Navigating the Connections Among 'Financial Inclusion', Digital Lending Adoption, and Financial Literacy in India: The Mediating Role of Artificial Intelligence

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Abstract:

With an eye towards "Artificial Intelligence (AI)," this paper looks at the relationship between "digital lending adoption," "digital financial literacy," and "financial inclusion" in India. Based on earlier studies showing the critical need of "digital financial literacy" in advancing "financial inclusion," the article underlines the significance of financial technology solutions enhanced by artificial intelligence as a primary facilitator. The findings show that by streamlining complex financial duties and tackling financial literacy gaps, artificial intelligence helps low-income people "financial decision-making" better. This helps, especially for people with low financial literacy, more acceptance of digital lending services. Comprising 692 participants from Indian sub-continent, the study shows that artificial intelligence increases digital lending adoption on "financial inclusion" and generally increases the impact of online banking. The study underlines how artificial intelligence could minimise the negative consequences of insufficient financial literacy, thereby improving a theoretical knowledge of digital lending acceptance. For those in decision-making and fintech innovation, it shows a larger view of how artificial intelligence and related technologies are enabling access to complete financial services for underprivileged populations with limited connection. The study highlights artificial intelligence's transforming power in improving the acceptance of digital lending and shows its link with "financial inclusion." This development is very important for developing countries since it helps poor people by means of digital lending enabled by artificial intelligence.

Keywords: Artificial Intelligence, 'financial inclusion', Financial Literacy, Digital lending, Structural Equation Model

Introduction:

In emerging economies, "financial inclusion" is a significant concept that is crucial for economic advancement and modernisation. This idea relates to the use and availability of financial services recognised by both people and markets. Many inhabitants of the countryside continue to face challenges in accessing financial services due to factors such as limited financial literacy, restricted access to banks, and a lack of trust in conventional financial options. The progress of financial inclusion, often referred to as financial literacy, relies on an understanding of and effective utilisation of financial products and concepts. People with strong financial skills are much more likely to interact with savings accounts, loans, and insurance, as well as other financial tools. However, the lack of "financial literacy" in many developing countries poses a considerable challenge to the inclusion of disadvantaged communities in rural and remote areas.

The evolution of digital technology has concurrently transformed the realm of ‘digital financial services’. The gradual enhancement of financial inclusion relies on the utilisation of digital technologies, encompassing credit services. However, insufficient digital literacy, subpar infrastructure, and a lack of trust in digital lending platforms all hinder the effective utilisation of these technologies. By enhancing financial literacy and promoting the use of Internet tools, artificial intelligence (AI) can more effectively address challenges. AI-driven solutions such as targeted financial education, robo-advisors, and automated digital platforms can assist with financial decision-making for a self-directed individual with limited digital financial literacy. connecting uncharted regions through digital loan initiatives. In this context, artificial intelligence may serve as a moderator, thereby enhancing the connection between ‘financial inclusion’, digital financial literacy, and the acceptance of technology. This paper explores the changed influence of artificial intelligence on the connection between digital financial literacy, digital lending acceptance, and financial inclusion. The aim is to determine how "AI-driven Fintech" technologies can enhance the adoption of "financial inclusion" (FI) in particular developing nations.

In developing nations, the utilisation and availability of formal financial services for individuals and enterprises play a crucial role in fostering home economic development, as demonstrated by inclusive finance. However, poverty, inadequate infrastructure, and a lack of financial literacy continue to leave many local populations in these areas largely disconnected from the financial system. Enhancing the promotion of 'financial inclusion' relies on financial literacy, or FL. It relates to a person's ability to understand the use and availability of digital services and their related products (e.g., insurance, credit, savings). In developing countries, a lack of digital financial literacy often hinders individuals from fully engaging with the financial system.

In recent years, "financial inclusion" has emerged as a crucial global goal, aimed at ensuring access to financial services that are both affordable and adequate, especially for individuals who have been historically underserved or excluded from the formal financial system. Innovative methods to address this inequality have developed alongside the digital age; digital lending platforms have emerged as a significant force for ‘financial inclusion’. For individuals who are unbanked or underbanked, these online platforms connect borrowers directly with lenders, thereby bypassing conventional economic intermediaries and potentially providing a pathway to greater economic access. Digital lending platforms signify a significant shift in the traditional lending landscape by employing a direct, decentralised approach that connects individual borrowers with lenders through online platforms, effectively eliminating the need for intermediaries such as banks. This innovative concept has attracted the interest of global stakeholders as a viable method to improve financial inclusion and lessen the gap between the financially privileged and the underprivileged.

