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## A STUDY ON ARTIFICIAL INTELLIGENCE (AI) IN BANKING AND FINANCIAL SERVICES

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### ABSTRACT

*This paper focuses on the 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. Banks and other financial institution can mine the financial transaction data generated by the proliferation of digital payments and banking to better monitor, predict and respond to consumer behaviour. To identify the information used in the banking and financial services, the data is collected from secondary sources based on the literature review. A structured questionnaire is framed to collect the primary data of customers have toward AI application. Findings: the result of the study that the private banks and private financial institution are using various AI services for the customers benefit so that customers satisfied with their services in addition to that financial services as to improve services more effective manner because some of them are dissatisfied with the banking services. The result also suggested that the customers more commitment from representatives to the banking and financial services by giving development innovative preparing to improve the AI procedures in the workplace.*

**Keywords:** AI – Artificial intelligence, banking, financial services and consumer satisfaction

### I. INTRODUCTION

“Artificial Intelligence is typically defined as the ability of a machine to perform cognitive functions we associate with human minds, such as perceiving, reasoning, learning, interacting with the environment, problem solving, and even exercising creativity”. However, Artificial Intelligence (AI) is actually a combination of advanced computational technologies in varying degrees of maturity.

#### AI in Financial Services

There are also a range of improvements in the way communications, customer support, and recruiting and asset management take place throughout financial sector. Today, for example, stock investing and finance is all about technical skills and divine luck. Yet in the future, with the aid of sentiment analysis, crowd-sourced data and algorithms, we will be able to handle money in a much different way.

## Major Areas of Artificial Intelligence can be used in banking

- + Personalized Financial Services
- + Smart Wallets
- + Voice Assisted Banking
- + Customer support
- + Digitalization instead of branch lines
- + Reduce Costs
- + Mitigate Risk
- + Increase Revenue

## Different AI application in Banking and Financial Services

### Customer Support and Marketing

**Chatbots:** Self-learning programs for intelligent conversations with humans over chat or audio; Available 24×7 and very easy to use but require long time for training.

**Robo-Advisors for Financial Products:** Online platforms that use algorithms to offer financial advice, re-invest dividends, automatic portfolio creation and re-balancing of the portfolio etc. This require minimal to zero human intervention.

**Personalized Financial Services:** Robo-advisors to monitor customer goals and suggest stocks or bonds to buy/sell; Gives personalized attention to customers irrespective of their risk appetite.

**Smart Wallets:** Intelligence added to mobile wallets for smart services like chat, booking of bus tickets, cab, events, movies, utility bill payments, etc.

**Emotion AI:** A branch of AI to enable machines to detect human emotions with advanced facial and voice recognition technologies.

### Security and Compliance:

**Fraud Detection and Prevention:** Minimize need to add continuous manpower to detect and block security attacks. These platforms use machine learning to automate the process.

**Compliance Monitoring:** Use AI to examine lengthy documents and flag potential issues in seconds, which would otherwise take many hours.

**Intelligent QRC:** A new segment of Artificial Intelligence companies that specialize in helping companies remain compliant, e.g. ensure no document is missed out while filing something, do risk mitigation by monitoring customer behaviour from empirical data.

### Back-End BPM

**Robotic Process Automation:** The use of software robots to take over high volume, back-office processes and repetitive tasks to save time, enhance efficiency, and increases accuracy.

**Algorithmic Trading:** AI for high-frequency trading where inputs are taken from multiple financial markets to make investment decisions in milliseconds. Reports suggest that over 70% of trading worldwide today is being managed by algorithms.

**Investment Research:** AI to guide investors on stock picking decisions. It can help cover more companies in exchanges all over the world, do their research and portfolio management.

**Human Resources:** AI to save hiring manager's time in various recruitment processes e.g. engage with new recruits, shortlist resumes from social media sites, pre-screen candidates over chat, determine candidate drop out chances, etc.

## II. REVIEW OF LITERATURE

Adrian Lee (Jan 23, 2017) Banking on artificial intelligence - The purpose of this article was to determine the most prominent forms of AI within the banking industry. AI-driven customer service, real-time fraud prevention and risk management-it's the last one that might appeal most to those interested in industry disruption.

Emmanuel Mogaji, Taiwo O. Soetan, Tai Anh Kieu 2020 -The implications of artificial intelligence on the digital marketing of financial services to vulnerable customers. This paper examines the relationships between AI, digital marketing, and financial services in relation to vulnerable customers, highlighting key implications in the collection, processing, and delivery of information, as well as the importance of human connection for optimal customer experience and engagement with financial services providers. Understanding ethical implications, as well as data and modelling challenges, is necessary for the successful deployment of AI. This study provides a theoretical framework to financial services providers, AI developers, marketers, policymakers, and academics, aiding the understanding of the precarious conditions facing vulnerable customers, and the ways in which they can more effectively be reached.

