

The Pivotal Role of AI in Enhancing Financial Literacy in India

¹Dr. Meera K L

¹Assistant Professor, Centre of Management Studies, Jain (Deemed-to-be) University

Bangalore

meera_kl@cms.ac.in

²Dr. Sudarshan Seshanna

²Professor, Jain (Deemed-to-be) University, Bangalore

sudarshan.seshanna@jainuniversity.ac.in

Abstract

Another important aspect of Porath's measures of individual freedom is financial literacy; it is an important component most individuals need when making decisions concerning monetary strategies, investments or planning. The scenario is more so in a country such as India where financial illiteracy remains one of the major challenges given that incorporation of Artificial Intelligence (AI) into the financial sector offers a breakthrough in this regard. In this paper the focus is in understanding the importance of AI and how it has helped improve the level of financial literacy of the people of India especially the unserved demographic segments. Closely, it assesses the current levels of financial literacy in India, possibilities of enhancing the financial literacy through AI based applications, as well as the threats and opportunities for integrating this technology in the evaluation of the purpose.

Keywords: AI, financial literacy, Indian population.

1. Introduction

What is more, financial literacy that can be described as the capability to use certain skills to manage personal finances and to tackle economic issues is regarded as essential for the economic state [1]. It educates the people on how to manage their expenditure, how to save, how to invest, and how to set up for their future experiences. Hence, financial literacy is not merely an individual benefit in a fast-growing economy such as the Indian economy but also is a need for the nation's economic growth and financial progress.

Despite its importance never did the levels of financial literacy among the population of India witness high levels [2]. The current population's knowledge of various aspects of finances and managing them is low, and this has been postulated by numerous investigations executed in India. The above scenario is more compounded to some demography especially the residents of the rural areas, the female gender and the low-income earners since they lack sufficient or any knowledge in the financial management.

In the last few years, a new technological front Artificial Intelligence (AI) has emerged which can bring new prospects to solve this problem [3]. The capability to generate and analyze the large amount of data, grasp the patterns of user's behaviors and deliver the detailed analysis, tailored to the certain group of users, can also be effectively used to improve the financial literacy of the Indian population. Due to the possibilities of machine learning, intelligent platforms can provide users with personalized financial concepts and suggestions, live learning, and gaming.

This paper shall focus on how AI has taken the front line to improve the financial literacy level in India [4]. It discusses the status of financial literacy in the country, the possibilities and advantages of AI in the field of financial literacy and the problems and prospects of AI-based financial literacy programs. In doing so, the paper offers explorative insights into how the application of AI in the realms of financial literacy can help both advance the relevant literature and contribute to the overall efforts toward financial inclusion of people in India as well as across the globe.

2. Current State of Financial Literacy in India

2.1 Financial Literacy Statistics

This is true because of the enormous population coupled with high level of illiteracy prevalent in India that makes it difficult to achieve the common man's financial literacy [5]. As earlier shown by the different surveys coupled with research studies done on similar subjects, financial literacy in India compared to that of other similarly developed or developing countries remains relatively low. The National Centre for Financial Education (NCFE) in a survey conducted in 2019 reported that as low as 27% people of India are financially literate. This is rather worrisome, particularly where it is contrasted with the world average of approximately 33 percent. This study showed that the overall public in India has little or no knowledge pertain to fundamental principles of finance including inflation, compound interest, and risk management.

Thus, the gap in financial literacy by groups of the population is widened [6]. For instance, women's financial literacy is way lower than men; out of all the women in India only 21% are financially literate as compared to 32% of men. Secondly, the rate of financial literacy among the total populace of India is rather low especially the rural dwellers which forms the highest percentage of the population. The gaps are also observed depending on the household income with low-income participants demonstrating a much lesser level of financial literacy than their high-income counterparts.

2.2 Barriers to Financial Literacy

There are some reasons which show how India is that it has low level of financial literacy. Since there are barriers to change, it is important to understand this problem in order to provide relevant solutions.

One of the major causes of financial illiteracy to some extent especially in India is due to absence or deficiency of financial education [7]. They have no prior education when it comes to money management since it hasn't been taught as a subject in many of schools in India. This is even worse in the rural regions where there are few learning facilities, and few, if any, schools teach their students about money.