The feature of (AI) artificial intelligence in digital lending services:

AI is transforming digital lending by streamlining procedures, enhancing credit evaluations, and elevating client experiences. This leads to quicker loan approvals, improved risk management, and tailored loan products.

AI-based lending systems streamline the lending process through the application of machine learning techniques. AI-based lending operates by utilising data analytics to evaluate creditworthiness, risk, and various factors that affect the probability of loan default. Real-time data analysis enables lenders to enhance their decision-making regarding loan size, approval thresholds, and the interest rates they offer.

Alongside machine learning (ML) and Gen-AI, artificial intelligence (AI) empowers financial institutions to identify borrowing trends, thereby reducing the risk of defaults. By employing machine learning techniques, banks can swiftly assess creditworthiness and make timely loan decisions through the efficient analysis of large amounts of data. Incorporating artificial intelligence into lending policies offers a significant advantage: it minimises bias and enhances the accuracy of credit scores.

Literature Review:

The presence and use of different financial services provide a range of advantages. People with savings accounts are more equipped to handle their spending during tough times, protect their money more efficiently, and improve their chances of seizing profitable investment opportunities (Lusardi, 2019). Moreover, facilitating risk-taking and promoting innovation and technology within society is finance (Atkinson et al., 2007) . This is especially important considering the low incomes in the farm sector. The study indicates that access to agricultural finance enhances incomes, ultimately contributing to an increase in agricultural GDP (Claessens et al., 2018). Enhancing financial inclusion in the country relies on understanding the true level of inclusion. All Indian States have made efforts to establish a relevant metric for 'financial inclusion' (Demirgüç-Kunt & Klapper, 2013). The indicators for 'financial inclusion' utilised in India have primarily focused on scheduled commercial banks (‘OECD/INFE 2023 International Survey of Adult Financial Literacy, 2023a’), for instance, utilises the three criteria of banking penetration, accessibility, and usage. Many of the other studies have developed indices using associated indicators. (Jack & Suri, 2014) The study of 'financial inclusion' in India has garnered significant interest from extensive literature. Undoubtedly, ‘financial inclusion’ has emerged as the primary development challenge in recent years. However, much of the research regarding the connection between 'financial inclusion' and social progress lacks a coherent foundation. Theoretically, (Suri & Jack, 2016), (I. Lee & Shin, 2018), (Donovan, 2012) laid the groundwork. Earlier studies produced some interesting results: economies with better financial systems often grow quicker. Furthermore, (Claessens et al., 2018) discovered a high positive correlation between long-term economic development and financial system efficiency using the Generalised Method of Momentum (GMM). Human development and gender equality are positively impacted by ‘financial inclusion’, according to (Jack & Suri, 2014), (Gomber et al., 2017) and others. According to (Jones & Knaack, 2019), income, urbanisation, literacy, physical and electronic connectedness all influence ‘financial inclusion’ in some way. (Dupas & Robinson, 2013) find that per capita income, rule of law, and demographic composition are somewhat strongly correlated with ‘financial inclusion’. (Promoting ‘financial inclusion’ through Financial Education, 2013) examine the elements influencing ‘financial inclusion’ in India using the index for ‘financial inclusion’. The research indicates that population, income, and literacy-related variables greatly affect the degree of ‘financial inclusion’ and thereby influence socioeconomic elements as well. (Majid Bazarbash et al., 2020) investigated the factors influencing ‘financial inclusion’ in India. The research makes advantage of data obtained from the ‘Reserve Bank of India (RBI)’ and the ‘Central Statistical Organisation (CSO)’. The research employs digital lending penetration, availability, and the utilisation of financial services to develop a comprehensive ‘financial inclusion’ index. The multiple regression analyses of the study indicate that the percentage of agriculture in the GDP, the literacy rate, the population density, and the degree of infrastructure development significantly influence 'financial inclusion'.

