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The role of financial technology in enhancing financial literacy & inclusion among low-income households in India

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DOI: https://doi.org/10.33545/26633329.2023.v5.i1a.118

Abstract
Financial literacy and inclusion are essential to economic development, as they facilitate access to financial services and empower individuals to make informed decisions about their money. Despite India's impressive economic growth in recent years, a significant portion of the population, particularly low-income households, struggles with financial literacy and access to financial services. Financial technology (fintech) has emerged as a potential solution to address these challenges by providing innovative and accessible financial services to underserved communities.

This paper examines the role of fintech in enhancing financial literacy and inclusion among low-income households in India. The study is based on a comprehensive review of existing literature and interviews with key stakeholders in the Indian fintech industry.

The analysis reveals that fintech has the potential to significantly improve financial literacy and inclusion among low-income households in India. One key advantage of fintech is its ability to provide low-cost and convenient financial services, such as mobile banking and digital payments, which can help to reduce the financial barriers faced by low-income households. Additionally, fintech platforms can offer financial education and training programs to increase financial literacy and promote responsible financial behavior.

Despite these benefits, however, several challenges are associated with using fintech to promote financial inclusion and literacy in India. One major obstacle is the need for digital infrastructure and internet connectivity in many rural areas, which limits access to fintech platforms. Additionally, there is a need for increased regulation and oversight of the fintech industry to ensure that consumers are protected from fraud and other risks.

To overcome these challenges, the study recommends several policy measures that can support the development of fintech in India, including investment in digital infrastructure, the promotion of financial education and literacy programs, and the establishment of regulatory frameworks to ensure consumer protection and prevent fraud.

In conclusion, fintech has the potential to play a significant role in enhancing financial literacy and inclusion among low-income households in India. However, to fully realize these benefits, policymakers must address the challenges associated with fintech adoption and ensure that fintech platforms are developed responsibly and sustainably. By doing so, India can significantly promote inclusive economic growth and reduce poverty and inequality.

Keywords: Financial technology, financial literacy, financial inclusion low-income households, India, digital financial services, mobile banking, digital payments, microfinance, financial education

Introduction
Financial literacy and inclusion are critical components of economic development, enabling individuals to access financial services and make informed decisions about their money. In India, a significant portion of the population, particularly those from low-income households, continues to face barriers to accessing financial services and achieving financial literacy. This lack of financial inclusion can contribute to poverty, inequality, and economic instability.

Financial technology, or fintech, has emerged as a potential solution to address low-income households’ challenges in accessing financial services and achieving financial literacy. Fintech encompasses a range of digital financial services and platforms that leverage technology to provide innovative and accessible financial products and services. By such high costs, lack of physical access, and limited financial literacy.
India has seen significant growth in fintech in recent years, with a range of digital platforms and services emerging to cater to the needs of underserved communities. These include mobile banking services, digital payment platforms, peer-to-peer lending, and online investment platforms. These fintech solutions have the potential to significantly enhance financial literacy and inclusion among low-income households by providing low-cost and convenient financial services, offering financial education and training programs, and promoting responsible financial behavior.

Despite the potential benefits of fintech, several challenges must be addressed to ensure its effective implementation and adoption. These include limited access to digital infrastructure and internet connectivity in rural areas, lack of consumer trust in digital financial services, and the need for regulatory frameworks to protect consumers from fraud and other risks associated with fintech.

This paper will examine the role of fintech in enhancing financial literacy and inclusion among low-income households in India. The study will be based on a comprehensive review of existing literature and interviews with key stakeholders in the Indian fintech industry. The paper will also explore the challenges and opportunities associated with adopting fintech in India and provide recommendations for policymakers and industry stakeholders to promote the responsible and sustainable development of fintech. This study aims to contribute to the ongoing conversation about the role of fintech in promoting inclusive economic growth and reducing poverty and inequality in India.

**Literature review**

*Digitalization and financial inclusion of lower middle-income ASEAN, Hway-Boon Ong, Shaista Wasiuzzaman, Lee-Lee Chong, Shay-Wei Choon, 2023*

Recent studies reasoned that digitalizing business processes support financial inclusion, resulting in more excellent economic activities and growth. Digital financial inclusion is argued to be accessible to some privileged and digitally savvy individuals. However, digitalized financial services only sometimes guarantee financial inclusion. This study examines how digitalizing business processes might instill financial inclusion in lower-middle-income ASEAN economies. Based on the Diffusion of Innovation (DOI) theory, the digitalization of business processes is modeled by fixed high-speed broadband and mobile and cellular subscriptions as a predictor of financial inclusion. The pooled mean group estimation of the autoregressive distributed lag (ARDL) model is employed to determine the
effect of digitalization on the financial inclusion of Cambodia, Indonesia, Laos, Myanmar, the Philippines, and Vietnam economies. The key finding is the significance of digitalization in inducing the financial inclusion of lower-middle-income ASEAN economies. The digitalization of business processes significantly affects the accessibility of private businesses to domestic credit provided by their banks.