## III. OBJECTIVE OF THE STUDY:

1. To study about Artificial Intelligence in Banking and Financial Services in perceptions of clients or consumers.
2. To study the areas and the application where the Artificial Intelligence is being used by the Banking and Financial Services.
3. To Study about Banking and Financial Services for using Artificial Intelligence is to offer customized Product.

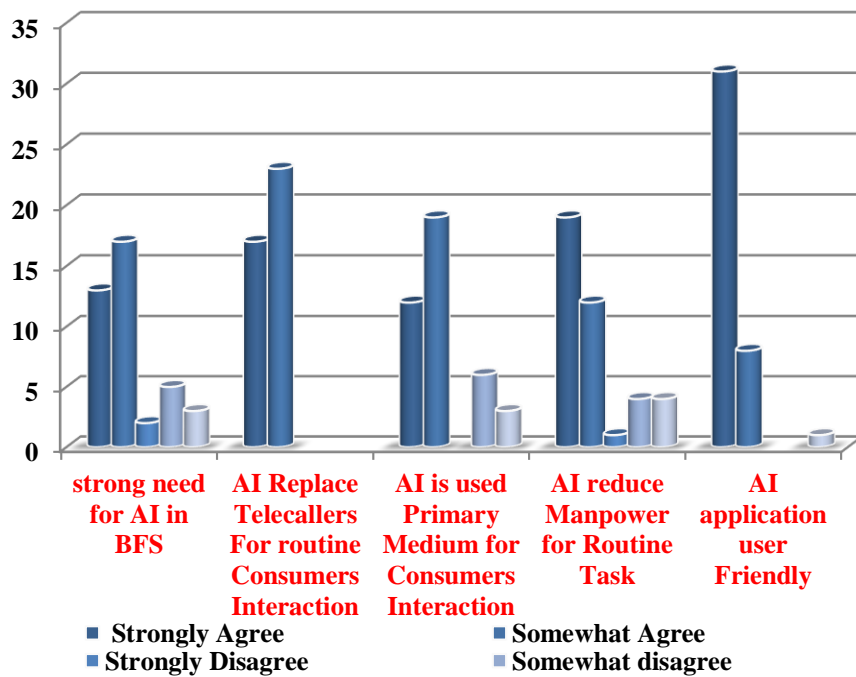
## IV. SCOPE OF THE STUDY:

Study of Artificial Intelligence in Banking and Financial Services in specific private banks and private institutions is constrained to client benefits as it were.

## V. DATA AND METHODOLOGIES:

The data gathered is Primary and Secondary data, which is qualitative data, which was further analyzed in order to draw conclusions and suggestions. The Primary data was gathered through a survey on artificial intelligence in banking and financial services. A questionnaire was drafted for the survey and random sampling was done. The secondary data collection was done through internet which includes web, e-magazines, research papers, e-books, newspapers etc.

Figure 5.1 Percentage Analysis



**Interpretation:** Fig 5.1 shows the consumer's perceptions about Artificial Intelligence in Banking and Financial Services which is determine most of the respondents strongly agree with Artificial Intelligence applications user friendly.

Table 5.1 Multiple Response Analysis

Useful applications of AI	YES		NO		TOTAL	
	Frequency	%	Frequency	%	Frequency	%
Chatbots	36	90	4	10	40	100
Voice Assistants	19	47.5	21	52.5	40	100
Authentication and biometrics	26	65	14	35	40	100
Fraud detection and Prevention	37	92.5	3	7.5	40	100
KYC/AML	39	97.5	1	2.5	40	100
Smart Wallet	27	67.5	13	32.5	40	100

**Interpretation:** The Above table shows that the frequency analysis for evaluating the useful applications of AI in Banking and Financial Services revealed that 90% of respondents says Chatbots applications of AI is very useful in BFS, 52.5% of respondents says Voice Assistants is not useful in BFS, 65% of respondents says Authentication and Biometrics is very useful, 92.5% respondents says fraud and detection and prevention is used to secure the data, 97.5% respondents says applications of KYC /AML is very useful to provide documents and other details to submit in BFS and 67.5% respondents says Smart Wallet applications in AI handling cashless Transactions in this generation.

## VI. CONCLUSION

Artificial Intelligence has numerous advantages to offer for the financial segment. Based on the findings, it can be concluded 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. Adoption of Banking and Financial Services AI in applications was highest followed by KYC/AML, Chatbots and Security Compliance and also helping to fulfil the customer demand faster and easier. The consumers more commitment from representatives to the banking and financial services by giving development innovative preparing to improve the AI procedures in the workplace. It is also being used to meet regulatory compliance, detect fraud, and assess individual creditworthiness.

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