permission.
- **Savings:** For banks, adopting AI and digitalization can result in significance savings, especially in areas like operations and customer service

## BENEFITS OF ARTIFICIAL INTELLIGENCE IN BANKING

**Enhanced customer experience:** AI-powered chatbots and virtual assistants can offer tailored customer support, enabling round-the-clock client assistance, and assist users in finding information quickly and conveniently.

**Improved fraud detection:** Artificial intelligence (AI) can scan huge amounts of data and spot trends that might point to fraudulent conduct. Instead of using outdated techniques, this can aid banks in swiftly and correctly detecting fraud.

**Automated customer care:** Virtual assistants and chatbots powered by AI can answer common customer service questions, freeing up human personnel to concentrate on more difficult duties.

**Predictive analytics:** AI can examine client data to find trends and insights that can assist banks in providing customised goods and services.

**Cost-reductions potential:** Using AI in banking operations and customer service can result in significant cost savings for the industry.

**Better risk analysis and management:** AI can assist banks in doing this, which lowers the possibility of losses and boosts overall financial performance.

**Faster loan approval and rejection:** AI-powered algorithms can instantly accept or reject loan applications by analysing customer information and credit ratings. This accelerates the speed and effectiveness of the lending process.

**Marketing that is personalised:** AI can assist banks in providing customers with tailored advertising and promotions, boosting customer loyalty and engagement.

**Improved compliance:** By keeping an eye out for suspicious behaviour in transactions and making sure that clients adhere to regulations, AI can assist banks in staying in compliance with legal obligations.

Overall, applying AI to the banking industry can increase productivity, accuracy, and customer happiness while also lowering costs and reducing risk.

## Challenges of artificial intelligence

- The impact of artificial intelligence (AI) and digitalization on the banking sector has been significant, but it has also brought about a number of challenges. Here are some of the challenges that the banking sector faces as a result of AI and digitalization.

- **Cybersecurity risks:** The adoption of digital technology in banking has increased the risk of cyber-attacks, data breaches and other forms of cybercrime. Banks must invest in robust security measures to protect themselves and their customers from these threats.
- **Job displacement:** AI and digitalization have the potential to automate many routine tasks that were previously performed by humans. This could lead to job losses and a need for upskilling and reskilling the workforce.
- **Bias and discrimination:** AI systems are only as unbiased as the data they are trained on. If the data contains biases, the AI system will replicate them. This could result in discrimination against certain groups of customers, such as those from lower socio-economic backgrounds or certain ethnicities.
- **Privacy concerns:** With the increased use of digital technology, banks collect a large amount of customer data. Customers are concerned about how this data is being used and shared. Banks must be transparent about their data practices and comply with data protection regulations.
- **Technological infrastructure:** The adoption of AI and digitalization requires significant investment in technological infrastructure. Banks must ensure that their systems are capable of handling the increased workload and that they have the necessary expertise to maintain and develop these systems.
- **In conclusion,** the impact of AI and digitalization on the banking sector has been significant, but it has also brought about a number of challenges. Banks must address these challenges to fully realize the benefits of these technologies while also ensuring the safety, privacy, and security of their customers.

## 2. LITERATURE REVIEW

The banking sector has undergone significant changes with the introduction of artificial intelligence (AI) and digitalisation. According to various studies, AI and digitalisation have impacted the banking sector positively. They have led to improved customer experience, increased efficiency, reduced costs, and the development of new products and services. AI-powered chatbots and digital assistants have enabled banks to provide customers with instant responses to their queries and requests. Digitalisation has made it possible for customers to access banking services from anywhere, at any time, leading to increased convenience. Banks have also been able to reduce costs by automating routine tasks, such as data entry and compliance checks. Additionally, AI-powered risk management systems have enabled banks to identify potential risks and fraud more accurately, leading to better risk management. However, the implementation of AI and digitalisation has also presented challenges such as data quality and privacy concerns, regulatory compliance, and the need for a highly skilled workforce. It is essential for banks to manage these challenges and ensure that the benefits of AI and digitalisation are maximised while mitigating any negative impacts. Overall, the impact of AI and digitalisation in the banking sector is likely to continue to grow, leading to further improvements in customer experience, efficiency, and innovation. Some of brief LR and objectives are as follows

Authors	Title	Objectives	Research Methodology	Conclusion
Sabir et al.	Artificial Intelligence in Banking and Finance	To provide a comprehensive review of the applications of AI in banking and finance	Used academic databases to conduct an organized search related to AI and banking/finance	AI has transformed banking, enhancing decision-making, customer service, and risk management.
Wu et al.	Applications of artificial intelligence in the banking industry	To explore the applications of AI in the banking industry	Conducted a literature review and analyzed case studies of AI deployment in the Indian banking sector	AI can be utilized for credit scoring, fraud detection, customer service, and risk management in banking.