Through the utilisation of ‘fixed effects (FE)’ and ‘dynamic panel generalised method of moments (GMM)’ techniques, panel data comprising 29 states and union territories were utilised from the years 1995 to 2008, (Ouma et al., 2017) investigated the situation of India in terms of ‘financial inclusion’ and the elements influencing ‘financial inclusion’. Using a composite index, (Philippon, 2019) built a ‘two-stage Principal Component Analysis (PCA)’ to assess a nation's or region's degree of ‘financial inclusion’. ‘Per capita GDP’, ‘level of education’, ‘financial system efficiency’, and ‘financial strength’ are, they found, the most crucial markers of ‘financial inclusion’. Many research have indicated that enrolling individuals in the financial stream helps them to better their financial status. Still, certain research gaps exist. The present work on the building of composite indices makes use either parametric or non-parametric approaches. Studies by (C.-C. Lee et al., 2023a) and (Aggarwal & Jaggi, 2024a) employed non-parametric techniques. In keeping with this, (Kock, 2015) used PCA and factor analysis respectively to create composite indexes. According to (Yang & Lee, 2016), "‘financial inclusion’ is a critical enabler to reduce poverty and enhance prosperity. By means of financing for the founding of new businesses or enterprises, ‘financial inclusion’ can raise the income of the underprivileged (Morgan, 2022).

(Carriere-Swallow & Haksar, 2019) arrived at a composite index of 'financial inclusion' by use of the PCA technique using the financial indicators variables taken under consideration by (Swiecka et al., 2020). Major determining elements of 'financial inclusion' are micro-level ones like age, gender, educational level, and income level of persons and households (Huang, 2018). Higher quality of institutions is motivating to improve financial inclusiveness, according to (Coakley & Huang, 2023), who examined data from 75 developed and emerging nations over the period 2004–2017.

The existing literature indicates that only a limited number of studies have examined the factors influencing 'financial inclusion,' and the majority of these are specific to individual nations. The majority of the research constructs the index utilising non-parametric techniques. To grasp the essence of 'financial inclusion' and the factors influencing it, a thorough examination is essential. This paper examines the extent of variation between states in India regarding the level of 'financial inclusion' through a composite index created using a two-stage PCA approach. This paper examines and highlights the factors impacting 'financial inclusion' in India (LUSARDI & TUFANO, 2015). The report highlights the significance of digital literacy in financial matters to enhance 'financial inclusion'. It suggests that financial services become more pertinent and user-friendly when there is a greater understanding of topics such as savings, credit, insurance, and other elements that make up financial literacy.

This innovative concept has garnered the attention of global stakeholders as a feasible approach to enhance "financial inclusion" and reduce the disparity between the financially privileged and the underprivileged (Atkinson et al., 2007). In low-income countries, access to digital banking services is significantly limited because of a lack of knowledge, resulting in reduced use of online financial products. The lack of financial literacy has been recognised as a key barrier to achieving "financial inclusion" (Demirgüç-Kunt & Klapper, 2013).

('OECD/INFE 2023 International Survey of Adult Financial Literacy, 2023b') Emphasised the need of financial literacy initiatives in raising 'financial inclusion' and advised national policies to centre education in order to empower underprivileged groups. (Beck & De La Torre, 2007) illustrated how 'digital financial services'—particularly 'mobile banking' —reduce transactional costs, thereby enhancing 'financial inclusion' for remote residents with limited access to traditional banking institutions. (Donovan, 2012) Emphasised its part in providing banking services to underprivileged people and the transforming power of mobile money on 'financial inclusion' in underdeveloped countries. (Claessens et al., 2018; Fornell & Larcker, 1981) investigated how, by removing infrastructure and geographical constraints in underdeveloped nations, digital financial platforms enable more individuals to use banking services, therefore promoting 'financial inclusion'. (Gomber et al., 2017) argued that by means of tailored financial advice, AI-driven Fintech technologies can simplify financial decision-making, therefore lessening the complexity of financial goods and promoting larger 'financial inclusion'. (Frost et al., 2019) has elucidated the evolution of 'fintech' in emerging economies and the extent to which operational costs in financial institutions facilitate access for underserved populations.

