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A Study on Using AI-Enabled Banking Services by Accelerating Digital Financial Inclusion

Ms. Swati Singh[1], Ms. Monika Singh[2], Ms. Prachi Srivastava[3], Mr. Shrey Tyagi[4], Ms. Priyanka Sharma[5]

Assistant Professor, Department of Management, Hierank Business School, Noida

swati@hierank.org

Assistant Professor, Department of Management, Hierank Business School, Noida

monika@hierank.org

Assistant Professor, Department of Management, Hierank Business School, Noida

prachi@hierank.org

Assistant Professor, Department of Management, Hierank Business School, Noida

shreytyagi@hierank.org

Assistant Professor, Department of Management, MIET, Meerut

priyanka.sharma@miet.ac.in

Abstract: This investigation focuses on preparing India for the future by analyzing how AI-enabled banking services can speed up digital financial inclusion in the nation. Financial inclusion acts as an equalizer, allowing all citizens to both benefit from and contribute to economic prosperity. When India first introduced financial inclusion by nationalizing its banks in the middle of 1969 and then developing a number of regulations to make it operable. A combination of accomplishments and failures make up the track record. Even with advancements, inclusion is hampered, especially in rural regions, by issues like the digital divide and the constraints of conventional banking methods. According to the study, banking services powered by AI have the potential to revolutionize the industry. AI can increase security, improve creditworthiness evaluations for marginalized groups, and personalize financial goods. India can strengthen its place as the global financial leader, empower its people, and encourage financial literacy by utilizing AI. The report also examines the possible advantages and difficulties of integrating AI in the Indian banking industry, taking user adoption, infrastructure needs, and regulatory frameworks into account. The study investigates how AI can help overcome current obstacles and suggests methods for using AI sensibly and morally to promote equitable financial growth. The purpose of the article is to further the current discussion on using AI to strengthen all Indians and accomplish sustainable economic growth. This study evaluated the effect of AI on the inclusion of digital finances using survey data and a review of the literature as key sources of information. The current study found that AI significantly affects the inclusion of digital finances in domains like customer happiness, service effectiveness, and behavioral finance.

Keywords: Digital Divide, The banking industry, Financial Inclusion, artificial intelligence (AI), and Structure

1.Introduction

Digital technologies include artificial intelligence (AI), which has the potential to both cause and worsen the digital divide. (Cohron, 2015, Carter et al., 2020, Luttrell et al., 2020). The creation and application of computer systems or machines that are capable of carrying out tasks that normally call for human intelligence is known as artificial intelligence (AI) where as Financial inclusion is "the process of ensuring access to appropriate financial products and services needed by all sections of society in general, and vulnerable groups like weaker sections and those with low income groups in particular, at a reasonable cost, in a fair and transparent manner, by regulated mainstream institutional players," according to the ruling Reserve Bank of India. The financial inclusion framework does not take financial markets into account and instead depends nearly entirely on intermediaries in finance to provide financial inclusion to the public. The delivery of financial services, rather than initiatives to boost demand for financial services and products, has been the primary focus of banks' and non-bank financial organizations' expansion into rural regions over the past forty years. To push banking "to the last mile," the 2011 Swabhiman1 campaign was launched. India's financial inclusion initiatives aim to bring banking to consumers' doorsteps by enabling low-income individuals to open "no-frill" bank accounts with no deposit. Facilitating transactions with banks through local banking agents known as "business correspondents" (BCs)—who can be people or organizations from a variety of backgrounds, including civil society organizations (CSOs), micro finance organizations, retired bank/government staff members ex-servicemen, retail owners, and even authorized

executives of well-run self-help groups—includes easing the requirements for opening bank branches and installing ATMs.

Therefore, previously underprivileged individuals can now access formal financial services at a reasonable cost through digital financial inclusion. By improving financial services' accessibility, cost, and quality, artificial intelligence (AI) has the potential to make a substantial contribution to digital financial inclusion. AI can promote financial inclusion in the following ways:

- Credit Scoring
- Chat-bot and virtual assistance
- Digital payment solutions
- Financial Inclusion Strategies Using Data Analytics

2.Literature Review

Kaur et al. (2020) said that artificial intelligence (AI), sometimes known as machine intelligence, is the replication of human intelligence in machines. It is the intellect exhibited by robots as opposed to the natural understanding of humans. AI is evolving quickly, from self-driving cars to Siri. In general, artificial intelligence is based on simply two fundamental ideas. The first stage is to study human brains and thought processes; the second is to model these functions using machine learning. Chatbots are only one aspect of artificial intelligence in banking.