The interplay of skills, digital financial literacy, capability, and autonomy in financial decision making and wellbeing, Parul Kumar, Rekha Pillai, Neha Kumar, Mosab I. Tabash, 2023

Covid-19 and the unprecedented surge in financial technology contributed to unexpected financial challenges, affecting the relevance of financial decision-making and perceived financial well-being. This paper examines the mediating effects of digital financial literacy, financial autonomy, financial capability, and impulsivity on financial decision-making and perceived financial well-being. The data come from 512 respondents in Delhi/NCR (National Capital Region), India, using a snowball-sampling technique and partial least squares structural equation modeling to test 13 structural hypotheses with SmartPLS3.3. Partial least squares (PLS) prediction is employed to estimate the out-of-sample predictive power of the proposed model. Our findings reveal that skills directly affect financial decision-making and perceived financial well-being, and digital financial literacy emerges as a direct and mediating predictor of financial decision-making. The dominance of financial capability and financial autonomy as mediators in financial decision-making and well-being becomes more evident, and impulsivity fails to mediate financial decision-making. The results have academic, regulatory, and managerial implications, all of which call for more concerted efforts at recognizing the unique interaction among skills—financial decision-making—perceived financial wellbeing, the cumulative effect of which enhances the critical ability to deal with environmental challenges, sustainably manage socioeconomic pressures, and translate the benefits into prudent gender-specific policy decisions and practices.

Determinants of financial inclusion in South Asia: The moderating and mediating roles of internal conflict settlement, Muntasir Murshed, Rizwan Ahmed, Raad Mahmoud Al-Tal, Chamaiporn Kumpamool, Witchulada Vetchagool, Rafael Alvarado, 2023

Financial inclusion is recognised as a critical enabler of the 2030 Sustainable Development Goals agenda of the United Nations. Hence, this study investigates the impacts of internal conflicts, economic growth, information and communications technology, institutional quality, and remittance inflows on financial inclusion in selected South Asian countries. Notably, the independent and moderating/mediating effects of internal conflict settlement on financial inclusion are explored for the countries of concern. Overall, the results from the econometric analysis reveal that internal conflict resolution, higher mobile subscriptions, and lower levels of corruption improve financial inclusivity. In contrast, higher economic growth inhibits financial inclusion in South Asia. Further, resolving internal conflicts indirectly boost financial inclusion by moderating the economic growth-financial inclusion nexus and mediating the remittance inflows-financial inclusion relationship. In line with these key findings, several financial inclusion-related policies are recommended to help promote financial inclusivity across South Asia.

The asymmetric effects of institutional quality on financial inclusion in the Asia-pacific region, Loan Thi Hong Van, Nhan Thien Nguyen, Hung Le-Phuc Nguyen, Duc Hong Vo, 2022

Financial inclusions are generally effective in supporting sustainable economic growth in emerging markets. While the symmetric effects of institutional quality on financial inclusion have been widely investigated, their asymmetric effects have largely been ignored in existing literature, particularly for emerging markets. In this paper, we estimate the financial inclusion index for 19 countries in the Asia-Pacific region from 2004 to 2020. The institutional quality is proxied by five indicators, including (i) business sophistication, (ii) regulatory quality, (iii) investment freedom, (iv) government effectiveness, and (v) the rule of law. The advanced panel smooth transition technique ensures that the asymmetric effects of institutional quality on financial inclusion are substantiated depending on the income level across countries in the sample. We find that institutional quality's effects on financial inclusion are asymmetric depending on the income level. Our findings indicate that middle-income countries such as Vietnam and other emerging nations in the Asia-Pacific region mainly benefit from the positive effects of institutional reform to ensure more inclusive economic growth in the future.

Information Technology and Quantitative Management (ITQM 2017) Developing a Financial Inclusion Index for India, Sweta Goel, Rahul Sharma, 2017

Finance has always been considered one of the critical parameters of growth for any economic activity. The economic growth of a country can be enlarged by using financial inclusion as a bridge that would facilitate fuller participation by weaker sections of the country. Financial inclusion is a system through which a developing country like India can attain inclusive growth by connecting the contribution of the weaker or rural population of the country with the mainstream. If there is easy access to weaker sections of the country's financial system, the country can move towards higher economic growth. In the available literature, it has been found that one or the other indicator is absent for different reasons. However, each indicator is essential for calculating the more comprehensive financial inclusion index. The main objective of this paper is to introduce an index that allows for a general overview of India in terms of financial inclusion. The index is calculated using three dimensions related to measuring the levels of access and usage of financial services.