(Majid Bazarbash et al., 2020) Digital lending holds significant relevance for disadvantaged and underserved rural areas, serving as a broader component of machine learning. Credit is due as digital financial services are achieving extensive reach among large populations. Additionally, the paper discusses how advancements in machine learning and artificial intelligence improve connectedness (Aker et al., 2016). The research project emphasises the way privatised data and artificial intelligence, mostly based on the algorithm, assist the financial tools to operate smoothly and the tools would not react if the input is not effectively handled. (C.-C. Lee et al., 2023b) elucidated how a readily accessible, user-friendly, and cost-effective platform amplifies the application of financial knowledge and promotes inclusivity through the integration of 'artificial intelligence'.

(Jagtiani & Lemieux, 2019) The study had consequences that how artificial intelligence has been a larger good to all the platforms which are linking people to technology and making it more secure and the inclusion is more trustworthy and easier. In the realm of finance, the AI serves as the assisting hand.(Philippon, 2016) The primary advantage of the intersection between financial technology and artificial intelligence lies in its ability to deliver more practical

solutions that are not only efficient but also sophisticated and time-saving. This will hold greater significance for rural communities and disadvantaged populations. (CHEN et al., 2018) Found that by offering personalised advice, AI systems improve the financial behaviour of those with little financial literacy by means of better financial decisions.

(Shin & Choi, 2019) Emphasised AI's ability to provide automated, simplified financial solutions that help to overcome financial literacy challenges, hence encouraging digital lending adoption and 'financial inclusion'. By giving formerly excluded people access to legitimate financial systems, digital financial services—mostly mobile banking—have increased 'financial inclusion'. (Lusardi, 2008) Noted that people with limited financial knowledge are not likely to interact with official financial services, implying that education programs are quite important for raising inclusion. Emphasised the need of financial knowledge in supporting 'financial inclusion', especially in low-income nations where literacy gaps limit access to banking services, (Demirguc-Kunt et al., 2018)

(Mahdzan et al., 2023) Particularly for low-income people who are usually excluded from official financial institutions, identified banking education as a key component in fostering 'financial inclusion'.(Gibson et al., 2024) demonstrate how financial services can promote inclusive finance for all the marginalised population with the assistance of artificial intelligence is more pertinent for any field in the digital banking sector. The majority of rural residents now access all financial services using only their cell phone and rudimentary internet, as indicated by the studies. This has significantly altered the landscape of internet banking or mobile banking.

The engagement of fintech in artificial intelligence and digital lending has effectively guided its appropriate use of the internet, thereby enhancing inclusion. Recently, there has been an expansion in saving and investment. The studies have indicated that the financial knowledge gained through inclusive finance, particularly among impoverished individuals, has provided a fundamental basis for digital banking and access. The analysis reveals that the investigation mainly examines the connection between 'financial literacy' and 'inclusive finance', indicating that with heightened focus and improvements, financial services could attain substantial progress and encourage transformative changes (Aggarwal & Jaggi, 2024b). (Le Fur & Outreville, 2022) shown that, especially in low-income areas where each individual person is not likely to use official financial services, financial literacy courses are crucial for encouraging 'financial inclusion'. (Syahwildan & Hidayah, 2024) shown that by giving previously unbanked populations easy access to financial services, digital banking services—mostly Internet banking—increase digital 'financial inclusion' and 'financial inclusion'. Seeing that those with more financial understanding are more inclined to interact with official financial services, (Goyal & Kumar, 2021) give financial literacy top priority in fostering 'financial inclusion'.

Objectives:

1. To investigate how financial literacy impacts Indian acceptance of digital lending methods.
2. To examine how the acceptance of digital lending influences the progress of "financial inclusion".
3. To examine the direct effect of financial literacy on 'financial inclusion'.
4. To examine the shrinking impact of AI on the correlation between financial literacy and digital lending adoption.
5. To evaluate the mediation effect of AI on the relationship between digital lending adoption and 'financial inclusion'.
6. To pinpoint particular AI-driven Fintech instruments that augment financial literacy and internet utilisation.

Conceptual Model:

The conceptual model will encompass three primary constructs:

'Financial Literacy': Grasping financial concepts that enable individuals to make knowledgeable financial choices.