Cultural beliefs and other tradition that are rampant in the country also help determine the financial literacy in India. Men are commonly in charge of finances in many families; thus women are rarely in a position to engage in handling of finances in the society. These gender-based segmentation of financial responsibilities led to low or no financial power among most women, hence escalating their economic vulnerability.

The financial market environment has evolved in India and there is a broad number of diverse financial products and services offered to consumers. Although this gives a much wider choice, it poses the problem whereby consumers are not well equipped to make costs and benefits comparisons of various products that they come across. Due to the complexity of these products and most people having little or bad finance education the products overwhelm the customer to the extent that they make bad decisions or decide not to invest in the financial markets at all.

In fact, the general education levels and financial can be said to be in a proportional relationship [8]. Literacy rates in Indian population particularly among elderly and rural dwellers are considerably low especially from what can be considered literate population in India. It also reinforces a poverty of financial knowledge, so people cannot adequately comprehend or engage with financial products or recognise possible consequences of their fiscal choices.

India as a country is multilingual and today has more than 22 linguistically divided languages in addition to hundreds of dialects. Many ministers of finance and other official documents and other educational material is currently available in English and a few other languages that the world's population cannot read. This way of translating financial information also reduces the flow of financial literacy as it is only available in the local language in areas, which are rarely served by media houses.

The effects of low FI in India are therefore quite severe and affect individuals personally as well as the nation's economy at large [9]. People with lower levels of financial literacy will make worse financial decisions, such as accumulating too much debt, not accumulating money for future use or being vulnerable to fraud. Such behaviours result in different costs which negatively impacts on finance and quality of life.

On a larger note, a low level of financial literacy is detrimental to the economic growth process. This constrains the impact of financial liberalization as some of the impoverished people cannot make the best out of the financial tools

available to them. This in turn, can result in a damped economic growth and by implication, increased levels of income disparities in the population.

Being aware of the role financial literacy plays, the Indian government together with numerous financial organizations attempts to enhance financial literacy [10]. RBI of India and SEBI of India have set up campaigns, seminar, and workshops to enhance the literacy level on the aspects of financial management.

Another government scheme – the national level scheme is Pradhan Mantri Jan Dhan Yojana (PMJDY) to achieve financial inclusion has also helped in creating awareness about the financial products and services for the unbanked population [11]. Furthermore, over the years the NCFE has been trying to ensure that there is an improvement in the level of financial literacy through implementing Financial Education Program (FEP) and National Strategy for Financial Education (NSFE).

However, attempts to increase financial literacy levels have not been extremely successful even with these economies' efforts [12]. Thus, there is a rise in the requirement of fresh ideas in financial education that should be easily accessible to all and ought to clear the existing hurdles of financial illiteracy in India. As we have seen, social work practice with refugees and immigrants requires the need for innovative solutions.

Taking into consideration the current situation with financial literacy in India it is possible to conclude that the existing barriers have to be addressed and the opportunities for improving the current situation have to be searched for in the application of innovative methods of financial education [13]. This is where Artificial Intelligence (AI) can come into play, and make the difference. By leveraging on the artificial intelligence technologies, self-learning, financial products and services education, complicated financial concepts, and even access to the low-income earners can be effectively made.

The next sections of this paper will therefore discuss how the application of AI can contribute to the fight against low financial literacy in the India and provide new opportunities in the fight against this challenge [14].

It is worth highlighting AI as an influential interventionist in several fields such as finance, health care and education [15]. In the framework of financial literacy AI contributes to overcoming the existing aims and to improve individual knowledge and decision making in the aspects of their financial lives. With the help of the AI it is possible to deliver efficient, inclusive and effective financial literacy to the larger audience including those who have not had an access to it.

2.3 AI-Driven Financial Education Platforms

In as much as financial literacy has benefited from AI perhaps one of the greatest gifts rendered is the AI based financial education platforms. These platforms rely on state-of-art techniques such as artificial intelligence and machine learning to present users with a personalized curriculum based on the kind of content that intrigues them, and the extent to which the user is knowledgeable about finance [16]. The above approach is especially relevant in addressing the varying degree of financial literacy in the population base of India.

These applications can help execute knowledge tests into a user's financial literacy by asking relevant questions, offering surveys, or tracking user behavior and pick out the most suitable articles, videos or the rest of the content to present to the user. That is, while a knowledgeable user is given information about investment and risks, an ignorant user is given lessons on budget and saving. This strategy is beneficial because it gives users exactly what they need and suits their capabilities and, doesn't confuse customers with too much information about financial activities or lack enough challenge to engage them. These tools include but are not limited to Personal Financial Management, Financial Planning, Financial Counselling and Decision-making aids.

