

Artificial Intelligence (AI) as a Moderating Variable in the Relationship Between Financial Inclusion, Digital Adoption, and Financial Literacy in Developing Economies

N S Aishwaryalaxmi^{1*}, Dr.Pralhad Rathod², and Milagrin Mary Arokiyswamy C³

^{1,3}Research Scholar, Department of Management Studies, Visvesvaraya Technological University, Belagavi.

²Associate Professor, Department of Management Studies, Visvesvaraya Technological University, Belagavi.

Abstract. This Research study has explored in an analytical how Artificial Intelligence (AI) acts as a mediating variable in the connection between digital literacy, digital adoption, and financial inclusion in developing economies. Building on prior research, which highlights the crucial part of digital financial literacy in making progress financial inclusion, this study introduces AI-driven Fintech tools as a key enabler. The findings suggest that AI enhances financial decision-making for underserved populations by simplifying complex financial tasks and bridging financial literacy gaps. This, in turn, promotes wider adoption of digital financial services, mainly in between people who has less financial knowledge. Using a sample size of 350 participants from developing economies, the study provides evidence that AI strengthens the effect of internet financial in a positive way and digital adoption on financial inclusion. The study contributes to a deeper theoretical understanding of digital adoption, highlighting AI's capacity to mitigate the adverse effects of low financial literacy. For both Fintech companies and policy-makers it gives a broader picture of how Artificial intelligence and the tools connected with it are increasing access of all financial services to the more distanced population who aren't able to connect. The study shows the Artificial intelligence connection with financial inclusion and how it transforms the extended potential in helping the increase in digital adoption which helps in developing economies and how it empowers the underserved population through the connection internet banking through the help of AI.

1. Introduction

Accessing and using formal banking financial services by each individual and markets with the business is important for economic development and modernization in developing economies, which is known as financial inclusion. Nevertheless, there are quite a few individuals in Countryside which are not able to access financial services because of factors such as poor financial knowledge, restricted entry to banks, and skepticism toward traditional financial options.

Understanding and properly utilizing financial products and concepts is crucial in enhancing banking inclusion, which is known as financial knowledge. individuals with best financial knowledge are more inclined to utilize financial products such as savings accounts, loans, and insurance. Nevertheless, in numerous emerging economies, the shortage of financial knowledge poses a major barrier to including underserved populations in rural and isolated regions.

Simultaneously, the digital banking services business has been changed by the emergence of digital technologies. The usage of digital technologies, including mobile banking, e-wallets, and online financial services, is becoming increasingly important in promoting financial inclusion. Yet, the widespread adoption of these technologies is hindered by limited digital literacy, infrastructure gaps, and mistrust in digital platforms.

Artificial Intelligence (AI) can more overly tackle the issues by improving financial knowledge and coax the use of Internet tools. AI-driven tools, such as personalized financial education, Robo-advisors, and automated digital platforms, can simplify financial decision-making for, a solo independent who has lesser digital financial literacy. bridging the gap between digital services and underserved communities. In this context, AI may play a moderating role, amplifying the relatedness between digital financial literacy, internet adoption, and financial inclusion.

This study explores the altered effect of AI on the interconnection between digital financial literacy, digital adoption, and financial inclusion, aiming to identify how AI-driven Fintech tools can trigger the usage of financial inclusion (FI) in the specific developing economies.

1.1 Financial Inclusion in Developing Economies:

Inclusive finance, which is connected to the use and access of more formal banking services by each individual and all businesses, is more important and edgy in domestic economic growth in developing economies. However, many populations in these areas remain outside the financial system, primarily because

* Corresponding author: aishlaxmi007@gmail.com

of obstacles such as poverty, lack of infrastructure, and insufficient financial literacy.

1.2 Financial Literacy as a importance of Inclusive Finance:

Financial literacy (FL) plays a very important part of increasing the promotion of Inclusion of Finance. It is once individuals ability as of how they understand the usage and how assessable and efficient to use the digital services, or even its products. (e.g., savings, credit, insurance). In developing economies, lesser levels of digital finance literacy often prevent people from participating fully in the financial system.

1.3 Digital Adoption and Financial Inclusion:

With the increase of Internet financial services, internet adoption is increasingly important for financial inclusion. Digital technologies, particularly mobile banking and online wallets, offer new ways for lower level in the populations to access Financial services. However, challenges such as limited internet access, online knowledge and trust in internet platforms hinder widespread adoption in developing regions.