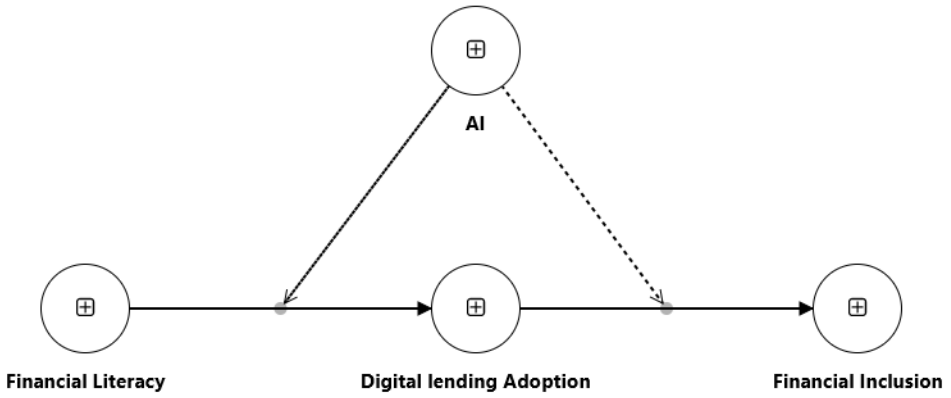
'Digital lending adoption': The acceptance and utilisation of online financial roles and instruments that enhance accessibility to financial resources.

''financial inclusion'': the measures that ensure the accessibility of financial services for all persons, particularly those in marginalised communities.

Moderating Variable:

'AI-Driven Fintech Tools':

Technology based on 'artificial intelligence' that enhances financial services improves user experiences and motivates better financial decisions.



The figure above illustrates the conceptual framework, with arrows indicating the relationships among the constructs, highlighting direct effects and moderating influences.

- 'Financial Literacy' → Digital lending Adoption →'financial inclusion'
- 'Financial knowledge' → 'financial inclusion'
- 'AI' (Moderates): 'The relationship between financial knowledge and digital lending adoption'
  'AI' (Moderates): 'The connection between digital lending adoption and financial inclusion'

Hypothesis Development:

H1: There is a significant impact of financial literacy on the adoption of digital lending
H2: There is a significant impact of adoption of digital lending on 'financial inclusion'.
H3: The Role of AI-Driven Fintech in Facilitating the Connection Between digital lending Proficiency and the Adoption of Digital Lending.
H4: AI-driven Fintech influences the relationship between digital lending adoption and 'financial inclusion'.

Research Methodology:

The research employed a combination of primary and secondary data collection techniques to investigate the moderating effect of AI-driven Fintech technologies on the relationship among financial literacy, digital lending adoption, and financial inclusion in India.

Data was gathered through a standardised questionnaire utilising Google Forms and physical copies, distributed to a sample of 692 individuals across India. The research will focus on assessing participants' financial literacy, their habits regarding digital lending adoption, and their engagement with 'AI-driven Fintech' solutions. The data was collected through a stratified random sampling method, which ensured that survey participants reflected a variety of socio-economic backgrounds, geographic regions (including both urban and rural), and levels of internet usage. A sample size of 692 is utilised to ensure a statistically significant representation, enabling thorough subgroup analysis and guaranteeing accurate estimations in Partial Least Squares structural equation modelling (PLSSEM).

Data was gathered from publications on 'financial inclusion' issued by organisations like the World Bank and IMF, along with information from Fintech platforms in developing countries. The AI-powered tools are designed with inclusivity in mind and facilitate the verification of primary data collected, ensuring accurate information for the research. This data will provide insights into trends in online financial activities, indicators of 'financial inclusion', and the use of AI-driven financial solutions. The incorporation of these secondary data sources will enrich the original data by offering contextual insights for the research and aiding in the validation of findings in relation to national and global standards.

The collected data will be analysed through PLS-SEM, offering a more advanced and accurate method for conducting Structural Equation Modelling. This analytical tool is appropriate for this research, as it allows for a visual representation of the results and the contributions of each individual element. The study of SEM routes uncovers the influence of financial literacy on the uptake of digital technologies. It will impact the utilisation and the limitations. The moderating influence of artificial intelligence reveals that 'financial inclusion' plays a significant role in shaping financial literacy and the adoption of digital lending. The study will assess the extent to which AI tools enhance the impact of financial knowledge on the adoption of digital lending and explore the connection between online internet adoption and 'financial inclusion' as influenced by AI. This research will assess the influence of AI-driven Fintech on financial inclusion, highlighting how AI can help bridge gaps for individuals with limited financial literacy and digital skills in developing countries.