Determinants of financial risk attitude among the handloom micro-entrepreneurs in North East India, Kishor Goswami, Bhabeash Hazarika, Kalpana Handique, 2017

The rural non-farm micro-entrepreneurial activities in the informal sector hold significance in generating employment and removing poverty and income inequality. The handloom industry in India holds a distinctive place in the Indian economy as it is the second largest provider of rural employment after agriculture. The North Eastern states of
India account for more than 65 percent of the total handloom households in India. However, with only 4.26 percent of the total working looms utilized for commercial purposes, the industry is beset with manifold problems such as obsolete technologies, unorganized production systems, low productivity, inadequate working capital, and weak market linkages. Therefore, undertaking financial risk plays here a defining role in overcoming these obstacles. Based on the primary data collected from 332 respondents, the present study analyses determinants of the financial risk attitude of the handloom micro-entrepreneurs using the Ordinal Probit model. Education, access to credit, access to training, and individual income play a crucial role in influencing the risk aversion of microentrepreneurs. These determinants are found to have a more dominant influence in lowering the risk aversion of female micro-entrepreneurs as compared to male micro-entrepreneurs. The study suggests providing vocational education and training programs focusing on entrepreneurship education to rural female micro-entrepreneurs. Besides, it suggests providing and implementing various financial inclusion programs for easy access to credit with proper follow-up programs to ensure the efficient utilization of credit, with a primary focus on female micro-entrepreneurs.

Variation and determinants of financial inclusion and their association with human development: A cross-country analysis, Soumyendra Kishore Datta, Krishna Singh, 2019

The paper attempts to analyze the financial inclusion scenario across several developed and developing countries for 2011 and 2014. The study focuses on developing a financial inclusion index (FII) and exploring its association with the human development index. It also focuses on the explanation of variation in observed FII. The principal component method has been applied to calculate the three dimension indices (availability, access, and usage) and, finally, FII. A pooled OLS with clustered standard error regression model has been used to explain the factors influencing financial inclusion across the world's countries.

Objectives
1. Evaluate the current state of financial literacy and inclusion in India, focusing on the challenges low-income households face in accessing financial services and achieving financial literacy.
2. Analyze the potential of fintech in addressing these challenges and promoting financial inclusion and literacy among low-income households in India.
3. Examine the existing fintech solutions and platforms that cater to the needs of underserved communities in India and evaluate their effectiveness in promoting financial inclusion and literacy.
4. Identify the challenges and opportunities associated with adopting fintech in India, and analyze the implications of these factors for developing fintech solutions for low-income households.
5. Provide recommendations for policymakers and industry stakeholders to promote the responsible and sustainable development of fintech solutions that can enhance financial literacy and inclusion among low-income households in India.

Improvements in Knowledge and Skill
As we have seen in this competitive era, a wide range of various financial products and services exist, so it becomes very difficult for an investor to choose what suits him best. Sometimes he/she gets misguided and cannot make appropriate choices. So here, financial literacy plays a crucial role in imparting investors knowledge so they can make informed choices. So financial literacy develops a skill set among individuals which develops the confidence to manage their finances and handle unforeseen contingencies more wisely.

Freedom from the vicious circle
Financial literacy creates awareness among individuals regarding various financial tools. This will help them to save themselves from the vicious trap of moneylenders who charge them high-interest rates. Financial literacy will help them overcome such serious issues by making them aware of various facilities and government schemes. Also, overindebtedness will be reduced - Financial literacy helps an individual to make informed and wise financial decisions, due to which overindebtedness decreases, and the quality of services will also improve. They are overburdened with high debts, and knowledge of financial tools will help them do better financial planning.

Empowers Entrepreneurship
Financial literacy promotes entrepreneurship and helps a small entrepreneur generate business, as it gives knowledge and develops skills in an individual. It helps in a practical understanding of finance and making effective decisions for the business. It is a dire need of the hour to improve financial literacy, especially in the business sector. Financial education can initiate a plethora of effects on a country's economy. A financially literate family has knowledge of various financial products, so they will promote savings and even channel these savings into investments, ultimately leading to the welfare of society.

Behavior change
The knowledge of financial products acts as an agent to do the behavioral change in an individual. Various campaigns, programs, and other initiatives will lead to behavioral changes and improved financial items.

Research methodology
The study is descriptive. Available secondary data from reports issued by the Reserve Bank of India, Ministry of Finance, and World Bank were extensively used for the study. