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A Study on Financial Inclusion Through AI-Driven Fintech Solutions

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ABSTRACT: Financial inclusion seeks to bring all sections of the society within the folds of financial services namely banking, savings, credit and digital payments. In the last few years, AI driven fintech services have made all the financial services accessible, speedy and user-friendly to the marginalized groups who were previously outside the formal financial system. Such technologies include digital payment apps, AI driven credit scoring tools, etc.

This study intends to analyze the role of AI powered fintech to enable financial inclusion on the basis of awareness of the users, accessibility and use. Descriptive research design is used for this research work. The data is collected through both primary sources and secondary sources. Data from primary sources are collected using a structured questionnaire and secondary sources include research articles, papers and industry reports pertaining to fintech and AI. Data has been analyzed by using the method of simple percentage.

Based on the results obtained, AI driven fintech tools have enabled convenience, access and better management of money. However, the penetration is limited due to lack of awareness, data security and low digital literacy of the users. Overall, the results prove that the penetration of AI driven fintech will lead to greater financial inclusion, but increased awareness and user confidence would enable the penetration.

KEYWORDS: Financial inclusion, Artificial Intelligence (AI), fintech, AI-driven fintech, digital financial services, alternative credit scoring, financial literacy, underbanked population, digital payments, financial technology innovation.

I. INTRODUCTION

Financial inclusion can be defined as an access to and usage of services that allow to take basic payments, save, and get credits from formal and informal institutions for economic development. There is still a vast proportion of population (specifically from rural and lower income group) that doesn't exploit formal financial services fully due to illiteracy, accessibility of banks and cumbersome processes involved.

Fintech is changing it. The usage of Artificial Intelligence in fintech, services become much easier, faster and accessible. AI analyses user data, makes an individual financial recommendation, detects the fraud and issues the loans, no collateral is required. Digital payments apps, online banking sites, and AI based lending are widely used and help more and more people connect to financial system. An individual's increasing usage of internet and smartphone devices in India is one important factor where AI based fintech applications will enhance the financial inclusion due to easy, anytime access and without even visiting a bank.

In this study, I'm focusing on what role the AI based fintech applications are playing in augmenting the financial inclusion, what is the level of awareness, usage, what challenges users face while availing those facilities and etc. It involves both primary and secondary data research.

Statement of the Problem:

Financial inclusion can be defined as an access to and usage of services that allow to take basic payments, save, and get credits from formal and informal institutions for economic development. There is still a vast proportion of population (specifically from rural and lower income group) that doesn't exploit formal financial services fully due to illiteracy, accessibility of banks and cumbersome processes involved. Fintech is changing it. The usage of Artificial Intelligence in fintech, services become much easier, faster and accessible. AI analyses user data, makes an individual financial



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II. REVIEW OF LITERATURE

The contribution of fintech toward enhancing financial inclusion has been the focus of numerous studies especially in the context of developing countries like India. A significant majority of the studies have concluded that digital financial services are successful in facilitating ease of access of people to basic financial services such as payment, savings and credit facilities. Various researchers' works show that the fintech platforms bridging the gap between the banks and consumers have contributed immensely to providing ease of use and cost-effective services to customers via mobile application and online platforms. It is seen from numerous studies that digital payment system enhanced the financial participation by facilitating quick and secured transactions with ease of use without being visiting bank branch. Research studies have also illustrated the role of Artificial Intelligence (AI) in fintech; analysing customer data and facilitating personalized financial advice, enhancing credit assessment etc. Many studies have found that AI based credit scoring is a great opportunity for the unbanked individuals to have access to credit facilities which further contribute to financial inclusion. At the same time some studies have also mentioned the various adoption issues related to the AI driven fintech applications like; unawareness of the applications and services being provided by the fintech platform; low level of digital literacy; security concerns about the privacy and trust of data and finally trust deficit of users about the fintech services. Lack of proper Internet facilities and technological expertise in rural area are also significant concerns. The present study is an extension of the existing research literature that confirms the high potential of AI driven fintech towards enhancement of financial inclusion and simultaneously points towards the issues of unawareness, trust deficit and low digital literacy that need to be addressed for its proper success.