Analysis and Interpretation:

The sample of 692 respondents from emerging economies includes a diverse group of individuals from both rural and urban areas. The analytical overview reveals the following key findings (Table 1):

The survey results indicate that participants assessed their comprehension of basic financial products and concepts at an average of 4.2 on a 7-point scale, implying a moderate level of financial literacy. A notable 68% of respondents reported using at least one form of digital lending service, such as mobile banking or e-wallets. However, 32% have not yet interacted with digital lending platforms, primarily due to a reduced skill level in internet usage or technology adoption. The use of AI tools in financial technology is significantly restricted, with only 23% of participants reporting regular interaction with AI-driven solutions like 'robo-advisors', 'chatbots', or 'automated financial management systems'.

'Financial inclusion': Approximately 60% of respondents utilise digital banking services, such as savings accounts and credit options, while the remaining 40% lack access to these vital services.

Variable	Mean	Std. Dev.	Percentage (%)
'Financial Literacy'	3.4	3.1	-
'Digital lending adoption'	-	-	72
'AI Tool Usage'	-	-	32
''financial inclusion''	-	-	70

The 'Structural Equation Modelling (SEM)' study was conducted to analyse the relationships among 'financial knowledge', 'digital lending adoption', and ''financial inclusion'', as well as the moderating effect of 'AI-driven Fintech' tools. The model fit statistics suggest a satisfactory alignment:

- 'Chi-square (χ^2)' = 530.6
- 'CFI' = 0.96
- 'TLI' = 0.89
- 'RMSEA' = 0.03

The following is a discussion of the most important discoveries that emerged from the SEM analysis:

- It is worth noting that there is a noticeable and substantial association between the concept of "financial literacy" and the adoption of digital lending, as indicated by the coefficient of 0.36 and the p-value of less than 0.01. The evidence presented here suggests that having a high level of financial literacy that is both effective and efficient considerably increases the likelihood of using digital loan services.
- The adoption of digital lending leads to the integration of financial services: The statistical analysis revealed that there is a positive and statistically significant association between the adoption of digital lending and the concept of "financial inclusion" ($\beta = 0.48$, $p < 0.01$). Taking this into consideration, it can be concluded that the introduction of digital banking services is likely to improve the concept of "financial inclusion" to a marginal degree.
- The moderating effect of 'AI-Driven Fintech' (also known as 'AI × Financial Literacy'): The impact of AI-driven Fintech tools on the correlation between 'financial literacy' and the adoption of digital lending was shown to be statistically significant ($\beta = 0.26$, $p < 0.01$). It appears from this that persons who have a weak understanding of finance have benefited more from the usage of tools driven by artificial intelligence, which has made it easier for them to accept digital lending.
- The influence of 'AI-driven tools' on the relationship between digital lending adoption and inclusive finance was observed ($\beta = 0.32$, $p < 0.05$). This indicates that these AI tools significantly contributed to enhancing 'financial inclusion', particularly for individuals who encountered difficulties in adopting digital financial services. The term 'AI-driven fintech' refers to the combination of human intelligence and digital lending adoption.

Path	Standardized Estimate (β)	p-value
'Financial Literacy → Digital lending adoption'	0.36	< 0.01
'Digital lending adoption → 'financial inclusion''	0.48	< 0.01
'AI × Financial Literacy → Digital lending adoption'	0.26	< 0.01
'AI × Digital lending adoption → 'financial inclusion''	0.32	< 0.05

Hypothesis Testing:

H1: There is a significant impact of financial literacy on the adoption of digital lending

Accepted. The SEM results demonstrate a notable positive correlation between banking knowledge and the adoption of digital lending, suggesting that individuals possessing a high level of banking knowledge are more inclined to utilise digital financial services.

H2: There is a significant impact of adoption of digital lending on 'financial inclusion'.

