PERSPECTIVES OF BANK EMPLOYEES ON AI IMPLEMENTATION IN BANKS

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Abstract

Artificial intelligence (AI) in banking plays a pivotal role by enhancing data analysis, predicting trends and fraud risks, and improving customer engagement. AI empowers various banking sectors including retail, commercial, and investment banking to deeply comprehend market dynamics and customer behaviours, analyse digital interactions, and offer engagement that resembles human intelligence and interaction but on a much larger scale. While AI technologies promise to enhance efficiency, security, and customer experience, the implementation and impact of these technologies can vary significantly across different regions and institutions. While these advancements have enabled customers to avail most of the banking services at their fingertips anytime, anywhere, it has also come with a cost for the banking sector. Hence an attempt is made to analyse the perspectives of bank employees on AI implementation in banks. This study is based on both primary and secondary data. The collected primary data were edited, tabulated and analysed for the purpose of presentation. Percentage analysis, Likert's scaling technique and weighted ranking technique have been applied to analyse the primary data. Secondary data have been collected from various journals, books and websites.

Key Words: Artificial Intelligence, Machine learning, Automation, Banking Systems, Virtual Assistants, Chat bot

Introduction

Artificial intelligence (AI) is an increasingly important technology for the banking sector. When used as a tool to power internal operations and customer-facing applications, it can help banks improve customer service, fraud detection and money and investment management. To stay ahead of technology trends, increase their competitive advantage, and provide valuable services and better customer experiences, financial services firms like banks have embraced digital transformation initiatives. The advent of AI technologies has made digital transformation even more important, as it has the potential to remake the industry and determine which companies thrive.

Statement of the Problem

Digital disruption is redefining industries and changing the way businesses function. Every industry is assessing options and adopting ways to create value in the technology-driven world. The banking sector is witnessing ground breaking changes: foremost being the rise in customer-centricity. Tech-savvy customers, exposed to advanced technologies in their day-to-day lives, expect banks to deliver seamless experiences. To meet these expectations, banks have expanded their industry landscape to retail, IT and telecom to enable services like mobile banking, e-banking and real-time money transfers. While these advancements have enabled customers to avail most of the banking services at their fingertips anytime, anywhere, it has also come with a cost for the banking sector. Hence an attempt is made to analyse the perspectives of bank employees on AI implementation in banks.

Scope of the Study

The scope of the present study is confined to know about the AI applications in banks, recognise the reasons for implementing AI in banks, analyse the opinion of the respondents about the benefits of adopting AI in banks and assess the challenges faced by the respondents while implementing AI in banks.

Objectives

The main objectives of the study are
➢ To know about the AI applications in banks.
➢ To recognise the reasons for implementing AI in banks.
➢ To analyse the opinion of the respondents about the benefits of adopting AI in banks.
➢ To assess the challenges faced by the respondents while implementing AI in banks.
➢ To offer suggestions on the basis of findings.

Review of Literature

An attempt is made to review the available research articles related to this topic.

Geetha (2019) examined the Role of artificial intelligence (AI) in the Banking and financial services in Chennai to oversee the application of artificial intelligence methodology in the banks as well as responses from the clients or consumers. The objective of the study is to Study about Banking and Financial Services for using Artificial Intelligence is to offer customized Product. It can be found that Artificial Intelligence in Banking and Financial Services satisfying their clients or consumer's needs. Banking and Financial Services consumers have good awareness about Artificial Intelligence applications.

Anil Malali& Gopalakrishnan(2020) underwent a study entitled on "Application of Artificial Intelligence and Its Powered Technologies in the Indian Banking and Financial Industry: An Overview". They examine the dynamics of AI ecosystems in the banking and financial industry and how it is fast becoming a most important disrupter by looking at some of the critical unsolved problems in this area of business. They found that though the usage of AIpowered technologies in the budding stage the way in which it is functioning leads to the growth and development of banking and the financial sector it could be also be anticipated that the prospects of AI-powered technologies would lead to minor losses and offer better trading with utmost customer satisfaction.

Tejinder Singh &Nitin Pathak (2020) has examined the emerging role of artificial intelligence in Indian banking sector. Secondary data has been used by them to carry on their study. They found that despite of so many challenges, banks in India have made tremendous progress in the adopting AI.