The methodology of this study is as follows:

1. Research design

This research study adopts a descriptive research design; a study which is intended to observe and describe the current state and the "how to do it". Here the aim is to get to know how users are making use of the AI enabled fintech services and their feedback regarding these services. It aids to study user awareness, behaviour, satisfaction, and problems. This study design suits as it depends on actual usage and users' opinion on these services.

2. Data Collection

Data is collected both from primary and secondary sources. The primary data is obtained by an online survey based on a structured questionnaire which seeks information regarding the usage and satisfaction level, awareness of the fintech services among respondents. The secondary data was obtained from various research papers, articles, journal and industry reports to make the study well supported.

3. Sampling Method

In this study a convenience sampling is used in which the data are obtained from samples that were readily available. This process involves easy way of collecting the data and saves a lot of time and cost, though it may not be appropriate for higher precision, for general insight from required sample, it saves a lot.

4. Sample Size

The data is based on the sample size of 46 respondents. The size of this sample would allow for the interpretation and basic analysis of the collected data; however, it does not enable the finding of larger conclusive results in the larger population due to small size.

5. Target respondents

The target respondents were any individual who are using any digital financial services, i.e. Payment apps, online banking and fintech platforms among the students and professionals in the community. They are the targeted groups of users that would be most accustomed with these AI powered financial tool usage.

6. Data Analysis Tools

The analysis of data is done using percentage method which was used for finding the number of respondents who choose that specific alternative. It also uses charts and graphs to interpret the results in a more visualized manner.



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III. OBJECTIVES OF THE STUDY

Understand the notion of financial inclusion, and how the use of AI-powered fintech services can increase accessibility of financial services.

To analyse user awareness and adoption rate of AI-powered fintech services.

To understand how AI-powered fintech solutions provide financial services quickly, easily, and at lower cost.

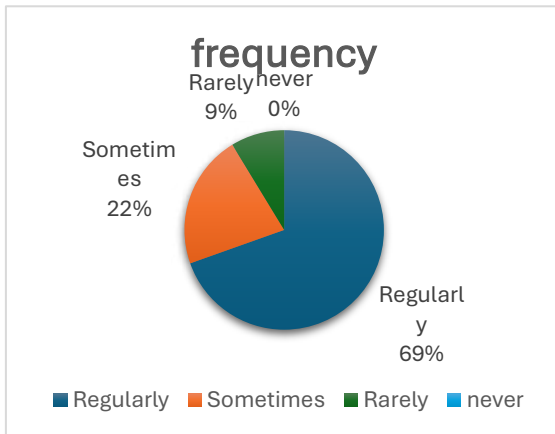
To explore how fintech has provided a number of benefits to the users. For example: convenience, efficient cash flow and credit accessibility.

To explore the impediments users faced in adopting fintech services powered by AI, such as trust issue, privacy & security concerns and lack of user awareness.

To find how AI based fintech services can play a role in advancing financial inclusion.

IV. DATA ANALYSIS AND INTERPRETATION

1. How often you use digital payment apps (UPI, mobile wallets, online banking)?



1. How often do you use digital payment apps (UPI, mobile wallets, online banking)?	Frequency	Percentage
Regularly	32	69.56521739
Sometimes	10	21.73913043
Rarely	4	8.695652174
Never	0	0
Total	46	100%

Chart 1- Use of Digital payment apps frequency Most of the people are regularly using digital payment apps (UPI, mobile wallets etc) with majority of the respondents (70% or 32 people) stating they use them regularly. And rest of the 22% said occasionally, only 9% said rarely. No one admitted to never use it. This shows very high digital payment adoption among the survey sample, indicating that the sample respondents are already a digitally active group and this is an important piece of context while reading about the AI-awareness responses.