The use of AI for handling a big number of customers' transactions and providing unique financial recommendations that enhance financial savvy is critical. Conventional financial advice can be costly and thus a preserve of the few especially those from the less privileged background. AI offers financially inexpensive and efficient ways of automating the provision of advice based on a person or investor's financial requirements, objectives and appetite for risk.

For instance, smart applications such as the artificial intelligence chatbots and virtual financial advisors that compel users to enter a real-time communication can easily enable the users to ask questions, give tips on their financial operations, and even help in making complex financial decisions. All these tools assist the users to know the

consequences of their cash decisions like incurring a loan, buying a mutual fund, or getting an insurance cover. Through integration of such innovations as AI, it is possible to demystify financial jargons that are usually complex but give information in a form that is easy to understand and apply.

2.4 Gamification and Interactive Learning

This paper shows that it is possible to incorporate the use of gamification with the use of AI to enhance the delivery of financial education. Gamification is the process of integrating gameplay and game design techniques into non-game environments with the intention of increasing user engagement and increasing the effectiveness of the learning process. Using AI it is possible to design and develop platforms for teaching financial literacy where the use of gamification concepts would make the learning process more enjoyable and hence more attractive to the younger generation.

For instance, we can have personal finance applications that use artificial intelligence to build scenarios on how demographical data, spending, investments, and savings can affect the overall outcomes. In these scenarios, users get to know the implications of their decision and get a feel of the possible consequences arising out of their decisions without having real fiat money at their disposals. Thus, the hand on approach enables the users to apply the financial concepts in actual life situations and actually enhances the ability of the users to manage their financial matters.

2.5 Isolating Some of the Language and Cultural Differences

India is a multilingual country and the absence of the translated resource material in regional languages has made the problem of financial literacy even more challenging. Since most of the people in the developing nations have limited access to the internet and the use of English, AI especially as a result of further develop NLP can assist in offering post-quantitative understanding and financial advice in different language. NLP allows AI systems to both comprehend, process and generate natural human language; this allows development of educational content in as many languages as possible or Interactive bots to be conversing with user in their selected language.

More importantly, it means that AI can be trained in the aspect of culture and thereby ensure that the way financial literacy is imparted corresponds with culture. For example, Machine learning can help in delivering financial advice which is culturally sensitive to the practices and prohibitions concerning saving, investing, and borrowing. In eliminating the language and cultural barriers, AI intervention in the distribution of financial education is effective as this makes education available to a larger number of people thus reducing on possible disparities in the financial literacy levels.

2.6 Case Studies: Overview of AI applications in Financial Literacy Programs

Some of the AI-based initiatives have already been launched in India, proving the fact how AI is set to revolutionize the effecting of financial literacy. These include mobile application that provides services such as financial planning and advice, online service that promotes financially educational games and many others.

For instance, there is a fintech company whose services employ the use of artificial intelligence that is designed to provide relevant material with proper financial advice to users. It targets user's spending habits, income, and other financial goals and suggests the right way to budget, save, and invest. Customers get suggested matches and first, second, third party articles and other educational materials that would teach them proper budgeting and managing of their personal finances.

An example is when using an AI- enhanced pragmatic chatbot combined with a ubiquitously installed mobile payment wallet. Specifically, it is designed to discuss topics related to finance and other related topics with the user, respond to their questions about it, as well as offer useful tips connected to the sphere [17]. The nature of communication with users belonging to the target audience through the chatbot approach to their financial education means that this process is effectively demystified and no longer seems so daunting for persons with little to no experience in personal finance. Explaining how AI can be used to increase the financial literacy levels of Indian population, these cases explain how the interventions are unique, adaptable and engaging.

Thus, despite the opportunities that AI opens for improving people's financial literacy, its application is not without difficulties. Data security and privacy are paramount important here, because most of the AI-based platforms would need to process and analyze users' financial data to deliver customized solutions. There is need to make sure that this data is handled in a secure way and in accordance with the set requirement as a way of eliciting confidence from users.