Ahmed et al.	Application of artificial intelligence in banking industry: A review	To review the potential applications of AI in the banking industry	Conducted a comprehensive literature search in various databases, screening relevant literature	AI can be applied for fraud detection, credit scoring, customer service, and risk management in banking.
Al-Titi et al.	The impact of artificial intelligence on the banking sector	To investigate the impact of AI on the banking sector	Conducted case studies to examine specific instances of AI usage in banking	AI has enhanced efficiency, customer experience, and risk management in banking.
Zhang et al.	Artificial intelligence in banking: A systematic literature review	To provide a comprehensive review of AI applications in banking	Conducted a systematic literature review, identified relevant articles, and categorized them based on AI applications	AI can enhance customer service, fraud detection, risk management, and decision-making in banking.
Tsai et al.	The adoption of artificial intelligence in the banking industry	To investigate the adoption of AI in the banking industry	Conducted a survey among banking professionals in Taiwan using a questionnaire	AI adoption in banking is low due to challenges like data privacy and regulatory compliance.

### 3. RESEARCH METHODOLOGY & OBJECTIVES OF THE STUDY

#### RESEARCH METHODOLOGY

Research methodology is a crucial aspect of any study, and the same applies to the study on impact of artificial intelligence and digitalization in the banking sector

#### RESEARCH METHODS

##### DATA SOURCE

The data collected using both primary and secondary data.

##### Primary data:

The primary data was collected from the respondents with the help of google form for the questionnaire.

##### Secondary data:

Secondary data are collected from internet

#### TOOLS USED

**Data collection:** Primary data was collected through the questionnaire by distributing questionnaire among employees.

**Data analysis:** It is done by using percentage analysis and linear regression

**Data presentation:** Data is presented using table, graph, and diagrams.

#### SAMPLE DESIGN

**Sampling size:** Here the sample size collected for this study is 50 **Sampling area:** Perinthalmanna municipality

#### OBJECTIVES OF THE STUDY

- To find out impact of stress on employees' performance
- To find out factors of stress among employ

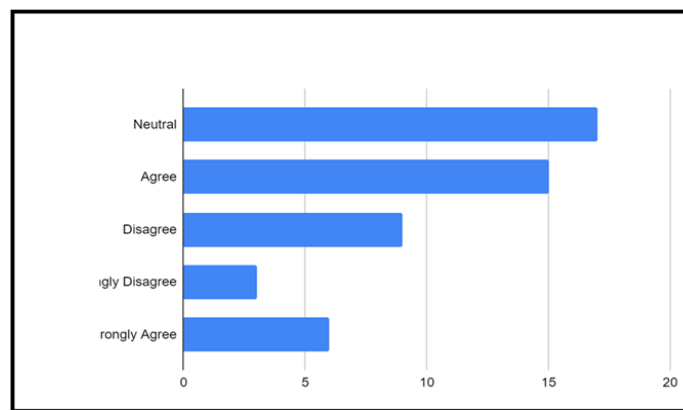
➤ To study various strategies taken by management to reduce stress

4. **DATA ANALYSIS AND INTERPRETATION**

**TABLE 4.1 I am well aware of the integration of AI and digitalization in the banking sector.**

<b>Opinion</b>	<b>No of respondents</b>	<b>Percentage</b>
Strongly disagree	3	6%
Disagree	5	10%
Neutral	9	38%
Agree	15	30%
Strongly agree	8	16%
Total	50	100%

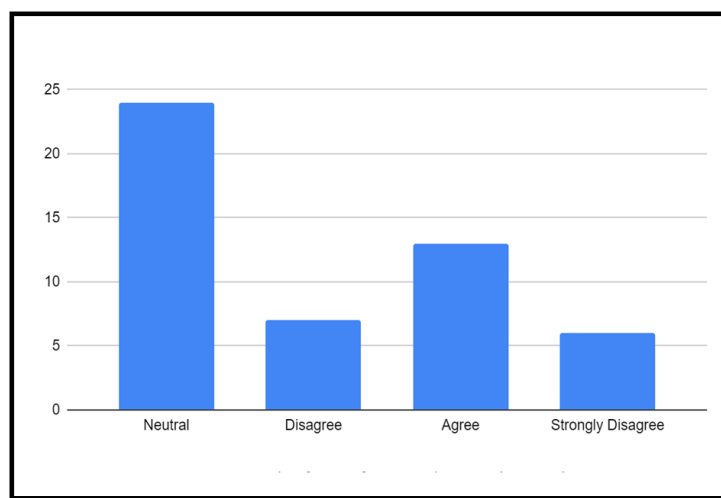
**GRAPH 4.1 I am well aware of the integration of AI and digitalization in the banking sector**