2. Do you find digital financial services easier than visiting a bank branch?

2. Do you find digital financial services easier than visiting a bank branch?	Frequency	Percentage
Yes	31	67.39130435
NO	10	21.73913043
Not sure	5	10.86956522
Total	46	100%



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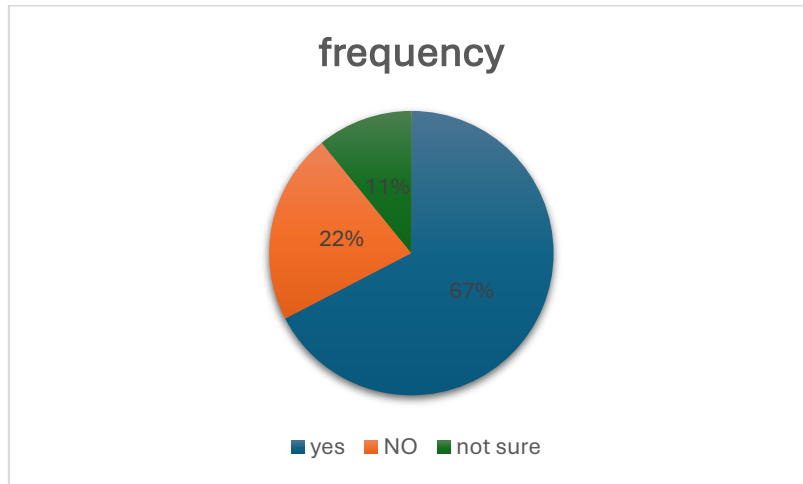


Chart 2 - Digital services vs bank branch as high as 67% of the respondents find it easier to avail financial services through digital modes than visiting a bank branch. Only 22% do not agree, 11% is neutral. A large majority suggests the convenience factor of fintech applications and that users prefer them to physical bank visits for accessing financial services.

3.Are you aware that Artificial Intelligence is used in digital banking and loan approval systems?

3. Are you aware that Artificial Intelligence is used in digital banking and loan approval systems?	Percentage	Frequency
Yes	73.913043	34
No	26.086957	12
Total	100%	46

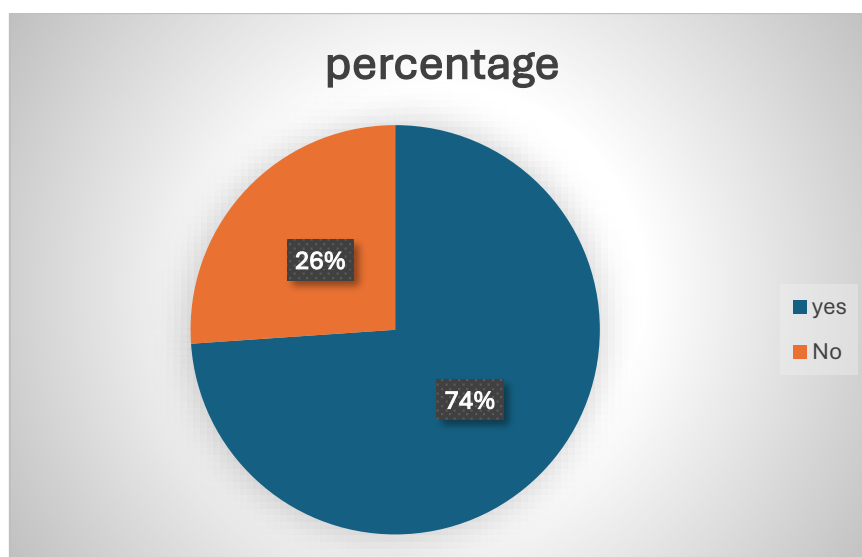


Chart 3 - AI awareness in banking 74% of respondents know that AI is being used in digital banking and loan approvals, whereas 26% do not. In the current urban and students focused sample this is interesting, as it means about



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one fourth of those using digital services in their daily lives are not aware of the use of Artificial Intelligence in the loan approvals and their digital interactions with banks.

4.AI-based credit scoring helps people without formal credit history get loans.