1.4 The characteristic of (AI) Artificial Intelligence in banking Services :

AI is rapidly transforming the banking industry, especially in Fintech. AI-driven tools, such as robo-advisors, AI-powered chatbots, and algorithm-based on the scoring on the credit, provide personalized Banking advice, risk assessment, and automated service delivery. These tools have the capability to increase financial literacy and increase digital adoption, particularly for individuals with limited knowledge of Financial Product.

The Part of AI as a Moderating Variable

a. Enhancing the Impact of Financial Literacy:

AI-driven Fintech Tools can personalize Financial education, guide users through complex financial decisions, and lower the barriers for those with limited financial knowledge. This suggests that AI may strengthen the connection in between banking knowledge and digital financial inclusion by helping individuals better understand and use financial services.

b. Boosting Digital Adoption :

AI-powered platforms can simplify digital interfaces, making engaging with internet financial favour easier for users, even those with less digital literacy. AI tools that provide real-time assistance and automated financial management can help bridge the digital divide, particularly in rural or low-income populations.

While there is extensive literature on the roles of financial knowledge and internet adoption in digital inclusion and very few research has examined the

moderating role of AI in this relationship. Most existing research on AI in Fintech focuses on its technological innovations rather than its impact on money matters inclusion.

Developing economies, which face unique challenges such as low financial and digital literacy, present an opportunity to explore how AI can facilitate financial inclusion in such contexts. Understanding how AI can moderate the effects of banking literacy and digital adoption is crucial for addressing the financial exclusion that persists in these regions.

2. Literature Review

(Lusardi, A., & Mitchell, O. S, 2014) The research study is describing the priority of digital literacy in financial matters

to develop more in financial inclusion. It suggests that when more understanding is done on points like savings, credit, insurance, etc which are part of financial literacy the financial services are more relatable and easy to utilize.

(Atkinson, A., & Messy, F. A. , 2013) the research has shown how education how it is related to the usage of digital finance services will initiate growth and enhance digital financial literacy, that also when it comes to developing economies with less awareness of Banking services and usage

(Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J., 2018) Identified financial literacy as a major barrier to financial inclusion, particularly in low-income countries, where the restricted knowledge will limit access to all the banking services that are digital and will be less using to internet financial products and services.

(Organisation for Economic Co-operation and Development (OECD), 2016) Demonstrated the significance of financial literacy programs in increasing financial inclusion, suggesting that national strategies should focus on education to empower underserved populations.

(Jack, W., & Suri, T., 2014) Showed that digital financial services, especially mobile banking, reduce transactional costs, improving financial inclusion for remote inhabitants with limited access to formal banking.

(Donovan, K. P. , 2012) Emphasized the transformative impact of mobile money on financial inclusion in developing economies, highlighting its role in extending banking services to underserved populations.

(Claessens, S., Frost, J., Natarajan, H., & Turner, G. , 2020) Explored how digital financial platforms promote financial inclusion by overcoming geographical and infrastructural barriers in developing countries, allowing more people to access banking services.

(Gomber, P., Koch, J. A., & Siering, M., 2018) Argued that AI-driven Fintech tools can simplify financial decision-making, reducing the complexity of financial products and enabling broader financial inclusion through personalized financial advice.

(Jon Frost, Leonardo Gambacorta, Yi Huang, Hyun Song Shin & Pablo Zbinden) The researcher has described how fin-tech has evolved in the upcoming economies in the developing nations and how much the cost of operation in any financial institution, is convenient to reach the underprivileged population.

(Bazarbash, M., & Beaton, K., 2020) Digital or internet banking is more relevant to the underprivileged and underserving rural areas which has been a wider part of machine learning, and it is worth the credit due to which the digital banking services are reaching wide areas. The study also deals with how the connectivity is improved by the development in AI as well as in machine learning.

(Carrière-Swallow, Y., & Haksar, V., 2020) The research study highlights the way that privatized data and the Artificial intelligence which is mainly based on the algorithm which is help the financial tools to work smoothly and the tools would not respond if the input is not correctly addressed

(Huang, M. H., & Rust, R. T., 2021) The study described how an user friendly and less price costing platform increases the usage of financial knowledge and promotional inclusion with the help of Artificial intelligence and which will be easily accessible.