Accepted. The strong positive relationship observed between the adoption of digital lending and 'financial inclusion' indicates that greater use of digital banking services is likely to enhance inclusion outcomes.

H3: The Role of AI-Driven Fintech in Facilitating the Connection Between digital lending Proficiency and the Adoption of Digital Lending.

Accepted. The analysis reveals that AI-driven Fintech tools significantly amplify the impact of banking and digital knowledge on the adoption of digital lending, particularly for individuals with lower financial literacy levels.

H4: AI-driven Fintech influences the relationship between digital lending adoption and 'financial inclusion'.
Accepted. The relationship between AI-driven tools and the adoption of internet technologies positively influences 'financial inclusion', indicating that AI tools help to close the gap for individuals who are less familiar with internet-based financial services.

Findings:

The relationship between financial literacy and internet adoption reveals that the insights gained indicate a significant enhancement in knowledge regarding digital banking, alongside an increased adoption of digital lending services. It is evident that individuals possessing knowledge and expertise demonstrate a greater capacity for the efficient utilisation of data and services, as well as an enhanced ability to manage them effectively.

The adoption of digital lending is intricately linked to the broader concept of 'financial inclusion'. It can be posited that an individual's proficiency in banking and financial matters, facilitated by internet access, significantly contributes to their ability to navigate and address issues of inclusion effectively.

'AI-Driven Fintech' as a Moderator: Through the conducted study and research, it is evident that Artificial Intelligence serves as a mediating variable. An increase in fintech correlates with heightened innovation within the realm of digitalisation, thereby establishing connections among internet banking, transformation, and inclusion.

The findings are consistent with the existing literature, which underscores the role of financial knowledge in promoting 'financial inclusion'. The literature review indicates a notable absence of research concerning moderating variables and the interrelations among digital banking, innovation, digital financials, and their association with Fintech. This study is grounded in empirical observations derived from actual respondents, utilising real-time data, thereby enhancing the realism of the results obtained.

Implications:

Theoretical Implications:

This research significantly contributes to the present body of literature by extending the application of artificial intelligence-enhanced financial technology in the context of financial literacy, the adoption of digital lending, and the promotion of "financial inclusion." Artificial intelligence is a substantial component that improves both "financial literacy" and the adoption of digital lending, two areas that have generally been explored in isolation by previous research. This study is the first of its kind to add artificial intelligence as a significant component that improves both of these topics.

In addition to this, it serves as an example of the use of artificial intelligence and tackles the problems that arise as a result of a lack of understanding of financial matters.

Practical Implications:

Furthermore, the study's practical consequences are also very important. In light of the findings, it appears that lending institutions could potentially reap significant benefits from investing in AI-driven solutions that are specifically developed for groups that demonstrate poor levels of financial literacy. Through the utilisation of tools

such as "AI-powered chatbots," "robo-advisors," and customised "financial management platforms," it is possible to overcome the knowledge gap, which in turn makes it easier for underprivileged groups to effectively engage with internet financial officials. Consequently, this phenomenon may lead to an increase in the number of customers and an increase in the percentage of people who are considered to be "financially included" in emerging countries.

The accomplishment of this purpose is dependent on the interaction between the public sector and the business sector, as well as partnerships that promote the creation and dissemination of AI-driven solutions that are aimed at providing assistance to low-income and rural people. There is a possibility that governments would introduce financial incentives or tax reductions for lending institutions that commit resources to the development of artificial intelligence technology meant to increase financial literacy and promote inclusiveness. This is a feasible scenario. Furthermore, the introduction of AI-driven financial literacy initiatives into national educational frameworks has the potential to increase financial awareness and promote the adoption of digital lending practices. This is because of the potential for these initiatives to generate financial literacy.