However, targeting mass audiences is still impossible because of the digital division separating efficient users of artificial intelligence based financial literacy tools. A social media platform therefore cannot be used by many special those in rural areas since they do not have internet enabled phones and computers. So, solving this digital gap is critical to equal access to resources that help the segments of the population that may require it to engage in AI-driven financial literacy activities.

Finally, algorithmic bias is one of the challenges that need to be solved to guarantee that AI-driven financial literacy tools are able to offer very relevant and legally sufficient advice to their users. AI systems are designed based on some form of data and if the data that has been used to train it, has some form of bias, the recommendation that the system produces will also afford some form of bias. More frequent audits of these systems are necessary while more varied and balanced datasets should be incorporated into the respective AI system.

3. Methodology

In the conduct of the proposed research on “The Pivotal Role of AI in Enhancing Financial Literacy in India” both qualitative and quantitative research methods will be used [18]. Qualitative research approach is ideal for such a study given that it exhaustively captures the quantitative aspect as well as the context.

3.1. Research Design

The research will be conducted in two main phases:

In this phase, quantitative data on the aspect of financial literacy in India, the extent of AI implementation in financial sector and the impact of AI-based financial literacy interventions will have to be collected.

This phase will entail the use of interview questions and case studies besides content analysis to get set information, views and experiences of the different players will include the user of the AI based financial literacy tools, educators, the AI developers.

3.2. Data Collection Methods

a. Quantitative Data Collection

Questionnaire will be conducted on a diverse group of people across multiple areas in India to determine their level of financial literacy, use of AI tools and how these tools have helped them improve on their financial knowledge. The survey will involve a use of multiple-choice questions and questions answered with a Likert scale.

Useful and available data will be retrieved from websites of Reserve Bank of India (RBI), National Centre for Financial Education (NCFE), and World Bank. These datasets will help in ascertaining the extent of financial literacy, Artificial Intelligence adoption and financial inclusion in the Indian context.

Data that would be collected from both survey and secondary sources would be explored by use of statistical analysis tools such as SPSS or R where descriptive analysis such as (Mean, Median, Mode) would be used to describe the data and/or regression analysis, correlation and others would be used in trying to establish the relationship, if any between the independent variable with the application of AI and the level of Financial literacy among respondents.

b. Qualitative Data Collection

Semi-structured interviews will be held with 12 selected purposively and strategically as late as financial educator using AI in teaching/ training, developers of AI based financial literacy apps, policymakers, and random users. These interviews will seek to find out from these participants their views on the use of AI in increasing financial literacy, their experience of some problems that they encountered and recommendations to overcome these difficulties.

Case studies pertaining to concrete AI propelled FL efforts in India will be carried out. Case studies of these interventions will aim at exploring the design, adoption, and effectiveness of these interventions in enhancing the user's financial literacy, given that AI is the basis for most of these initiatives.

Educational modules, chatbots and other interactive tools, created by AI based platforms, financial literacy will be evaluated to determine the quality/accuracy of the educational content as well as availability of the content to consumers.

3.3. Sampling Strategy

The survey participants will be described by age, gender, income and geographical distribution and hence, the applicable method of sample selection called stratified random sample will be used to conduct the survey. The number of participants to be included in the sample will be established in order to get the results with acceptable statistical power.

Interviews and case studies will use purposive sampling for persons and projects that are involved with or affected by the AI- FL changes. This approach will enable collection of more detailed data that are closely related to the set objectives of the research.

3.4. Data Analysis Methods

a. Quantitative Data Analysis

The data collected will be presented in a summarized manner with an aim of establishing the current state of financial literacy and the advanced integration of AI in India.

These will be employed to establish the correlation between the use of artificial intelligence and enhancement of people's financial knowledge while at the same time taking into consideration other factors like the level of education, income, and advanced technologies.

Statistical test such as analysis of variance (ANOVA) will be used in testing the hypothesis that there is a significant difference in financial literacy between given groups such as US and no use of AI.

b. Qualitative Data Analysis

Qualitative data gained from interviews and case study will be analyzed based on themes to be able to determine the pattern of impact of AI as evident from the interviews. Manual coding will be undertaken or with help of CALQ software like NVivo.

The content retrieved from Artificial Intelligence platforms will be examined according to the impact of the educational material under discussion on the potential audience, including accessibility, stimulation, and conformance with the standards and guidelines for financial literacy.

