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AN EFFECTIVE ROLE OF ARTIFICIAL INTELLIGENCE IN BANKING SECTOR WITH SPECIAL REFERECE TO PRIVATE BANKS

J. SHEMA.,
MBA., M.Phil.,
Research Scholar, Department of Management Studies, Marudhar Kesari Jain College for Women, Vaniyambadi, Affiliated to Thiruvalluvar University, Serkadu, Vellore, Tamil Nadu, India, Ph: 9442965650, Email: shemajeeva@gmail.com

Dr. G. DEEPALAKSHMI,
M.B.A., MMM., M.Phil., Ph.D., SET,
Head, Supervisor, & Assistant Professor, Department of Management Studies, Marudhar Kesari Jain College for Women, Vaniyambadi, Affiliated to Thiruvalluvar University, Serkadu, Vellore, Tamil Nadu, India, Ph: 9486914774, Email: hod.bba@mkjc.in

ABSTRACT

This paper focuses on Role of Artificial Intelligence in Banking sectors. AI which plays an important role in banking sectors. The main motive of giving AI is to get the customer support and satisfaction. By giving AI technology in banking we can easily access the services and communicate with the customers. AI is the mostly used in the banking industries to understand the customer preferences and to ensure that customers are satisfied with the services which they receive from the banks and also helps the bankers to communicate to the customers. By AI technology both the customers and bankers are benefited. AI will helps to give corporate banking (i.e) Automated tasks, Boosts customer service support through Chat bots, identify the fraudulent activities, and helps to prediction of market trends. The samples were collected from 100 respondents who use banks. A structured questionnaire is framed to collect the primary data of customers have toward AI Technologies

Keywords: Artificial Intelligence, Chat bots, Communication, Fraud, Market trends.

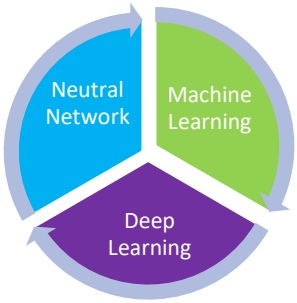
INTRODUCTION

What is AI?

Artificial Intelligence is the simulation of human intelligence in robots that are designed to think and behave like people is known as artificial intelligence (AI). The process of making a computer, robot under computer control or piece of software think intelligently like a human mind is known as artificial intelligence. Artificial Intelligence is achieved via the examination of cognitive processes and the patterns found in the human brain. These investigations' outputs include the creation of intelligent systems and software. It's mainly focus on the Cognitive talents include things like learning, reasoning, problem-solving, perception, and language understanding. To put it simply, AI systems combine sophisticated, iterative processing algorithms with big data sets. AI is able to learn from the features and patterns in the examined data thanks to this combination. Every time a cycle of data processing is carried out by an AI system

AI in Various Fields:

In computer science, artificial intelligence is currently the most popular area. But because everything is developing so quickly due to new research and technology, it can be difficult to distinguish between things. Additionally, AI encompasses a wide range of domains, each with unique algorithms. Because AI is a synthesis of several different domains rather than a single one, it is crucial to understand this. The ability to program computers to perform tasks that would normally need human intelligence is known as artificial intelligence or AI for short. Machine learning (ML) and neural networks (NN) are the two main subfields of artificial intelligence (AI). Each of these artificial intelligence subfields has its own techniques and algorithms for problem-solving.



Machine Learning:

Through the use of data and experience, machine learning (ML) enables computers to perform better on certain tasks or during decision-making. For this, ML makes use of probability theory and statistics. Algorithms are used in machine learning to analyze data, draw conclusions from it, and do so without the need for explicit programming. Algorithms for machine learning are frequently divided into supervised and unsupervised categories.

Deep Learning:

Deep learning is a branch of machine learning that achieves cutting-edge accuracy in language translation, speech recognition, and object detection by utilizing multi-layered artificial neural networks. One of the key technologies underlying autonomous vehicles is deep learning, which allows machines to analyze vast volumes of complex data and recognize faces in images or videos.

Neural Networks

Neural networks are composed of layers of interconnected nodes called "neurons" that have mathematical functions built in to interpret incoming input and forecast an output value. Neural networks are inspired by the biological neurons found in the human brain. Artificial neural networks learn via observation, in the same way as humans do by watching their parents, teachers, and friends.