**TABLE 4.2 I frequently use digital banking services such as mobile banking apps or online banking platforms.**

Opinion	No of respondents	Percentage
Strongly disagree	6	12%
Disagree	7	14%
Neutral	24	48%
Agree	13	26%
Strongly agree	0	0%
Total	50	100%

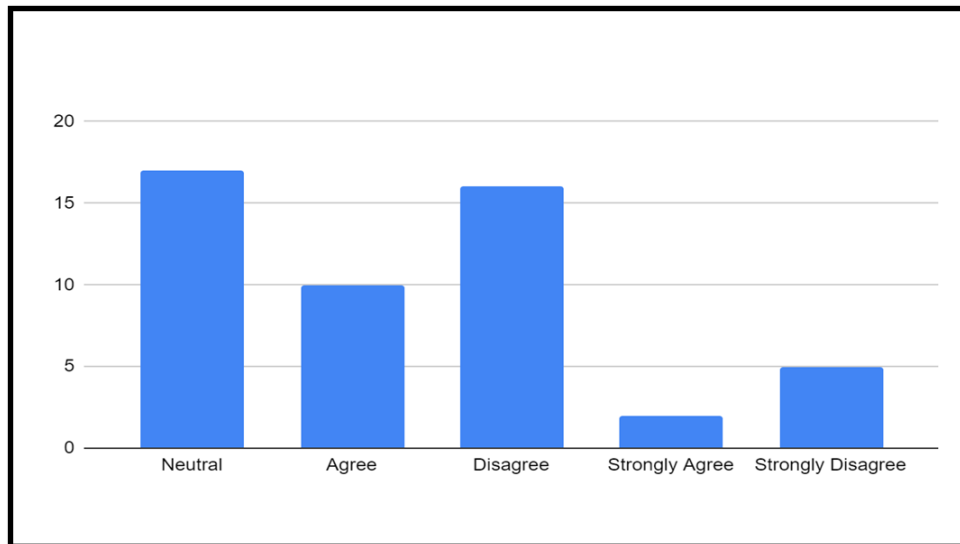
**GRAPH 4.2 I frequently use digital banking services such as mobile banking apps or online banking platforms.**



**TABLE 4.3 I have encountered significant challenges or concerns regarding the security of my personal and financial data with the increasing use of AI and digitalization in banking**

Opinion	No of respondents	Percentage
Strongly disagree	5	10%
Disagree	16	32%
Neutral	17	34%
Agree	10	20%
Strongly agree	2	4%
Total	50	100%

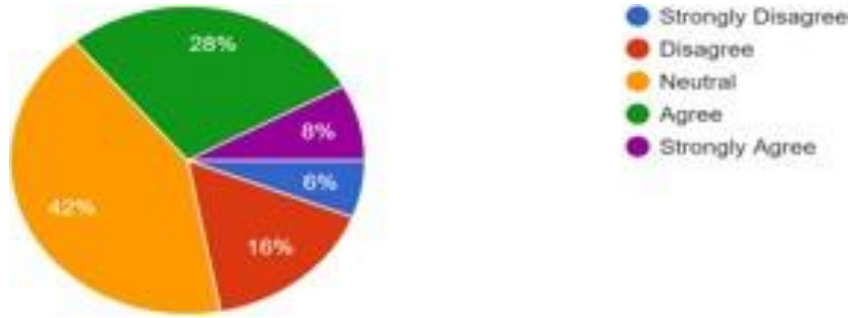
**GRAPH 4.3 I have encountered significant challenges or concerns regarding the security of my personal and financial data with the increasing use of AI and digitalization in banking**



**TABLE 4.6 AI and digitalization in banking have led to a more personalized banking experience tailored to individual needs.**

Opinion	No of respondents	Percentage
Strongly disagree	3	6%
Disagree	8	16%
Neutral	21	42%
Agree	14	28%
Strongly agree	4	8%
Total	50	100%