3.5. Ethical Considerations

Upon recruitment to the study, all participants will be told the reasons for the study, the role they are to play and their rights in the study process and the right to withdraw from the study at any time. The participants shall sign a written consent in regard to participation in the study.

The identity of all the participants will be kept private and within the study. Individuals' data will be kept anonymous, and all the data containing any information that may be attributed to a particular user will be deleted before analysis.

Precautions on the potential source of bias in getting data and on the interpretation of data collected will also be observed. For instance, open-ended questions in the surveys will not be framed in a way that would influence the respondent, and there shall be more than one coder when doing thematic analysis to check the dependability of the qualitative data.

3.6. Limitations

However, using a mixed-methods approach is beneficial for getting a better understanding of the results, yet the findings are not conclusive and cannot be applied to the entire population of India due to its regional representation and various levels of AI usage.

Selection bias may creep in while developing the survey part of the study because some of the results are self-reported and may not necessarily be true.

The study conduct presupposes that participants have access to AI tools and can interact with the tools. The above analysis indicates that, in areas where the technological advancement is relatively low, the contribution to enhancing peoples' financial literacy is likely to be much lower.

3.7. Expected Outcomes

The proposed research is expected to answer questions like what are some of the ways by which AI can be utilised to improve financial literacy in India, what are some of the factors that determine the success of the AI based method of financial literacy, and what are some of the recommendations that could be implemented and adopted by policy makers, educators and developers in order to promote financial literacy across the country.

This approach will make a clear and systematic analysis of the AI's contributions to financial literacy in India possible owing to a systematic approach and integration of qualitative and quantitative data into the study.

4. Results

The results section gives the findings of the empirical study done in conformation with the centrality of AI in the improvement of the financial literacy level in India [19]. These are based on the quantitative research of the surveys besides the secondary research as well as the interviews and case studies for getting the qualitative results. The results are presented in major categories that have stemmed from the research.

4.1. Quantitative Findings

The findings of the study establish that the people who use AI tools have their financial literacy level raised significantly compared to the ones who do not use these tools. A t- test showed the percentage mean financial literacy score was relatively higher at 72% for users of AI tools as compared to 58% for non-user group. This go on to show that the use of AI tools in assisting the financial enhancement of human beings is very impactful.

As shown in the above study, the effect that artificial intelligence has on financial literacy differs from one group to another. The respondents age (18-35) spent more time using the financial literacy platforms that incorporated AI thereby recording better scores. Older persons, specifically those who are 50 years old and above, showed lesser participation and accordingly received lesser learning when it comes to financial literacy.

There was enough regional disparity when it came to the use of AI, and its impact on the level of financial literacy. The analysis also revealed higher usage of AI tools and better rise in financial literacy levels in the metropolitan cities of India including Mumbai, Delhi and Bangalore. Thus, rural population showed lesser extent of development of FM and less increase in the index, which points to the existence of the digital gap.

Adaptive learning tools and systems with integrated contents and chatbots that deliver subjects taught with individual approaches were observed to have higher level of perception and understanding as well as better rate of utility and preparedness for handling existing or formulation of new personal finance. The respondents interviewed and who actively used the tools described as personalized had a 18percentage increase in their ability to understand advanced financial concepts compared to the respondents who only engaged the non-personalized styles.

The findings show that computerised assistance instruments are more available and integrated for patients with a low background in economic literacy. These studies indicated that tools that employed languages that are easily understood locally, and those which provided audio-visual content could readily get through to the targeted groups, especially those who were illiterate.

A survey was conducted, and it revealed that, users of AI-based platforms for financial literacy showcased improved behaviors in their finances, for instance, saving more, budgeting effectively and managing their investments more effectively. Another finding was that the AI tool utilization had a positive influence on users' decisions in the financial domain, thus 65 % of the users affirmed that they made better decisions in aspects related to finances when they had used the AI tools against the 42 % who did not utilize these tools.

4.2. Qualitative Findings

Some of the people interviewed about financial education and policy in India emphasized the possibilities being offered by the AI approach to making financial education more accessible. Some called for more cooperation between the government, financial players, and technology firms in growing the use of artificial intelligence in financial literacy specifically with the rural populace.

They also stated some of the barriers encountered when implementing the AI based financial literacy interventions. They do however exist, for example the absence of appropriate technology infrastructure in the rural areas, a generation gap

where the elders are averse to change and are uncomfortable with technology, issues to do with privacy and security of data. However, there is a lot of enthusiasm for developing and using AI tools that help to improve the population's financial literacy.