(Jagtiani, J., & Lemieux, C., 2019) The study had implications that how AI has been a greater good to all the platforms which are connecting people to technology and making it more secure and the inclusion is more reliable and easy. The AI is being the helping hand in the world of finance.

(Philippon, 2019) In fintech when it gets connected to AI it becomes more convenient and helps in cost saving the main advantage is that it helps in giving more realistic solutions which will be less time-consuming and effective and advanced, which will be more relevant to rural places and underprivileged individuals.

(Chen, L., Wu, W., & Wang, Y., 2020) Found that AI tools enhance the financial behavior of discrete with low financial literacy by providing personalized recommendations, sharing them make better financial decisions.

(Lee, I., & Shin, Y. J., 2018) Highlighted AI's role in overcoming financial literacy barriers by offering automated, simplified financial solutions, thus promoting digital adoption and Banking inclusion.

(Bank, 2017) Reported that digital financial services, mainly mobile banking, have expanded banking inclusion by providing previously excluded populations with access to official financial systems.

(Lusardi, A., 2008) Noted that individuals with restricted financial knowledge are not likely to engage with formal financial services, suggesting that education initiatives are crucial for improving inclusion.

(Demirgüç-Kunt, A., & Klapper, L., 2013) Emphasized the importance of financial knowledge in assisting financial inclusion, especially in low-income countries, where literacy gaps hinder access to banking services.

(Beck, T., & De la Torre, A., 2007) Identified banking knowledge as a crucial factor in promoting financial inclusion, particularly for low-income individuals who are often kept out from formal financial systems.

(Pazarbasioglu, C., Mora, A. G., Uttamchandani, M., Natarajan, H., Feyen, E., & Saal, M., 2020) The research shows how financial services with the help of AI can promote inclusive finance for all the underserved population which is more relevant for any field for the betterment of the existence of banking in digital.

(Donovan, K., & Tyree, P., 2011) The research shows that the internet banking or the mobile banking has increased drastically by allowing most of rural area people to get access all the financial services with just there mobile and basic internet.

(Dupas, P., & Robinson, J., 2013) The saving and investment have been increasing in recent times and that is due to the engagement of fintech in AI and banking which also has lead it in a formal way to use the internet in a concerned correctly and thus enhances the inclusion.

(Beck, T., Demirgüç-Kunt, A., & Levine, R., 2007) The research has argued and defended that the financial knowledge which is got from inclusive finance mainly in underprivileged individuals, it has given a outline shape to digital banking and to access.

(Lusardi, A., & Tufano, P., 2015) The observation made in this study is that the research is mainly an interconnection between the financial literacy and the inclusive finance, which shows that if the given more relevance and updates then the financial services will reach heights and make reformative changes.

(Suri, T., & Jack, W., 2016) The study has found how digital banking functions and mainly mobile banking which has recently increased in developing nation with financial tools.

(Jentzsch, N., 2007) Argued that AI-driven platforms can enhance financial literacy by providing personalized financial education, enabling individuals with limited knowledge to make informed financial decisions.

(Carlin, B. I., & Robinson, D. T., 2012) Showed that financial literacy training are important for promoting financial inclusion, particularly in low-income regions where each individual person are not likely to use formal financial services.

(Aker, J. C., Boumrijel, R., McClelland, A., & Tierney, N., 2016) Demonstrated that digital banking services, mainly Internet banking, improve digital financial inclusion financial inclusion by providing convenient access to financial services for previously unbanked populations.

(Dupas, P., & Robinson, J., 2011) prioritizing the greatness of financial literacy in promoting financial inclusion, seeing that individuals with greater financial knowledge are more likely to engage with formal financial services.

3. Objectives

For the investigation of the moderating role of AI in relatedness between money related literacy, digital adoption, and financial inclusion in developing economies.

1. To investigate the result of knowledge of finance on digital adoption in developing economies.

2. To analyse the relationship between digital adoption and financial inclusion.

3. To analyse the direct impact of financial knowledge on financial inclusion.

4. To investigate the diminishing role of AI in the relationship between financial literacy and digital adoption.

5. To assess the mediating assess of AI on the relation inbetween digital adoption and financial inclusion.

6. To identify specific AI-driven Fintech tools that enhance financial knowledge and internet adoption.

3.1 Research Questions:

Q1: How does financial knowledge impacts digital adoption and inclusive finance in progressing financial resources?

Q2: How does internet adoption impact inclusive finance?