**GRAPH 4.6 AI and digitalization in banking have led to a more personalized banking experience tailored to individual needs.**

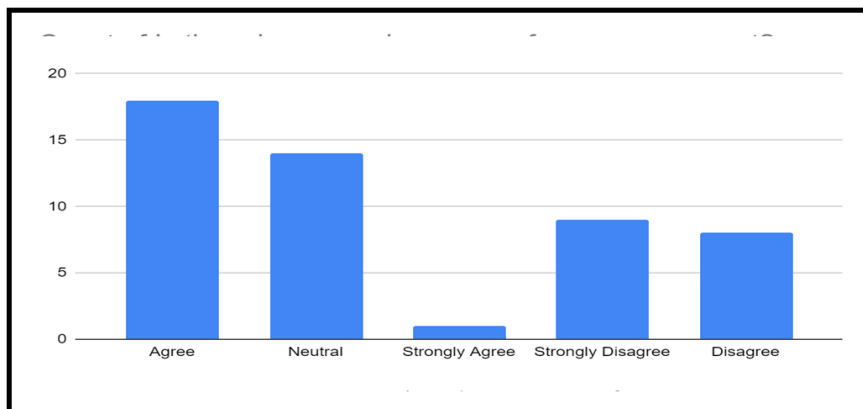




**TABLE 4.7" I am comfortable with the level of automation in banking services provided by AI algorithms**

Opinion	No of respondents	Percentage
Strongly disagree	9	18%
Disagree	8	16%
Neutral	14	28%
Agree	12	36%
Strongly agree	1	2%
Total	50	100%

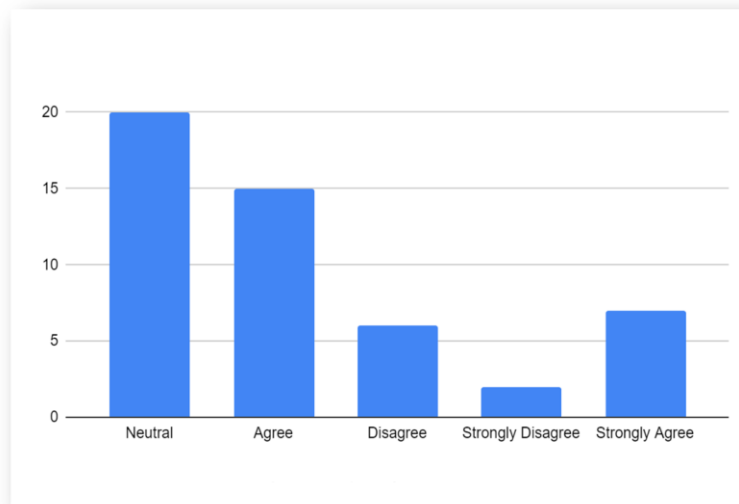
**GRAPH 4.7" I am comfortable with the level of automation in banking services provided by AI algorithms**



**TABLE 4.8 I believe that traditional brick-and-mortar bank branches will decline significantly with the rise of AI-powered digital banking solutions.**

Opinion	No of respondents	Percentage
Strongly disagree	2	12%
Disagree	10	40%
Neutral	15	30%
Agree	7	14%
Strongly agree	6	4%
Total	50	100%

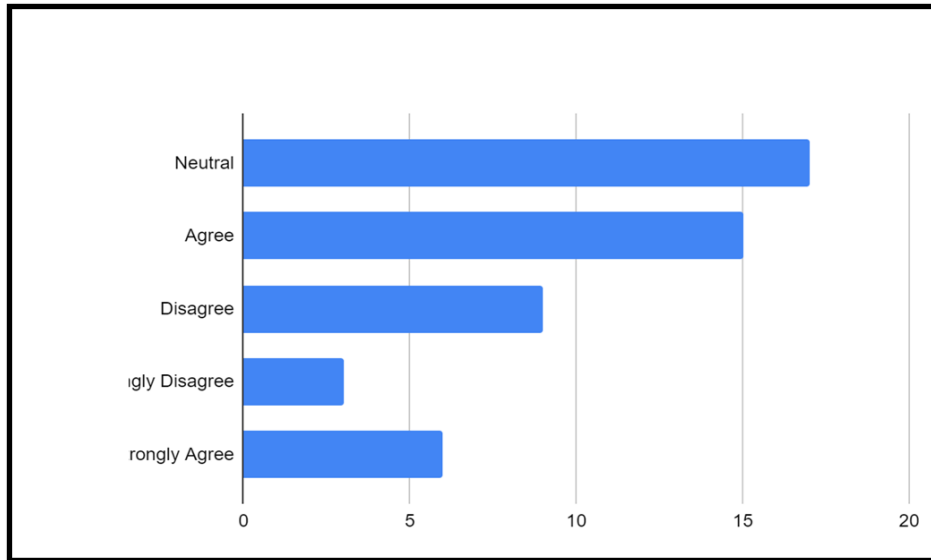
**GRAPH 4.8 "I believe that traditional brick-and-mortar bank branches will decline significantly with the rise of AI-powered digital banking solutions."**