Kochhar et al. (2019) stated that technology progress rules the globe and that one of the areas developing at the fastest rate in the world is artificial intelligence. Several businesses, particularly the financial sector, are utilizing artificial intelligence. Artificial intelligence's use of complex data analytics will revolutionize banking in future decades by improving compliance and lowering fraud. AI will increase human productivity and enable them to perform calculations that would be difficult to perform manually in a much faster and easier way, even though it won't replace humans. By improving customer satisfaction, artificial intelligence also reduces risk and increases revenue in the banking sector.

Fares et al. (2022) An AI banking service structure that bridges the gap between scholarly research and real-world application is created by developing and classifying recognized research themes that demonstrate the application of AI in banking and combining them with previous studies. The findings demonstrate how the published literature on AI and banking covers three key research areas: strategy, process, and customer. These findings could be helpful to marketers and banking industry decision-makers as they formulate long-term plans for leveraging and optimizing the benefits of artificial intelligence (AI) in the sector. This work also presents opportunities for further investigation.

Sadok et al. (2022) explains the implications of banks and other lending organizations using artificial intelligence (AI) in their credit analysis process. Thanks to the unique features of AI models and the expansion of computing power, fresh data sets are now available for creditworthiness assessments. Compared to conventional creditworthiness measurements, the combination of AI and big data appears to improve prediction accuracy by detecting weak signals like interactions or non-linearities among explanatory variables.

Königstorfer et al.(2020) claimed that AI is becoming more and more popular in both industry and society. Although the first AI applications in banking were effective, the majority of AI implementations today are in investment banks and back-end services that do not directly engage with customers. AI in the banking industry hasn't received much attention thus far because of its focus on client relationship. The application of AI in commercial banking may change client interactions and operational processes, creating new avenues for behavioral finance study. Based on the research gap, we conducted a systematic literature review to identify AI applications in banking industries and the challenges associated with AI adoption.

3.Objectives of Study

- To assess the causes of financial exclusion and comprehend the present status of financial inclusion.
- To investigate the possible effects of banking services powered by AI on increasing financial access and fostering financial literacy.
- To comprehend the possible advantages and difficulties of integrating AI in the Indian banking industry.

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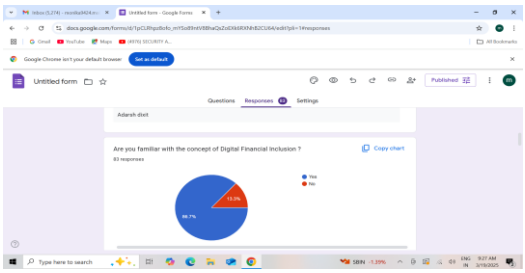
4.Research Methodology

Customers that use banking services with AI capabilities are the primary subject of the study.

- **Research design:** To evaluate the applicability and use of AI-enabled banking providers in digital financial inclusion amongst Noida consumers, a mixed approach was used.
- **Data collection:** A questionnaire with closed-ended questions was created for the goal of gathering primary data, while the quantitative data was obtained from a review of the relevant literature.
- **Sampling:** To choose a representative sample of Noida-based clients, a convenience sampling technique was employed. The consumers' level of education will be used to define the stratum. For the goal of gathering primary data, the study involved 120 respondents.
- **Data analysis:** The percentage approach has been used to analyse data.
- **Ethical considerations:** The study will adhere to ethical guidelines, which include getting participants' informed consent, protecting participant privacy and anonymity, and minimising any possible discomfort or harm.