Q3: Whats the main part of AI-driven Fintech in moderating the connection between financial knowledge and digital adoption?

Q4: How does AI influence the connection in the middle digital adoption and financial inclusion, particularly in populations with low financial literacy?

This section systematically introduces the study, making it high spotting the significant of financial literacy, digital adoption, and the potential of AI to elaborate Banking inclusion in developing economies, setting the stage for the research.

Conceptual Model of Financial Literacy, Digital Adoption, Financial Inclusion, and AI Moderation

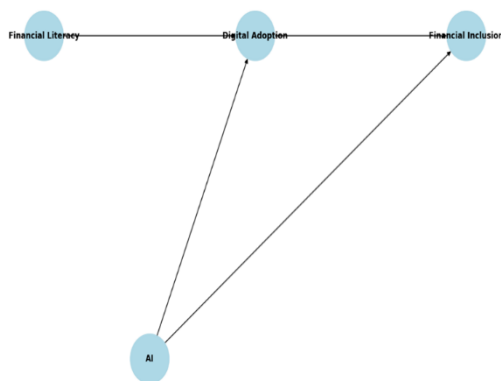


Fig. 1. Conceptual design of Financial Literacy, Digital Adoption, Financial Inclusion, and AI Moderator

4. Conceptual Model

The conceptual model will include three main constructs:

4.1.1 Financial Literacy: Knowledge and know the banking concepts that authorizing individuals to make correct decisions in finance matter.

4.1.2 Digital Adoption: The acceptance and usage of internet financial jobs and tools, which facilitate easier access to financial resources.

4.1.3 Financial Inclusion: the steps which are accurate in acceptance of all the services in finance for all individuals, especially those in underserved populations.

4.2 Moderating Variable

AI-Driven Fintech Tools: Technology that uses artificial intelligence to enhance financial services,

improve user experiences, and support better decision-making in financial contexts.

Relationships

Direct Effects:

- a. Financial Literacy → Digital Adoption
- b. Digital Adoption → Financial Inclusion
- c. Financial Literacy → Financial Inclusion

4.3 Moderating Effects:

AI-Driven Fintech Tools moderating the linking between:

Financial knowledge and Internet Adoption.
Digital Adoption and Financial Inclusion.

4.4 Hypothesis Development

4.4.1 H1: Financial literacy positively influences digital adoption.

4.4.2 H2: Digital adoption positively affects financial inclusion.

4.4.3 H3: Financial knowledge has been a direct imposition on inclusive finance.

4.4.4 H4: AI mediating the relation between banking literacy and digital adoption, enhancing the impacts of financial knowledge on digital adoption.

4.4.5 H5: AI moderates the connection in-between online adoption and inclusive finance, strengthening the impacts of online adoption on financial implementation.

4.5 Diagram Representation:

You may want to represent this framework in a diagram, with arrows showing the relationships between the constructs, labeling direct effects and moderating influences. Here's a suggested layout:

- **Financial Literacy → Digital Adoption → Financial Inclusion**
- **Financial knowledge → fiscal Inclusions**
- **AI (Moderates):**
 - Between Financial knowledge and Digital Adoption
 - Between Digital Adoption and digital banking Inclusion

5. Research Methodology:

The research has been made by both primary and secondary types of data collection to investigate the moderating role of AI-driven Fintech tools in the relation in connect money matter literacy, digital adoption, and Banking inclusion in developing economies.

5.1 Primary Data: Primary data was gathered through structured structured questionnaire through the google form and hard copies of the questions , distributed to a sample of 350 individuals across developing economies. The survey will focus on assessing the respondents' financial literacy, digital adoption behaviours, and their engagement with AI-driven Fintech tools. The data way collected by

stratified random sampling method by which the survey sample respondent by the presence of various socio-economic backgrounds, geographic locations (urban and rural), and use the technology of internet. A sample size of 350 is chosen to give a statistically significant representation, allowing for detailed subgroup analyses and ensuring reliable estimates in structural equation modelling (SEM).

5.2 Secondary Data: Secondary data was sourced from reports on banking inclusion published by organizations like the World Bank and IMF, and also data from Fintech platforms operating in developing economies. The AI-powered tools are more inclusive oriented and allows most of the validation and the primary data collected will give an accurate details for the study. This data will provide insights into trends in online financial works, financial inclusion metrics, and the usage of AI-powered financial tools. These secondary data sources will complement the primary data by offering context for the research and allowing for the validation of findings against national and global benchmarks.