**TABLE 4.9 I have utilized AI-driven financial management tools or robo-advisors for investment decisions or financial planning.**

Opinion	No. of respondents	Percentage
Strongly disagree	3	6%
Disagree	9	18%
Neutral	17	34%
Agree	15	30%
Strongly agree	6	12%
Total	50	100%

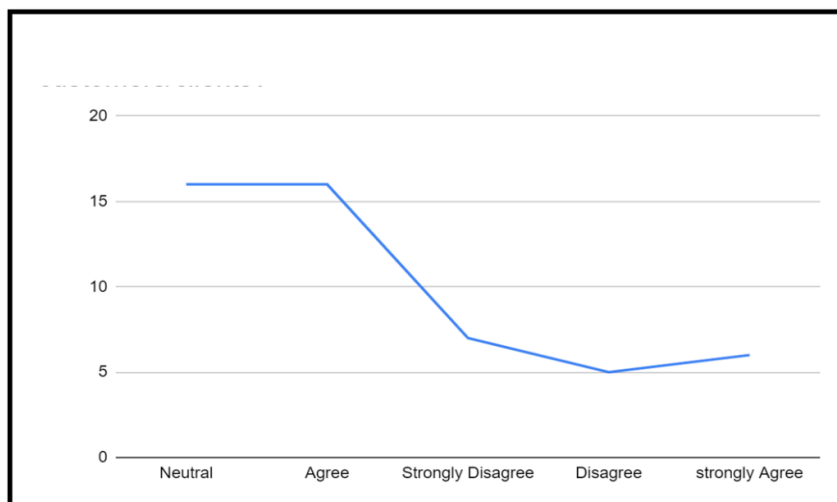
**GRAPH 4.9 I have utilized AI-driven financial management tools or robo-advisors for investment decisions or financial planning.**



**TABLE 4.10 I have utilized AI-driven financial management tools or robo-advisors for investment decisions or financial planning.**

Opinions	No of respondents	Percentage
Strongly disagree	7	14%
Disagree	5	10%
Neutral	16	32%
Agree	16	32%
Strongly agree	6	12%
Total	50	100%

**GRAPH 4.10 I have utilized AI-driven financial management tools or robo-advisors for investment decisions or financial planning.**



**FINDINGS**

- Through enhancing decision-making, customer service, and risk management, artificial intelligence (AI) has revolutionized the banking industry.
- Artificial intelligence (AI) can be applied to the banking industry for risk management, fraud detection, credit scoring, and customer support.
- The banking industry has benefited from AI's improvements to productivity, client satisfaction, and risk management.
- Due to issues like data privacy and regulatory compliance, adoption of AI in the banking sector is still very limited.
- The banking sector in India has seen a transformation because to digitalization which has enhanced efficiency and customer service.
- The Indian banking industry has benefited from digitalization in terms of productivity, client satisfaction, and accessibility to financial services.
- The Indian banking sector has undergone a radical change because to digitalization, which has increased operational effectiveness and improved customer service.
- AI has the ability to completely change the banking industry by enhancing risk management, customer service, and decision-making.
- A result of digitalization in the banking industry, digitization has increased productivity, client satisfaction, and financial services accessibility.
- For AI to be successfully implemented in the banking industry, issues including data protection, compliance with regulations, and ethical issues must be resolved.

### **Limitation**

- Limited access to proprietary and confidential data.
- Lack of standardization in data collection and analysis methods.
- Rapidly evolving technology makes it difficult to keep up with the latest developments.
- Complexity of the technology can limit the scope of research.
- Ethical concerns around privacy, security, and discrimination may limit the ability to obtain ethical approval for the research.
- Difficulty in measuring the impact of AI and digitalization on the banking sector

### **Conclusion**

Based on the analysis of the primary data collected, it can be concluded that the impact of artificial intelligence and digitalization on the banking sector is significant. The use of AI and digital technologies has enabled banks to enhance their operations and improve customer experience by providing personalized and efficient services. These technologies have also enabled banks to detect fraud and manage risks more effectively. Furthermore, the adoption of AI and digitalization has led to the automation of various banking processes, resulting in cost savings for banks. However, the implementation of these technologies has also raised concerns about data security and privacy.