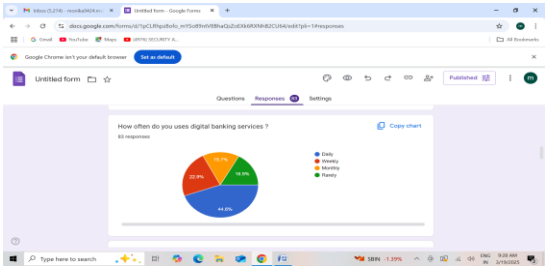
5.Data Interpretation

The results of a study asking respondents if they were familiar with the idea of digital financial inclusion are shown in the first pie chart. In this case, there are two choices: yes or no.



It is evident from the pie chart above that while a small minority of respondents are ignorant of the notion of digital financial inclusion, the majority are aware of it. Clearly, it guarantees that people and communities have access to convenient and reasonably priced digital financial services, especially those who are historically underserved or financially excluded. By utilising digital technology, it seeks to close the gap between the official financial system and the unbanked or underbanked communities.

The respondent in this section were asked about the usage of digital banking services:



It is evident from the pie that 44.6% of respondents use digital banking services don daily basis while 22.9% respondent uses digital banking services weekly. 16.9% of respondents use digital banking services rarely. Therefore, we can conclude respondents are very much comfortable in using digital banking services daily and weekly basis.

The percentage of respondents using AI-enabled digital banking services, such as chatbots, voicebots, and RPA, is shown in the second figure.

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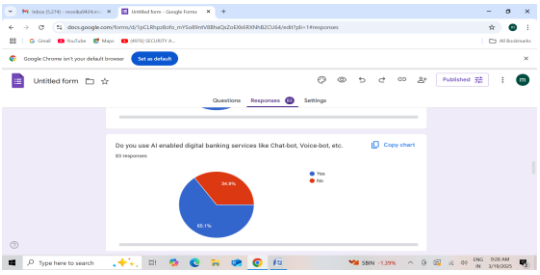
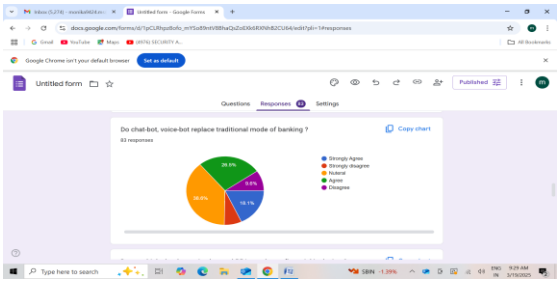


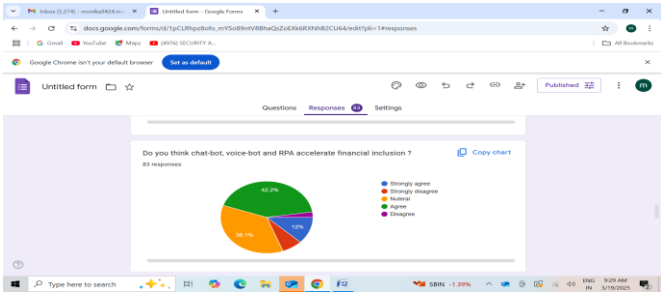
More than 65% respondent acknowledged that they utilise AI-enabled digital banking services, while others do not, as the above chart makes clear. Which indicates that banks' clients are familiar with AI and uses services like chatbots , voicebots and RPA and bank customers are ready to use AI and digital financial inclusion.

The data from respondents comparing voice and chatbots to traditional banking methods is displayed in the fourth pie chart.



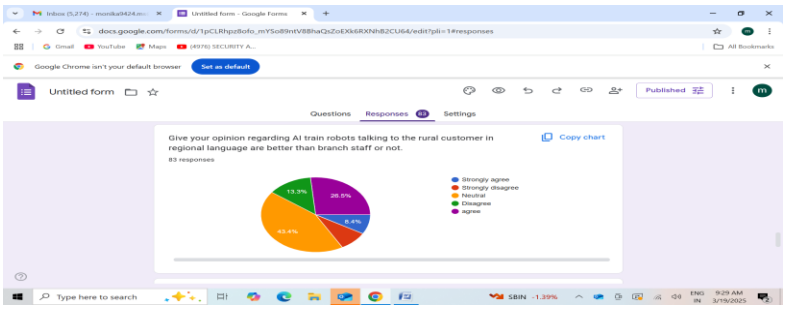
Based on the pie chart above, we can conclude that there is a digital divide between users of AI-enabled banking and traditional banking because only 18.1% of respondents preferred AI-enabled banking over traditional banking, and 38.6% of respondents were neutral, indicating that they felt comfortable using both banking methods.