5.3 Analysis Technique

The data collected will be analysed by **SEM have more elaborated and more accurate** to SEM is one of the best analyzing and measuring is appropriate analytical tool for this research, as it is, this helps in visual representation on the result and the parts of each individual factors

5.4.1 Direct Effects: The analysis of SEM paths shows the effect of literacy banking on the adoption of digital.it will impact on the usage and the limitation.

5.4.2 Moderation Effect of AI: The fin-tech has an most moderating effects and test the financial knowledge adoption of digital banking engagements AI, Specifically, the research will assess how AI tools enhance the impact of financial knowledge on digital adoption and how AI impacts the connection interlink online internet adoption and financial inclusion.

The final of this analysis will help to quantify the influence of AI-driven Fintech on financial inclusion, highlighting how AI can bridge gaps for individuals with lesser stages of financial knowledge and digital proficiency in developing economies.

6. Analysis

The sample of 350 respondents from developing economies includes a diverse range of individuals from both villages and city areas. The descriptive analysis reveals the following key insights (Table 1):

- **Financial Literacy:** the respondents have voted of the average of 4.2 on a 7-point scale, indicating moderate knowledge of basic financial products and concepts.
- **Digital Adoption:**68% of the response reported using at least one form of digital banking services, such as mobile banking or e-wallets. However, 32% have never used digital

financial platforms, primarily due to a lower level of internet literacy or to use technology.

- **AI Tool Usage:** Engagement with AI-driven Fintech tools remains relatively low, with only 23% of respondents reporting regular use of AI-powered tools like robo-advisors, chatbots, or automated financial management systems.
- **Financial Inclusion:** Approximately 60% of the people who responded have the accessibility to banking work digitally such as bank savings or even the credit , while the remaining 40% are still excluded from these services.

Table 1. Calculated Variables

Variable	.Mean	.Std. Dev.	Percentage (%)
Financial Literacy	4.2	1.1	-
Digital Adoption	-	-	68
AI Tool Usage	-	-	23
Financial Inclusion	-	-	60

6.1 SEM Results:

The Structural Equation Modelling (SEM) study was calculated was drawn and to analyze the connection among finance knowledge, digital adoption, and financial inclusion, and also the moderating effect of AI-driven Fintech tools. The model fit statistics indicate a good fit:

Chi-square (χ^2) = 250.6
CFI. = 00.92
TLI. = 00.90
RMSEA. = 00.05

The key SEM results are as follows:

6.1.1 Financial Literacy → Digital Adoption:

There has been a great and important connection between banking knowledge and internet adoption ($\beta = 0.45, p < 0.01$). this shows us the high and effective levels of financial literacy positively influence the likely of adopting internet banking services.

6.1.2 Digital Adoption → Financial Inclusion:

The relating the link between digital adoption and financial inclusion was also +ve and significant ($\beta = 0.61, p < 0.01$), suggesting that each part which was implementation of digital banking services which are most likely to, be financially and moderately included.

6.1.3 Moderating Effect of AI-Driven Fintech (AI × Financial Literacy):

AI-driven Fintech tools significantly moderated the relation in between financial knowledge and digital adoption ($\beta = 0.31, p < 0.01$). This indicates that individuals with lower financial

knowledge benefited more from using AI-powered tools, enhancing their digital adoption.

6.1.4 Moderating Effect of AI-Driven Fintech (AI × Digital Adoption): AI-driven tools also moderated the connection in-between digital adoption and inclusive finance ($\beta = 0.28, p < 0.05$), showing how the AI tools enhanced financial inclusion, particularly for individuals who initially struggled with adopting digital financial services.

Table 2. SEM results through the paths

Path	Standardized Estimate (β)	p-value
Financial Literacy → Digital Adoption	0.45	< 0.01
Digital Adoption → Financial Inclusion.	0.61	< 0.01
AI × Financial Literacy → Digital Adoption	0.31	< 0.01
AI × Digital Adoption → Financial Inclusion	0.28	< 0.05

6.2. Hypothesis Testing

6.2.1 H1: Financial literacy positively affects digital adoption. Supported. The SEM results demonstrate a significant positive in the relatable link between banking knowledge and digital adoption, confirming that each person are with high Banking knowledge are more likely to use digital financial services.