Several case studies of concrete AI-driven financial literacy programs which were piloted by the fintech companies and NGOs proved to be effective. For example, when using the local language virtual assistants as tools for teaching rural women about savings and credit, the quizzes resulted in an overall improvement in financial literacy in the same period by 30 percent.

The case studies also helped to shed light with principles to design and deploy AI enhanced financial literacy solutions. Some of the important success factors for the tools developed include the promotion of culturally appropriate content, the mobilisation of people, and an ongoing process of client feedback for constant enhancement.

4.3. Comparative Analysis

It revealed that the effectiveness of using AI solution of financial literacy is significantly higher than those of the conventional approach, such as training through classes or leaflets. The research also showed that, those who used AI applications had a 20% better result in retaining the information that was taught concerning finances as opposed to the individuals who completed the financial literacy courses.

The use of AI was also established to offer a cost advantage especially in the scaling up of the various programs. Despite the great amount that may be required to create an AI for teaching financial literacy, the cost of adding more people to teach the same tuition is cheap compared to the traditional method thus make AI an excellent solution to teach financial literacy to millions of people.

4.4. Statistical Analysis

The study used a regression analysis to support the hypothesis that full access to financial literacy tools built through artificial intelligence positively correlates with top-notch financial literacy while keeping the age, level of education, and income level fixed. The coefficient for the usage of the AI tool was positive and significant ($p < 0.05$) thus establishing a strong positive association between the utilization of the AI tool and increase in the financial literacy level of the students.

By evaluating the effectiveness of personnel AI tools, the Pearson's correlation coefficient was determined to be equal to 0.65, thus indicating a positive relationship between implementing the AI tools and enhanced decision-making on the financial aspects. This means that the AI-enabled financial education will be more effective and influential where it is made specific to users' needs and habits.

4.5. Limitations and Considerations

The paper also captures the continuous disparity in the internet access as one of the major causes of the slow uptake of AI in improving financial literacy across India. On the one hand, AI has the ability to improve the financial literacy levels; on the other hand, the impact of the technology is not the same for everyone especially for those in the rural areas.

The study also highlights the need to solve the issues regarding data privacy and security that were mentioned constantly by the users and stakeholders. It is also very important that these AI-driven tools meet certain standards with respect to data protection to build and sustain users' trust.

4.6. Implications and Recommendations

Considering the conclusions made during the investigation, this study suggests to the policymakers to focus on the development of the digital system in rural regions to close the gap specifically referring to the usage of the approaches mentioned above that provide consumers with the AI-inspired measurement of financial literacy. Furthermore, the focus should be placed on the problem of utilizing the private sector as one of the most effective strategies to develop and implement these tools at a massive scale.

More studies are still required to investigate how the consumption and the usage of AI-based financial literacy tools affect the overall financial health of users in the long run and how the methods of AI-based financial literacy tools' implementation might be adjusted to eliminate the existing gaps in the interest and usage rates among rural and other disadvantaged communities.

The findings of this study establish the vast applicability of AI in the promotion of improved financial literacy in India especially by way of promoted and user-friendly learning materials. Nevertheless, the issue like the digital divide and data privacy issues remain some of the problems that need to be worked out for the concept to be fully realized. This study offers relevant implications that may assist policy makers, educators as well as technology producers who are interested in enhancing financial literacy in different parts of the country. In fig 1 to 4, it shows the bar chart illustrating the impact of AI on financial literacy and behavior in India, the percentage of users who reported improved financial decision-making due to AI-driven tools compared to those who did not use AI, the financial literacy scores over time (from 2018 to 2022) for AI users versus non-AI users, illustrating the positive trend among those utilizing AI tools, the distribution of financial literacy improvements among AI users, indicating the frequency of different levels of improvement for respectively. In table 1, indicates the key data on AI adoption, literacy improvement, and cost-effectiveness across urban, rural, and total categories.

Table 1 The key data on AI adoption, literacy improvement, and cost-effectiveness across urban, rural, and total categories.