KrutikaSawant, HarshvardhanSonietal., (2023) undertakes a study on "A Study Of Ai In Banking System". The objective of the study is to analyze the key applications of AI in banking and impact on its operations and performance and identify the challenges associated with AI adoption in banking. It has been identified that banks have major challenge of acquiring huge amount data of every customer because for the purpose of training AI

algorithms, an organization must spend in the production and storage of substantial volumes of data. The quantity and quality of data that these businesses have captured or retained are connected to the AI dividends that have been generated.

Methodology

This study is based on both primary and secondary data. Primary data have been collected from 80 bank employees (as per the records from Virudhunagar District Lead Bank, two leading public sector banks and two private sector banks have been chosen namely State Bank of India, Indian Overseas Bank, Tamil Nad Mercantile Bank and Karur Vysya Bank) working in Virudhunagar by applying census method of sampling. The collected data were edited, tabulated and analysed for the purpose of presentation. Percentage analysis, Likert's scaling technique and weighted ranking technique have been applied to analyse the data. Secondary data have been collected from various journals, books and websites.

AI Applications in Banks

AI can bring wide range of applications from front office to mid- and back office processes in banks. The following diagram depicts the various AI applications in banking sector.
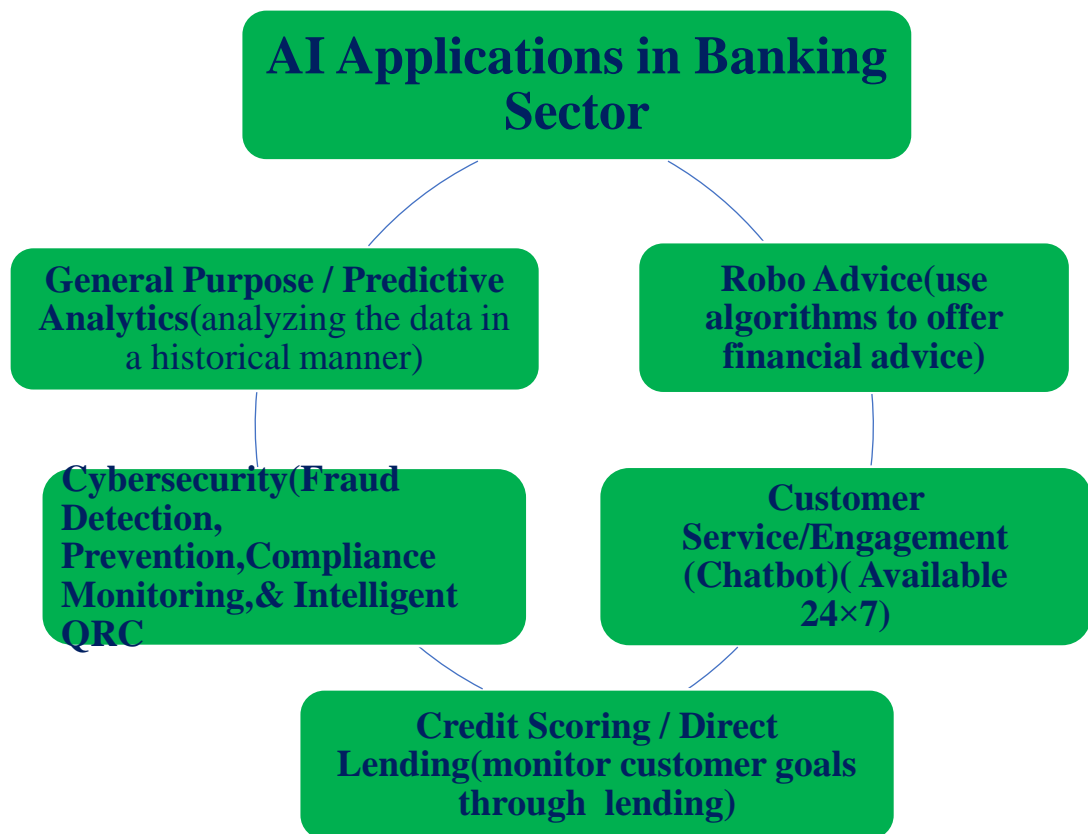
Demographic profile of the Respondents

Socio economic variables such as gender, age, educational qualification, annual income, working experience and designation influence the usage of AI among the bank employees. Hence, these variables of the respondents were collected and tabulated in Table 1.