6.2.2 H2: Digital adoption +vly affects financial inclusion. Supported. The strong +ve relation connection digital adoption and financial inclusion indicates that increased and the utilization of digital banking services or work will lead them to more positive impact in inclusion .

6.2.3 H3: AI-driven Fintech mediating the relationship between online banking knowledge and digital adoption. Supported. The moderation analysis shows that the AI-driven Fintech tools amplify the affect of banking and digital knowledge on digital adoption, particularly for individuals with lower financial literacy.

6.2.4 H4: AI-driven Fintech moderates the relation connected digital adoption and financial inclusion. Supported. The interaction between AI-driven tools and internet adoption positively influences financial inclusion, showing that AI tools help connect the gap for those less familiar with internet financial services.

6.3. Key Findings

6.3.1 Financial Literacy and Internet Adoption:

The digital banking knowledge has been observed that the findings got are more enhanced and have adopted the digital financial Services. We can observe that individuals who know and have knowledge are more

capable of using the data and services efficiently and are more capable enough to handle the same.

6.3.2 Digital Adoption and Financial Inclusion:

Digital inclusive finance and the digital banking and financial inclusion are more interconnected to each other, we can say that as a person has more banking and financial knowledge on the basis of the internet then automatically he will have enhanced knowledge in overcoming the inclusion.

6.3.3 AI-Driven Fintech as a Moderator:

By the study and research done, we can observe that Artificial intelligence acts as a mediating variable and if there is a growth in fintech then there will be more innovation in the field of digitalization, it connects the dot between internet banking, transformation and also inclusion.

6.4. Comparison with Previous Studies

The findings align with existing literature, which emphasizes the part of financial knowledge in enhancing financial inclusion.

Through the literature review, we can observe that there has been no study in the field of moderating variables and connection between digital banking, innovation, digital financials and the connection with the Fintech and this study was on the realistic observation by the real respondent and the data was real-time thus, the results were comparatively more realistic.

7. Implications

7.1 Theoretical Implications

The research makes a greater contribution in the literature of all the academic work and it enhances the usage of AI- enhanced Fin-tech link Banking literacy, digital adoption, and financial inclusion. While previous research has often focused on financial literacy and digital adoption independently, this study integrates AI as a pivotal factor that enhances both processes. It also shows how the adoption of Artificial intelligence and upcome the obstacles of less financial knowledge.

7.2 Practical Implications

The experimental implications of this study is equally significant. For **Fintech companies**, the results suggest that there is immense potential in investing in AI-driven tools that are tailored to populations with low financial literacy. These tools, such as AI-powered chatbots, robo-advisors, and personalized financial management platforms, can bridge the knowledge gap, enabling underserved communities to engage with internet financial officiates effectively. This, in turn, can lead to an increasing customer base and higher financial inclusion rates in developing regions.

This can be achieved by the relationship between the public sector and private sector connectivity and partnerships that support the development and distribution of AI-driven tools targeting rural and low-income populations. Governments could also introduce financial incentives or tax breaks for Fintech companies

that invest in AI technologies aimed at enhancing financial literacy and inclusion. Additionally, integrating AI-driven financial literacy programs into national educational curricula can further foster financial awareness and digital adoption.

7.3 Implications for Digital Adoption

The results demonstrate that **enhancing digital adoption** through AI tools can create more inclusive financial ecosystems, particularly in rural and underbanked areas. By leveraging AI, Fintech platforms can simplify the process of digital engagement, making it easier for each person with low digital literacy to access and use financial services. AI-powered systems can also reduce the complexity associated with financial products, enabling users to make informed decisions with less effort. This has the potential to significantly increase the utility of inclusive finance rates in regions where digital connectivity and financial knowledge are limited. In urban/rural or underprivileged areas, AI-driven tools can reduce the geographical and infrastructural barriers that often hinder digital adoption, and this in turn gets more individuals to get into digital financial services and adoption of Internet banking and get them into financial environment.

8. Limitation and Future Research

8.1 Limitations

Even when the research has been with the research gap but still each research has its own limitation in itself, The study is stagnant to **specific developing economies**, which may result in growth. Differences in regulatory environments, technological infrastructure, and cultural attitudes toward financial services across countries may lead to varying results in different settings. Additionally, the research relies on **self-reported data** for finance knowledge and digital adoption, which may introduce bias. Respondents might overestimate or underestimate their knowledge and usage, impacting the accuracy of the findings.