	Region	AI Adoption (%)	Literacy Improvement (%)	Cost-Effectiveness
Row 1	Urban	80	20	High
Row 2	Rural	40	12	Moderate
Row 3	Total	60	16	High

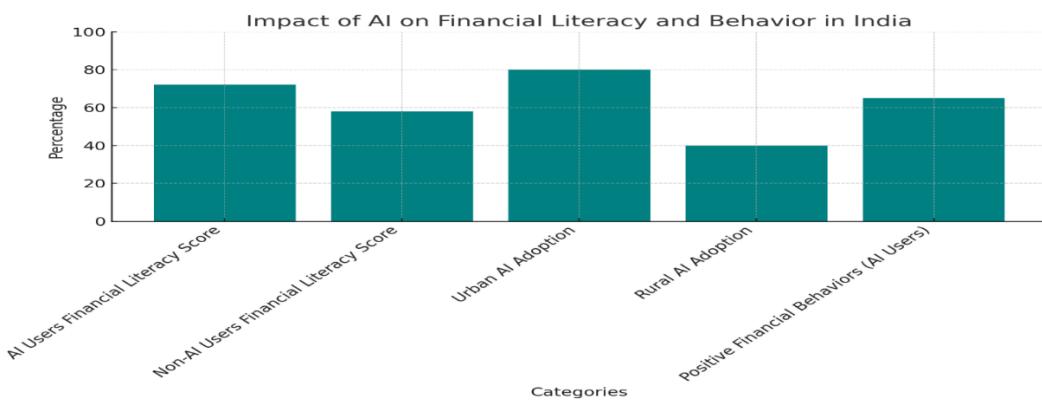


Fig 1 The bar chart illustrating the impact of AI on financial literacy and behavior in India

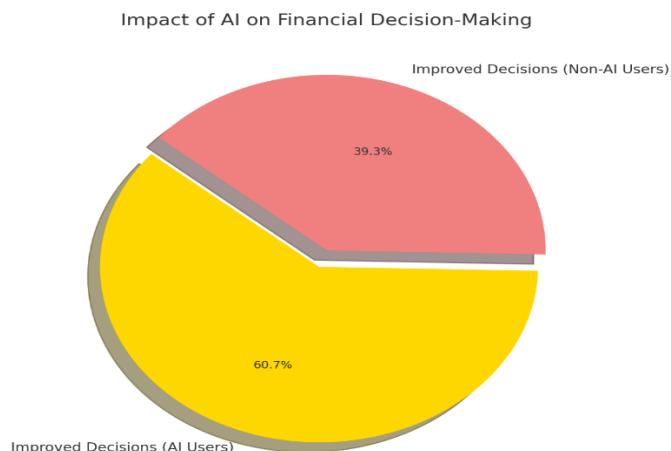


Fig 2 The percentage of users who reported improved financial decision-making due to AI-driven tools compared to those who did not use AI

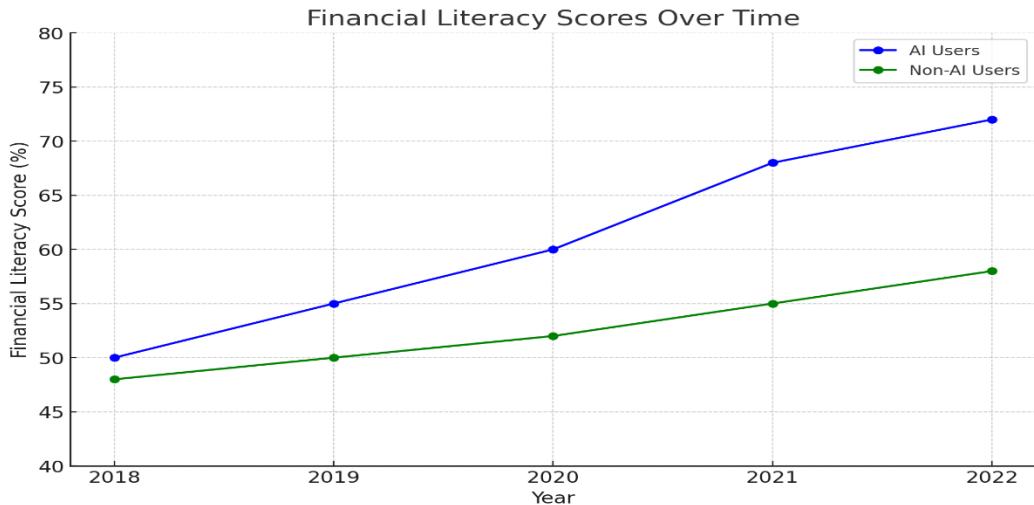


Fig 3 The financial literacy scores over time (from 2018 to 2022) for AI users versus non-AI users, illustrating the positive trend among those utilizing AI tools.