AI in Banking Sectors:

AI is utilized in banking to improve client experiences, security, and efficiency. By automating repetitive processes like fraud detection and data entry, it lowers operating expenses. AI-powered chat bots offer round-the-clock client service. In order to improve security and personalize services, machine learning algorithms examine client data and look for anomalous transactions. AI is used by credit scoring models to provide a more accurate creditworthiness assessment. AI optimizes

investment strategies and helps with portfolio management as well. Moreover, natural language processing (NLP) facilitates the analysis of user input to improve product development. All things considered, AI transforms banking by lowering risks, optimizing processes, and providing clients with specialized services.

Benefits of AI used in Banks:

Automated Investment

Numerous companies, like UBS and ING, have created AI systems that automate investment processes. This is a dangerous and unexplored area for finding new opportunities. Better modeling provided by this technology is opening up new possibilities even if it is always under human observation.

Enhanced Fraud detection

The fact that AI can handle enormous volumes of data and spot fraud far more quickly than humans is not surprising. They can easily complete such repeated activities by applying various algorithms without making mistakes.

Enhanced Occupancy with Regulations

Governments utilize their regulatory authority to ensure that no financial crimes are being committed by clients and that banks are avoiding large-scale defaults. AI has been useful in helping banks comply with rules to ensure that no unlawful behavior is occurring..

Computerized Customer Support

With a chat bot on hand around-the-clock, clients won't have to stress about making it to the bank on weekends, holidays, or before it closes. It also implies that a well-trained chatbot will be able to resolve a customer's issue far more quickly than a real customer support representative.

Lower running expenses

Even though the banking sector operates primarily digitally, certain tasks cannot be automated and still need human assistance. Human error can result in significant operating costs and dangers for banks. Although these procedures cannot be automated, rule-based digital operations that need

REVIEW OF LITERATURE

Hickam Sadok (2022), This study outlined that banking became an important aspect of our day to day lives, it’s also a crucial part of our life. The extent of artificial intelligence in customer experience and robot technology automation in the Indian banking sector are the main focus of the current analysis. The majority of client satisfaction with related criteria indicated a proper association with bank's AI.

Saloni Tripathi (2022), This study outlined that the characteristics of AI platforms in the banking sector and they are becoming disruptor. By using the current technology the banks are facing lots of problems, instead of using current technology banks will uses intelligence algorithms for replacing human labour. The companies should innovate AI practices into their business to remain competitive.

Dr. Munish Sabharwal (2014), this study will look at the many applications of AI-based technologies used by Indian banks. Artificial intelligence (AI) is used by most Indian banks for automated check book reordering, credit ratings, staff performance appraisals, and portfolio analysis. In order to make operations more simpler, Indian banks must begin implementing AI-based technology for increasingly sophisticated uses like investment forecasting, damage/risk assessment, employee performance evaluation, and signature verification.

OBJECTIVES OF THE STUDY

To study about the uses of Artificial Intelligence (AI) which provided by private banks
To identify the customer perception on Artificial Intelligence (AI) is implemented by private banks
To identify the challenges/ opportunities associated with the Artificial Intelligence (AI) adoption in private banks

To evaluate the key applications where the Artificial Intelligence (AI) is being used by the private banks

To analyze the future outlook of Artificial Intelligence (AI).

STATEMENT OF THE PROBLEM

The main aim to conduct this study is to analyze how the Artificial Intelligence techniques are used by banking sectors. It helps to identify how customers are aware of AI technology. The main problem of this study is that most of the customers are unaware of AI technology. The banks are using more AI related applications to reduce human works but most of the customers are unaware of the applications used by the AI. Using of AI technology which helps to improve the efficiency of works and improves the number of customers through customer satisfaction. This study helps to find the gap between the AI technology and the Traditional method of banks.

NEED FOR THE STUDY

To enhance the efficiency by providing advanced AI applications for banking transactions

To increase the customer satisfaction by providing efficient security and privacy system

It helps for customer support by providing AI chat bots. It is available 24/7/365 days

SCOPE OF THE STUDY

Facial recognition for the first transaction, micro-expression analysis with virtual loan officers, biometric authentication and authorization, machine learning to identify fraud and cybercrimes, and real-time transaction analysis to stop fraud are a few areas where artificial intelligence is being applied in banking services. By using AI to create intelligent offerings and smart servicing that can

easily integrate into partner ecosystems, banks can fulfill the increasing demands of their customers. By employing artificial intelligence to direct consumer contact, banks are already improving their client relationships and cutting expenses. In future AI technology which plays a crucial role in banking sector the future of bank is AI.