8.2 Future Research Directions

Future research should explore the main of AI in financial inclusion over **longer time periods** to assess its sustained impact on individuals and communities. Longitudinal studies could provide insights into how continuous exposure to AI-driven tools influences financial literacy, digital adoption, and banking inclusion over time. Moreover, **comparative studies** across various areas or income groups would offer a more nuanced understanding of how AI impacts specific demographic segments, particularly in conditions of gender, income inequality, or rural vs. urban differences. Additionally, futuristic research could study how **emerging technologies**, such as blockchain and the Internet of Things (IoT), alongside AI, influence financial literacy and inclusion. These technologies are increasingly integrated with Fintech platforms, and understanding their combined effects on underserved populations could provide a more comprehensive framework for enhancing financial inclusion.

9. Conclusion:

This study understands the crucial role of AI-driven Fintech tools in engaging financial influence in developing nations' wealth. The results demonstrate that AI serves as a powerful moderating variable, amplifying the +ve effects of financial knowledge and reports and digital adoption on inclusive finance. Specifically, AI-driven tools help bridge the gap for individuals with lower financial literacy, enabling them to better engage with digital banking works and, ultimately, participate in formal banking system.

The findings contribute to the growing body of literature on financial inclusion by providing empirical evidence of AI's potential to address literacy gaps and drive digital adoption.

To increase digital banking and Money Central inclusion in developing economies, Fintech companies should prioritize the development of AI-driven platforms that simplify financial decision-making, particularly for individuals with low financial literacy.

The financial dome or the system will have an access usage in the growth in digital financial literacy and inclusion will be reduced in the underprivileged regions Artificial intelligence can change the current scenario and connect the dots which has given a drastic gap between the people. It enhances the economy which helps in developing strong digital banking.

This research gives a foundation or a baseline for the further study for all the researchers and policymakers to get more accurate results and fulfil the gap between the AI and Banking.

References

1. Dupas, P., & Robinson, J. . (2011). Why don't the poor save more? Evidence from health savings experiments. . *American Economic Review*, 101(2), 1138-1171. doi: <https://doi.org/10.1257/aer.101.2.1138>
2. Aker, J. C., Boumnijel, R., McClelland, A., & Tierney, N. . (2016). Payment mechanisms and antipoverty programs: Evidence from a mobile money cash transfer experiment in Niger. . *Economic Development and Cultural Change*, 65(1), 1-37. doi: <https://doi.org/10.1086/6>
3. Atkinson, A., & Messy, F. A. . (2013). Promoting financial inclusion through financial education: OECD/INFE evidence, policies, and practice. . *OECD Working Papers on Finance, Insurance and Private Pensions*, 34. doi:<https://doi.org/10.1787/5k3xz6m88smp-en>
4. Bank, W. (2017). The Global Findex Database 2017: Measuring financial inclusion and fintech revolution. . *World Bank Group*. doi: <https://doi.org/10.1596/978-1-4648-1259-0>
5. Bazarbash, M., & Beaton, K. . (2020). Fintech, inclusive growth and cyber risks: Focus on the MENAP and CCA regions (IMF Departmental