Overall, when it comes to impact Of AI and digitalization in banking sector it can be concluded that the benefits of AI and digitalization outweigh the risks, and banks must continue to embrace these technologies to remain competitive in the market. It is clear from the project case study on the effects of artificial intelligence (AI) and digitization on the banking sector that these two factors have significantly changed the banking sector. The implementation of AI technology has improved banking operations' efficiency, accuracy, and cost-effectiveness. Banking services are now more readily available, practical, and safe for customers thanks to digitization. Enhanced fraud detection and prevention, effective risk management, targeted marketing, and improved customer experience are a few of the major advantages of AI and digitization for the banking sector. The use of these technologies is not without its difficulties, though, including the requirement for qualified workers, security and privacy concerns, and the possibility of jobdisplacement. it can be said that digitization and artificial intelligence (AI) have had a profound impact on the banking sector.

Banks that successfully adopt these technologies into their business operations will likely be more competitive and better equipped to cater to changing customer.

#### REFERENCES:

1. Accenture. (2020). Artificial Intelligence: Reshaping the Banking Industry. Retrieved from <https://www.accenture.com/us-en/insights/financial-services/artificial-intelligence-banking-industry-report>.
2. Bank for International Settlements. (2019). Big tech in finance: Opportunities and risks. Retrieved from [https://www.bis.org/publ/qtrpdf/r\\_qt1909f.htm](https://www.bis.org/publ/qtrpdf/r_qt1909f.htm).
3. Capgemini. (2021). World Retail Banking Report 2021.
4. Retrieved from
5. <https://www.capgemini.com/research/world-retail-banking-report-2021/>.
6. Deloitte. (2019). The Future of Work in Financial Services: How Disruptive Innovations Are Reshaping the Way Financial Services Employees Work. Retrieved from <https://www2.deloitte.com/us/en/pages/financial-services/articles/future-of-work-in-financial-services.htm...>
7. McKinsey & Company. (2019). The Global Banking Industry in Transformation: The Impact of Digitalization, Fintech, and Geopolitical Turmoil. Retrieved from <https://www.mckinsey.com/industries/financial-services/our-insights/the-global-banking-industry-in-transformation-the-impact-of-digitalization-fintech-and-geopolitical-turmoil>.
8. PwC. (2021). Global FinTech Report 2021. Retrieved from <https://www.pwc.com/gx/en/industries/financial-services/fintech/global-fintech-report-2021.html>.
9. S&P Global Market Intelligence. (2020). Artificial Intelligence in Banking: Unlocking
10. Opportunities, Managing Risks. Retrieved from <https://www.spglobal.com/marketintelligence/en/documents/artificial-intelligence-in-banking-unlocking-opportunities-managing-risks.pdf>.
11. World Economic Forum. (2019). The New Physics of Financial Services: Understanding how artificial intelligence is transforming the financial ecosystem. Retrieved from <https://www.weforum.org/reports/the-new-physics-of-financial-services-understanding-how-artificial-intelligence-is-transforming-the-financial-ecosystem>.
12. World Bank. (2018). The Future of Work in the Financial Sector. Retrieved from <http://documents.worldbank.org/curated/en/148691523470784097/pdf/The-Future-of-Work-in-the-Financial-Sector.pdf>.
13. Capgemini Research Institute. (2020). Conversational Banking: Understand and leverage the power of AI-powered conversations. Retrieved from [https://www.capgemini.com/wp-content/uploads/2020/07/Conversational-Banking\\_2020.pdf](https://www.capgemini.com/wp-content/uploads/2020/07/Conversational-Banking_2020.pdf).
14. EY. (2021). How will AI transform the future of banking? Retrieved from [https://www.ey.com/en\\_us/banking-capital-markets/how-will-ai-transform-the-future-of-banking](https://www.ey.com/en_us/banking-capital-markets/how-will-ai-transform-the-future-of-banking).
15. Harvard Business Review. (2019). AI can enhance financial services, but also poses risks. Retrieved from <https://hbr.org/2019/12/ai-can-enhance-financial-services-but-also-poses-risks>.
16. Oliver Wyman. (2020). Artificial Intelligence in Financial Services. Retrieved from <https://www.oliverwyman.com/content/dam/oliver->