4. AI-based credit scoring helps people without formal credit history get loans.	Percentage	Frequency
Strongly disagree	10.9	5
Disagree	19.6	9
Neutral	28.3	13
Agree	34.8	16
Strongly agree	6.5	3
	100%	46

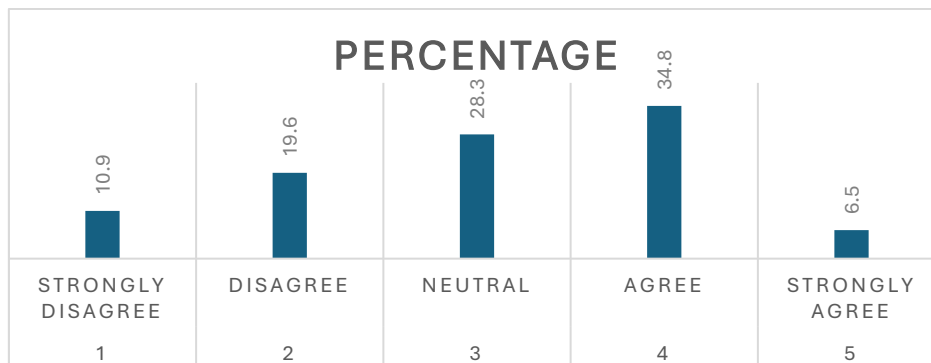


Chart 4 - AI credit scoring for those with no formal credit history Leans towards positive, but is characterized by uncertainty. While 35% agrees, 28% remains neutral and 20% disagrees while 11% strongly disagrees and only 7% strongly agrees. The positive side is more than the negative side as the total agree side sums up to 41% compared to the total disagree side to 31%. A large neutral block implies lack of experience and information for some of the respondents in understanding the efficacy of AI credit scoring on helping those with no formal credit history obtain loans.

5.AI-driven financial apps improve access to financial services in rural areas.

5. AI-driven financial apps improve access to financial services in rural areas.	Percentage	Frequency
Strongly disagree	10.9	5
Disagree	13.0	6
Neutral	37.0	17
Agree	34.8	16
Strongly agree	4.3	2
		46



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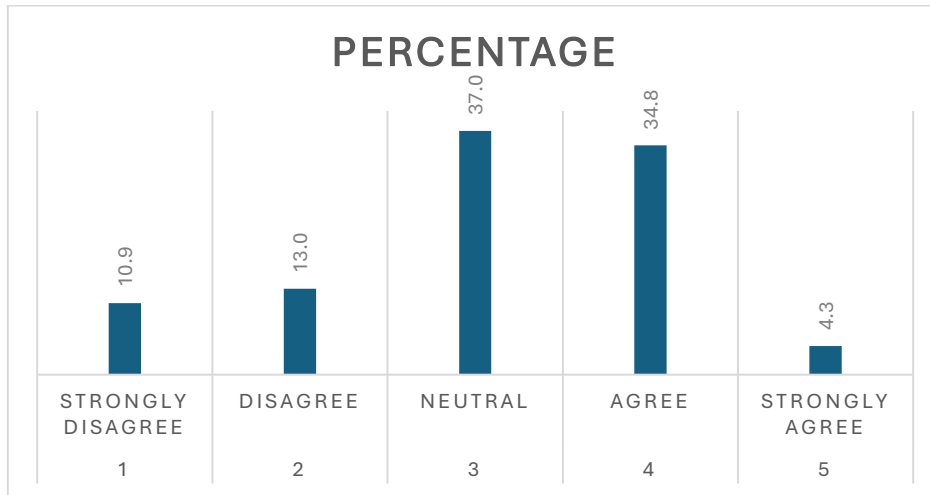
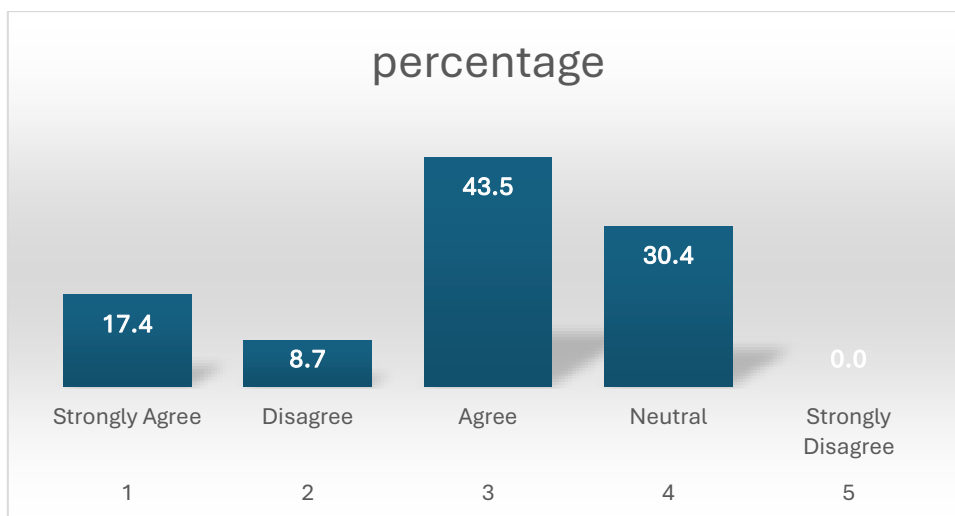