- Papers). *International Monetary Fund*. doi:<https://doi.org/10.5089/9781513546410.087>
6. Beck, T., & De la Torre, A. . (2007). The basic analytics of access to financial services. . *Financial Markets, Institutions & Instruments*, 16(2), 79-117. doi:<https://doi.org/10.1111/j.1468-0416.2007.00120.x>
 7. Beck, T., Demirgüç-Kunt, A., & Levine, R. . (2007). Finance, inequality and the poor. . *Journal of Economic Growth*, 12(1), 27-49. doi: <https://doi.org/10.1007/s10887-007-9010-6>
 8. Carlin, B. I., & Robinson, D. T. . (2012). What does financial literacy training teach us? *The Journal of Economic Education*, 43(3), 235-247. doi:<https://doi.org/10.1080/00220485.2012.686385>
 9. Carrière-Swallow, Y., & Haksar, V. . (2020). The economics and implications of data: An integrated perspective. . *International Monetary Fund*. doi:<https://doi.org/10.5089/9781513545970.087>
 10. Chen, L., Wu, W., & Wang, Y. . (2020). The impact of AI-driven financial literacy enhancement on consumer financial behavior. *Technological Forecasting and Social Change*, 120204., 160. doi:<https://doi.org/10.1016/j.techfore.2020.120204>
 11. Claessens, S., Frost, J., Natarajan, H., & Turner, G. . (2020). Fintech credit markets around the world: Size, drivers, and policy issues. . *Bank for International Settlements (BIS) Working Papers*, 809. doi: <https://doi.org/10.2139/ssrn.3520405>
 12. Demirgüç-Kunt, A., & Klapper, L. (2013). Measuring financial inclusion: Explaining variation in use of financial services across and within countries. *Brookings Papers on Economic Activity, Spring*, 44(1), 279-340. Retrieved from https://www.brookings.edu/wp-content/uploads/2016/07/2013a_klapper.pdf
 13. Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. . *World Bank Group*. doi: <https://doi.org/10.1596/978-1-4648-1259-0>
 14. Donovan, K. P. . (2012). Mobile money for financial inclusion. In T. Kelly & C. Rossotto *Information and communications for development 2012: Maximizing mobile(World Bank)*, 61-73. doi: https://doi.org/10.1596/9780821389911_CH05
 15. Donovan, K., & Tyree, P. (2011). Mobile money: Implications for financial inclusion and consumer protection. *CGAP Brief*, 15, 1-8. doi:DOI:10.1596/9780821389911_ch04
 16. Dupas, P., & Robinson, J. (2013). Savings constraints and microenterprise development: Evidence from a field experiment in Kenya. . *American Economic Journal: Applied Economics*, 5(1), 163-192. doi:<https://doi.org/10.1257/app.5.1.163>
 17. Gomber, P., Koch, J. A., & Siering, M. (2018). Digital finance and FinTech: Current research and future research directions. *Journal of Business Economics*, 88(5), 537-580. doi:<https://doi.org/10.1007/s11573-018-0914-3>
 18. Huang, M. H., & Rust, R. T. . (2021). A strategic framework for artificial intelligence in marketing. . *Journal of the Academy of Marketing Science*, 49(1), 30-50. doi:<https://doi.org/10.1007/s11747-020-00749-9>
 19. Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, 104(1), 183-223. doi:<https://doi.org/10.1257/aer.104.1.183>
 20. Jagtiani, J., & Lemieux, C. (2019). The roles of alternative data and machine learning in fintech lending: Evidence from the lending club consumer platform. *Financial Management*, 48(4), 1009-1029. doi:<https://doi.org/10.1111/fima.12295>
 21. Jentzsch, N. . (2007). Financial exclusion in developed countries: A European perspective. . *Public Money & Management*, 27(1), 21-28. doi:<https://doi.org/10.1111/j.1467-9302.2007.00552.x>
 22. Jon Frost, Leonardo Gambacorta, Yi Huang, Hyun Song Shin & Pablo Zbinden. (n.d.). BigTech and the changing structure of financial intermediation. *Economic Policy Review*, 25(1), 41-58. Retrieved from <https://www.bis.org/publ/work779.pdf>
 23. Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. *Business Horizons*, 61(1), 35-46. doi:<https://doi.org/10.1016/j.bushor.2017.09.003>
 24. Lusardi, A. (2008). Financial literacy: An essential tool for informed consumer choice? . *National Bureau of Economic Research*, NBER Working Paper Series, (No. 14084). doi: <https://doi.org/10.3386/w14084>
 25. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. . *Journal of Economic Literature*, 52(1), 5-44. doi:<https://doi.org/10.1257/jel.52.1.5>
 26. Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics and Finance*, 14(4), 332-368. doi:<https://doi.org/10.1017/S1474747215000232>
 27. Organisation for Economic Co-operation and Development (OECD). (2016). *OECD/INFE International Survey of Adult Financial Literacy Competencies*. OECD. doi:<https://doi.org/10.1787/9789264254855-en>
 28. Pazarbasioglu, C., Mora, A. G., Uttamchandani, M., Natarajan, H., Feyen, E., & Saal, M. (2020). Digital financial inclusion in action: Emerging insights from country cases. . *World Bank Group*. doi: <https://doi.org/10.1596/33648>
 29. Philippon, T. (2019). On fintech and financial inclusion. NBER . *National Bureau of Economic Research*, Working Paper Series, (No. 26330). . doi:<https://doi.org/10.3386/w26330>
 30. Suri, T., & Jack, W. . (2016). The long-run poverty and gender impacts of mobile money. . *Science*,

354(6317), 1288-1292.
doi:<https://doi.org/10.1126/science.aah5309>