Table 1
Socio Economic Profile of the Respondents

Socio Economic Variables	Number of Respondents	Percentage to Total

Gender	Male	49	61.25
	Female	31	38.75
Age (in years)	21-30	14	17.50
	31-40	30	37.50
	41 – 50	19	23.75
	Above 50	17	21.25
Educational Qualification	UG	35	43.75
	PG	21	26.25
	Professional	24	30.00
Annual Income (in₹.)	Below 3,00,000	16	20.00
	3,00,001 – 5,00,000	26	32.50
	5,00,001 – 7,00,000	19	23.75
	Above 7,00,000	19	23.75
Working Experience (in Years)	Less than 10	16	20.0
	11 to 20	27	33.75
	21 to 30	17	21.25
	Above 30	20	25.00
Designation	Cashier	66	82.50
	Assistant Manager	7	8.75
	Branch Manager	7	8.75

Source: Primary data

Out of 80 respondents surveyed, 49(61.25%) are male; 30(37.5%) are in the age group of 31-40 years; 35 (43.75%) are under graduate degree holders;26(32.5%) have the annual income of ₹.3,00,001to Rs.5,00,000;27 (33.75%) have working experience of 11 to 20 yearsand 66(82.5%) are designated as cashier.

Reasons for implementing AI in banks

There are number of reasons behind the incorporation of Artificial Intelligence (AI) in banking sector. AI enhances customer service through personalized experiences and 24/7 support, significantly improving fraud detection and security measures. Reasons include heavy competition in the banking, ensuring the operational efficiencies, escalating employee efficiency, increase the profitability, effective decision making, need for customized solutions and demand for process-driven services. These reasons were given to the respondents and they were asked to rank these reasons as per their preference. Weighted Ranking Technique has been applied to analyse their responses and the results were given in Table 2.

Table 2
Reasons for implementing AI in banks

Reasons	I	II	III	IV	V	VI	VII	Total Score	Mean Score	Rank
Ensuring operational efficiencies	32(224)	17(102)	11(55)	8 (32)	7 (21)	3 (6)	2 (2)	442	5.53	I
Heavy competition among banks	13(91)	5 (30)	7 (35)	9 (36)	16 (48)	11 (22)	19 (19)	281	3.51	VI
Demand for process-driven services	2(14)	4 (24)	5 (25)	9 (36)	13 (39)	16 (32)	31 (31)	201	2.51	VII

Increases profitability	27 (189)	15 (90)	16 (80)	10 (40)	3 (9)	4 (8)	5 (5)	421	5.26	II
Effective decision making	14 (98)	8 (48)	9 (45)	11 (44)	13 (39)	12 (24)	13 (13)	311	3.89	IV
Need for customized solutions	21 (147)	8 (48)	18 (90)	12 (48)	6 (18)	4 (8)	11 (11)	370	4.63	III
Escalating employee efficiency	7 (49)	9 (54)	6 (30)	14 (56)	17 (51)	13 (26)	29 (29)	295	3.69	V

Source: primary data

Figures in Parenthesis denote points

It is inferred from Table 2 that the main reason to go for AI in Banks is ensuring operational efficiencies. This reason secures first rank with the mean score of 5.53 points. The reason increases profitability gets the second rank with the mean score of 5.26 points. The reason need for customized solutions gets the third rank with the mean score of 4.63 points. The reasons effective decision making, escalating employee efficiency, heavy competition among banks and demand for process-driven services secure fourth, fifth, sixth and seventh ranks respectively.

Benefits of Adopting AI in Banks

Implementing Artificial Intelligence (AI) in the banking sector is revolutionizing the industry, offering innumerable benefits that enhances both customer experience and operational efficiency. AI technology is transforming traditional banking processes, providing advanced solutions for customer service, fraud detection, data analysis, and regulatory compliance. This integration not only streamlines operations but also drives innovation, allowing banks to offer personalised and secure services to their customers. The benefits of adopting AI were given to the respondents and were asked to state their opinion. To quantify their opinion Likert's five-point scaling technique has been used and the results were shown in Table 3.