Chart 5 - AI apps improving rural access of financial services This is perhaps the most indecisive chart. While neutral is 37%, agree accounts for 35% and disagree is 13%. Strongly disagrees are 11%, and strongly agrees are only 4%. The positive side (39%) only slightly outweigh the negative side (24%), which suggests lack of information on the topic, possibly due to urban centric population who cannot comment on issues in rural area as they are not present there.

6. Overall, AI-driven fintech solutions are improving financial inclusion.

6. Overall, AI-driven fintech solutions are improving financial inclusion.	Percentage	Frequency
Strongly Agree	17.4	8
Disagree	8.7	4
Agree	43.5	20
Neutral	30.4	14
Strongly Disagree	0.0	0
	100%	46





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Chart 6 - Overall: AI-driven fintech improving financial inclusion Most positive out of all the charts. The agree section forms 43% of the respondents and followed by neutral at 30%. Strongly agrees are 17% while strongly disagree is 0%. The sum of 'agree' and 'strongly agree' gives a sum of 60% and this is a very positive result suggesting a good understanding and positive perspective of AI-driven fintech applications on financial inclusion overall, despite any confusion regarding specific applications

V. FINDINGS

From the data analysis, it could be observed that most of the respondents are using digital financial services. Nearly 70% of the people use digital payment app frequently, demonstrating the widespread usage of digital services. A high percentage of people feel that digital financial services is easier than visiting a bank, showing the convenient access offered by fintech platforms the survey also indicates that a considerable number of users are aware about the implementation of AI in the systems of banking and loans. However, there is also a significant number of users who are unaware of this, meaning there is a disparity in the level of awareness. In the question related to AI credit scoring and its importance in providing help to the unbanked/no credit history, respondents seem neutral. Hence, they are not completely aware of the implications of this service. In a similar fashion, respondents are also indifferent on the question concerning the role of AI in enhancing access to financial services in rural areas. This might be attributed to the fact that majority of respondents reside in the city and hence don't have first-hand experience on rural financial services. Majority of the respondents are of the view that AI powered fintech solutions are facilitating financial inclusion.

VI. CONCLUSION

The research also confirms the positive influence of AI enabled fintech on financial inclusion, as financial services become more accessible, convenient and rapid. High proportion of respondents are regular users of digital payment apps and prefer them over traditional banking which undeniably signifies the importance of digital medium in financial activities. Research also finds that, while people are well aware about AI, its impact and benefits on certain aspects like easy access to credits and rural development is still limited. Many participants were found to have a neutral stance, which can be linked to poor awareness and less experience in those aspects. To summarize the research supports the positive and transformative impact of AI driven fintech on financial inclusion; however, barriers to user acceptance still persist in the form of lack of awareness, trust and privacy issues that need to be managed. Financial literacy and user trust will be the two key determinants of widespread acceptance of AI driven technologies; otherwise, these could be game-changer for inclusion.

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