The fifth graphic shows the outcome of a question asking respondents on how chatbots, voicebots, and RPAs are accelerating financial inclusion.



The pie chart above makes it very evident that over 50% of respondents concur that AI can hasten financial inclusion. However, 10% disagree and 36.1% are neutral, respectively, of all respondents.

The sixth pie chart shows whether or not people believe AI-trained robots that converse with rural clients in their native tongue are superior to branch employees.



Just 26.5% of respondents responded favourably to this question, stating that they believe talking robots to be far superior to branch employees. In contrast, 13.3% of respondents disagree, and 8.4% strongly disagree while 43.4%respondents were neutral Therefore, based on the overall pie chart, we can conclude that most bank clients are still confused to decide which mode of talking should be preferred as majority of respondents were neutral.

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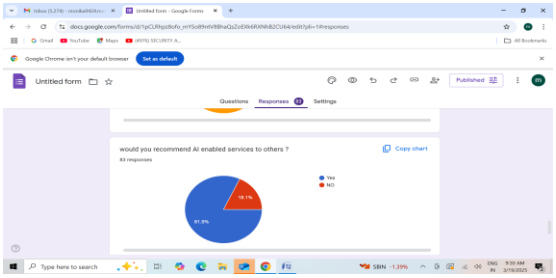
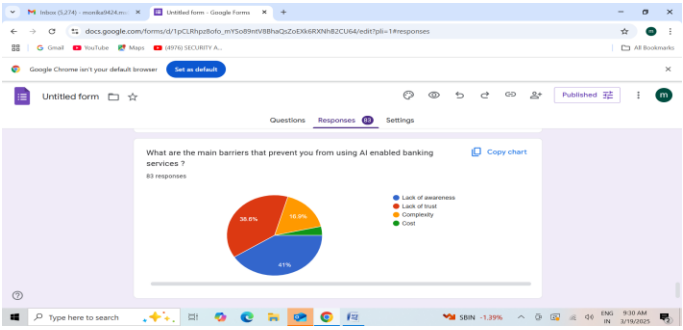
The seventh query concerns recommending AI-enabled services to other people.



According to this metric, only 18.1% of respondents do not wish to suggest AI-enabled banking services to others, whereas the majority do. Therefore, we may conclude that those who do not use financial services provided by AI are highly motivated to use and recommend them to others.

The last query was related to the barriers that prevent respondents from using AI enabled banking services



From the above pie chart, it can be narrated that major barrier which prevent using AI enabled banking services is lack of awareness among the respondents which is around 41%while 38.6% respondents found that lack of trust is another major barrier.

6. Findings

- 86.7 % respondents are aware about digital financial inclusion.
- Nearly 50% of the respondents are using digital financial services on daily basis.
- Above 50% of the respondents are currently using chat-bots and voice-bots.
- Majority of the respondents opine that digital tools of financial services are gradually replacing traditional mode of banking.
- Most of the respondents advocate the role of chat-bots, voice-bots in speeding up financial inclusion.
- Study shows that language is still a barrier in digital financial services as most of the people have neutral attitude towards digital robots while a few are of the opinion that human involvement is still better.
- 81.9 % respondents intend to recommend digital financial services to others which indicates that majority people are ready to adopt digital changes in banking sector.
- Though, people have a sound awareness about digital financial services but when it comes to implementation 38.6% respondents found lack of trust is a major barrier.

7.Conclusion

The study "A Study on Using AI-Enabled Banking Services to Position India by Accelerating Digital Financial Inclusion" emphasises how AI technologies have the ability to drastically alter India's financial landscape. India might become a pioneer in digital financial inclusion with AI-enabled banking services. India can empower its people, close the wealth gap, and spur economic growth by utilising AI's potential. But reaching these objectives calls for a well-rounded strategy that takes ethical norms, legal compliance, and technology developments into account. In order to achieve the goal of an inclusive and technologically advanced India, more research and innovation in this area are essential.

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