HYPOTHESIS

H0: There is no significant difference between Age of the Respondents & Use of AI powered chat bots for banking enquires

H1: There is a significant difference between Age of the Respondents & Use of AI powered chat bots for banking enquires

H0: There is no significant difference between Income of the Respondents & Which AI Applications would you like to see more in banking sector

H1: There is a significant difference between Income of the Respondents & Which AI Applications would you like to see more in banking sector

RESEARCH METHODOLOGY

Research Design	:	Descriptive research
Nature of Data	:	Primary and Secondary Source of information
Sampling technique	:	convenience sampling
Sample Size	:	50
Sampling Area	:	Private Banks
Statistical package	:	SPSS, One sample T- Test, correlation, ANNOVA
Data Collection Tool	:	Questionnaire

DATA ANALYSIS AND INTERPRETATION

One sample T-Test of two variables

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
ge of the Respondents	5	2.7	.58	.08
lave you ever used AI powered chat bot or banking enquires	5	1.0	.000	.00

One-Sample Test

	Test Value = 0					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
ge of the Respondents	32.90	4	.00	2.70	2.5	2.8

Interpretation:

The significant level is 0.000, so there is a significant difference between Age of the respondents & use of AI powered chat bots for banking enquires, hence H1 is accepted

One sample T-Test of two variables

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
ıcome of the Respondents	5	1.8	1.21	.17
Vhich AI applications would you like t ee more in banking sector	5	2.8	1.14	.16

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
ıcome of the Respondents	10.84	4	.00	1.86	1.5	2.2
Vhich AI applications would yo ke to see more in banking secto	17.47	4	.00	2.84	2.5	3.1

Interpretation:

The significant level is 0.000, so there is a significant difference between Income of the respondents & AI applications would you like to see more in banking sector, hence H1 is accepted

Pearson correlation analysis of two variables

		Qualification of th respondents	Do you think AI technology will replace the human workers in a significant numbers in banking in the future
Qualification of the respondents	Pearson Correlation		.08
	Sig. (2-tailed)		.57
	N	5	5
Do you think AI technology will replac he human workers in a significan umbers in banking in the future	Pearson Correlation	.08	
	Sig. (2-tailed)	.57	
	N	5	5

Interpretation:

The significant result is 0.571, hence there is a perfect correlation between the Qualification of the Respondents and AI Technology will replace the human workers in a significant numbers in the banking industries in future.

One way ANNOVA Test

Descriptives									
Vhat is your level of satisfaction with the AI based customer service in your bank									
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	Between-Component Variance
					Lower Bound	Upper Bound			
ge 20-30	1	2.0	.72	.17	1.6	2.4			
ge 30-40	2	1.9	.48	.09	1.7	2.0			
ge 40-50		2.0	.00	.00	2.0	2.0			

otal		5	1.9	.57	.08	1.8	2.1			
Model	ixed Effects			.57	.08	1.8	2.1			
	Random Effects				.082	1.61	2.31			-.01

. Warning: Between-component variance is negative. It was replaced by 0.0 in computing this random effects measure.

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
What is your level of satisfaction with the A ased customer service in your bank	ased on Mean	2.81		4	.07
	ased on Median	2.56		4	.08
	ased on Median and with adjuste f	2.56		43.78	.08
	ased on trimmed mean	2.85		4	.06

ANOVA

What is your level of satisfaction with the AI based customer service in your bank

	Sum of Squares	df	Mean Square	F	Sig.
etween Groups	.28		.14	.43	.65
Within Groups	15.63	4	.33		
otal	15.92	4			

What is your level of satisfaction with the AI based customer service in your bank