Implications for the Adoption of Digital Lending

The findings indicate that the expansion of digital lending adoption through the use of technologies that are powered by artificial intelligence has the potential to establish more inclusive financial ecosystems, particularly in regions that are underbanked and rural. This is especially true in areas where individuals do not have access to traditional banking services. Financial technology platforms have the ability to streamline the process of digital lending engagement through the utilisation of artificial intelligence. This, in turn, makes it easier for individuals with poor digital literacy to have access to and make use of certain financial services. In order to simplify the complexities that are involved with financial products, systems that are powered by artificial intelligence have the ability to simplify them. This will enable customers to make decisions that are well-informed while requiring less work on their part. On the other hand, this has the potential to dramatically improve the efficiency of inclusive finance rates in locations that are characterised by insufficient internet access and financial literacy. Tools that are powered by artificial intelligence have the potential to alleviate the geographical and infrastructural constraints that commonly impede the adoption of digital technology in urban and rural areas, particularly in locations that are facing economic hardship. This is possible because these tools have the ability to overcome these constraints. This development makes it simpler for individuals to engage with digital financial services and embrace digital finance, which ultimately leads to their absorption into the ecosystem of the financial system. As a consequence, this result is a consequence of the development.

Limitation and Scope for Future Research:

Limitations:

In spite of the fact that this study fills a huge void in the existing body of research, it is essential to keep in mind that every single study has its own individual set of limitations. This particular analysis is restricted to specific developing economies, which may have potentially substantial implications for growth. The scope of this particular analysis is limited to these economies. It is conceivable for various countries to have distinct regulatory frameworks, technological infrastructures, and cultural attitudes on financial services. This might result in varied outcomes depending on the context in which they are applied. The research is also relying on self-reported data regarding financial understanding and technology usage, which has the potential to introduce bias into the findings. Moreover, the research is currently being conducted. There is a risk that participants will either overstate or understate their degree of knowledge and participation, which will have a substantial impact on the extent to which the results are accurate.

Scope for Future Research:

In the years to come, research should be conducted to investigate the function that artificial intelligence plays in the concept of "financial inclusion" across longer time frames. This will allow for an evaluation of the effects that it has on both individuals and communities over the course of that time period. There is the possibility for longitudinal research to yield useful information regarding the influence of persistent exposure to AI-driven technology on financial literacy, the acceptability of digital lending, and the progression of 'financial inclusion' over the course of time. These insights might be uncovered through the utilisation of research that is longitudinal in nature. In addition, comparative studies that are conducted across a number of different areas or income brackets would provide a more in-depth understanding of the ways in which artificial intelligence effects particular demographic subgroups. This is especially true with regard to issues such as gender, wealth discrepancy, or differences between rural and urban contexts. Specifically, this is the case. Furthermore, future research may explore the impact that various developing technologies, such as "blockchain" and the "Internet of Things (IoT)," in conjunction with artificial intelligence, have on the financial literacy and inclusion of persons that are affected by these technologies. The use of these technologies into lending platforms is becoming an increasingly standard practice with growing frequency. It is possible that a more sophisticated framework for the promotion of "financial inclusion" might be developed as a consequence of an exhaustive examination of the collective impact that these technologies have on groups who are economically disadvantaged.

Conclusion:

This research illuminates the critical role that "AI-driven financial technology" tools play in shaping the financial influence that is prevalent in the wealth of developing nations. According to the findings, artificial intelligence operates as a substantial moderating variable, which has the effect of amplifying the positive effects that financial literacy, reporting, and the adoption of digital lending have on inclusive finance. Tools that are powered by artificial intelligence specifically help bridge the gap for those who have a lower level of financial literacy. This makes it easier for these persons to interact with digital banking systems, which ultimately leads to increased involvement in the formal banking sector. The findings contribute to the current corpus of literature on "financial inclusion" by providing empirical evidence regarding the ability of artificial intelligence to bridge literacy gaps and increase the acceptance of digital lending.

It is essential for lending institutions to concentrate on the development of AI-driven platforms that are intended to simplify financial decision-making in order to promote "financial inclusion" and enhance digital lending in developing economies. This is particularly crucial for those who possess inadequate financial literacy. In regions that are economically disadvantaged, there will be a reduction in the availability and utilisation of the financial framework, particularly in terms of the advancement of digital financial literacy and inclusion. Artificial intelligence has the capacity to transform the current landscape and to unite humans, as well as to bridge the immense divide that currently exists. The economy's improvement is a contributing factor in the development of robust digital banking systems.

This research lays the groundwork for later investigations by establishing a foundational framework. This framework will allow academics and policymakers to acquire more precise results and address the gaps that currently exist within the junction of artificial intelligence and the lending ecosystem.

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