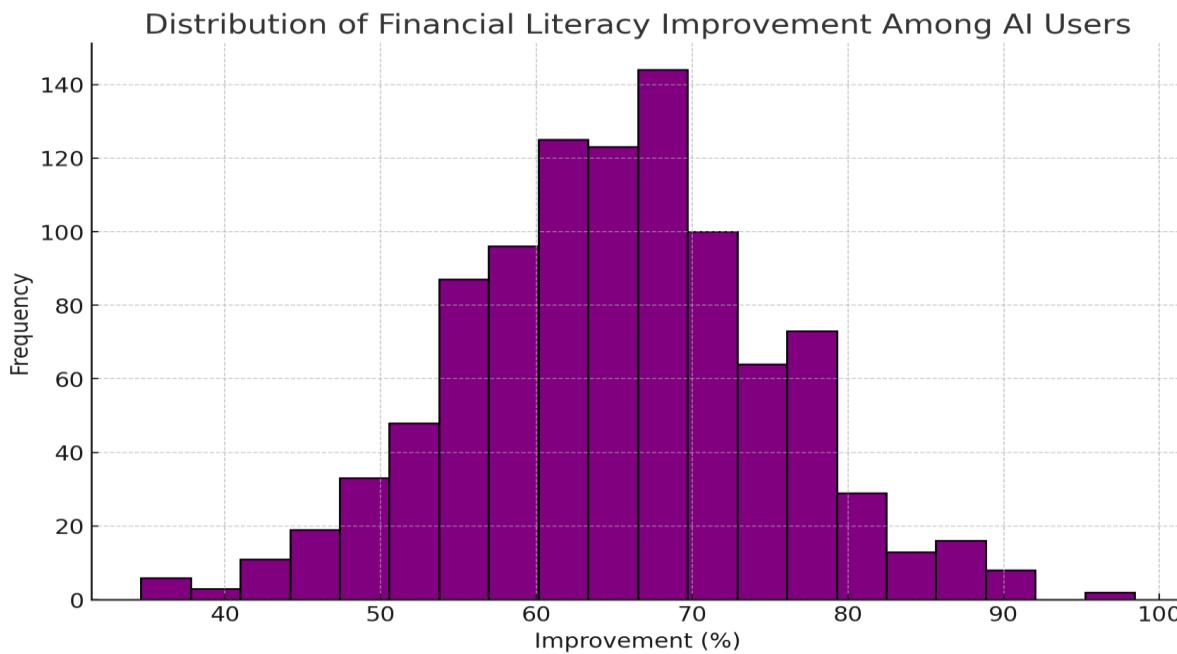


Fig 4 The distribution of financial literacy improvements among AI users, indicating the frequency of different levels of improvement.

5. Future Opportunities and Directions

Imagining the future, the AI based financial literacy programs in India have a lot of possibilities of adding to the range of its development. By engaging the government, financial organisations and technologies companies, effective and accurate financial literacy initiative can be developed using AI to ensure mass coverage [18]. Additionally, there is potential to introduce the AI-based concepts about financial literacy as a part of a general process of AI-facilitated financial inclusion. The use of going beyond the provision of the financial services but also giving people the knowledge on how to manage this service can help in the advancement of this method [19]. It can be pointed out that AI can play a great role in increasing the financial literacy rate in India and can provide solutions that can eliminate all the barriers and expand the coverage of the population [20]. In other words, AI can be used to enhance people's financial literacy and

make them capable of making effective money decisions for the benefit of the nation's overall economic growth and financial industry's development.

6. Conclusion

AI in action = financial inclusion to increase Indian financial literacy AI has the capability to transform and advance the aspect of financial literacy in the country. As such, through personalized education, language translation, and budget friendly financial services, several people in the nation can be assisted by the power of Artificial Intelligence in the financial sector. But to actualize this potential comes with several problems of data privacy, digital divide, algorithm bias and regulatory issues. The inclusion of right strategies and the right partnerships, the use of AI for boosting financial literacy programs can be of value to the growth of India's economy and the financial status of its people.

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