Table 3
Benefits of Adopting AI in Banks

Benefits	Opinion of Employees in Banks					Total Score	Mean Score	Rank
	Strongly Agree	Agree	No opinion	Dis agree	Strongly Disagree			
Investment Automation	20 (100)	29 (116)	14 (42)	17 (34)	6 (6)	298	3.73	IV
Improved Fraud detection	34 (170)	20 (80)	13 (39)	8 (16)	5 (5)	310	3.88	I
Improved Regulatory Compliance	33 (165)	12 (48)	17 (51)	13 (26)	6 (6)	296	3.70	III
Automated Customer Service	32 (160)	19 (76)	13 (39)	12 (24)	4 (4)	303	3.79	II
Reduced operational costs	27 (135)	20 (80)	13 (39)	9 (18)	11 (11)	283	3.54	V

Source: Primary data

Figures in Parenthesis denote points

From the above table it is clear that out of 80 respondents surveyed, 34 respondents strongly agree the statement 'Improved Fraud detection'; 20 respondents agreed that the usage of AI reduced the operational cost and 33 respondents strongly agree that the usage of AI improve the regulatory compliance.

Challenges faced by the respondents while implementing AI in banks

Generative AI is a believable new tool in the bank's arsenal. It can take more of the burden for customer servicing. The challenges faced by the respondents while implementing AI in banks include lack of clear strategy for AI, weak core technology and data backbone, outmoded operating models and talent strategies, ethical and legal concerns, algorithmic bias and fairness, security risks and resistance to change. These challenges were given to the respondents and they were asked to rank these challenges. Weighted Ranking Technique has been applied to analyse their responses and the results were given in Table 4.

Table 4
Challenges while implementing AI in Banks

Challenges	I	II	III	IV	V	VI	VII	Total Score	Mean Score	Rank
Resistance to Change	31 (217)	16 (96)	12 (60)	8 (32)	7 (21)	3 (6)	3 (3)	435	5.44	I
Ethical and Legal Concerns	16 (112)	13 (78)	7 (35)	9 (36)	5 (15)	19 (38)	16 (16)	330	4.13	VI
Lack of Clear Strategy for AI	13 (91)	9 (54)	5 (25)	4 (16)	16 (48)	31 (62)	2 (2)	298	3.73	VII
Security Risks	29 (203)	13 (78)	14 (70)	13 (52)	6 (18)	3 (6)	2 (2)	429	5.36	II
Weak Core Technology and Data Backbone	25 (175)	14 (84)	9 (45)	7 (28)	10 (30)	8 (16)	7 (7)	385	4.81	III
Outmoded Operating Models and Talent Strategies	24 (168)	9 (54)	15 (75)	11 (44)	7 (21)	5 (10)	9 (9)	381	4.76	IV
Algorithmic Bias and Fairness	17 (119)	12 (72)	15 (75)	13 (52)	10 (30)	6 (12)	7 (7)	367	4.59	V

Source: Primary data
Figures in Parenthesis denote points

It is inferred from Table 4 that the main challenge faced by the respondents is 'Resistance to Change' by the customer. This challenge secures the first rank with the mean score of 5.44 points. The challenge 'Security Risks' gets the second rank with the mean score of 5.36 points. The challenge 'Weak Core Technology and Data Backbone' gets the third rank with the mean score of 4.81 points. 'Outmoded Operating Models and Talent Strategies', 'Algorithmic Bias and Fairness' 'Ethical and Legal Concerns' and 'Lack of Clear Strategy for AI'' secures fourth, fifth, sixth and seventh rank respectively.

Suggestions

In the light of inferences of the study, the following measures are to be taken to increase the usage of AI in banking.

- Training should be given to the bank employees also to rectify the technical issues even though these should be rectified by bank back office employees
- Workshops and seminars should be conducted by the banks to inform employees about the benefits of AI, addressing fears and misconceptions.

- Strengthening should be made by the banks in cyber security measures to prioritize data privacy.

Conclusion

The integration of AI in banking offers significant potential to enhance efficiency, customer satisfaction, and security. By addressing challenges such as resistance to change through education and structured implementation, banks can harness the benefits of AI. This transformative technology can streamline operations, provide personalised services, and improve risk management. Ultimately, embracing AI will position banks to better serve their customers and remain competitive in an evolving financial landscape.

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