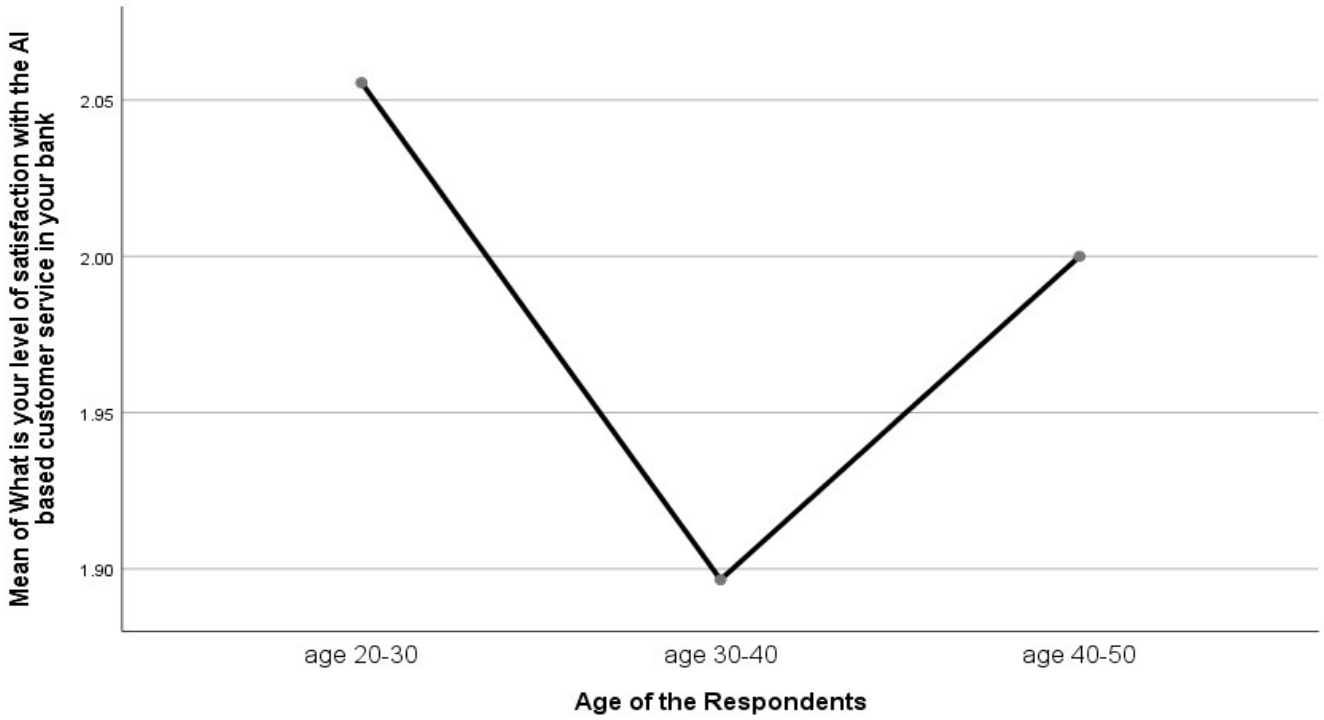
Tukey HSD[a,b]

ge of the Respondents	N	Subset for alpha = 0.05
		1
ge 30-40	2	1.9
ge 40-50		2.0
ge 20-30	1	2.0
ig.		.86

Means for groups in homogeneous subsets are displayed.

. Uses Harmonic Mean Sample Size = 7.086.

. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.



FINDINGS

34% of the respondents are using AI for fraud detection

42% of the respondents are like to see AI credit scoring in the future of banking sector

76% of the respondents are benefited with the customer experience through chat bots done by AI

86% of the respondents are satisfied with the AI Technologies which used by the private banks.

SUGGESTION

Banks can increase their online customers through online conversation and also improve experience with the personalized recommendations. Banks can contact the customers and explain about the AI implementation it will help the customers to know about the AI innovative technologies it will helps to increase customer support.

CONCLUSION

Based on the research findings, the study draws the conclusion that most of the respondents are satisfied with the AI technology. Artificial Intelligence (AI) in banking is transforming the financial industry through increased productivity, better customer service, and enhanced security. AI-driven solutions eliminate human error, cut expenses, and automate processes to streamline operations.

Additionally, they make it possible for banks to provide individualized services that improve customer happiness, such focused product suggestions and financial advice. Furthermore, AI assists with risk management and fraud detection by evaluating enormous volumes of data to instantly spot questionable activity and possible risks. The use of AI, however, also brings up issues with data

privacy, morality, and the possibility of employment displacement. In conclusion, even while AI offers banks a lot of potential for innovation and expansion, the sector must strike a balance between these developments and responsible behavior to make sure that the advantages of AI are realized without sacrificing moral principles or client confidence.

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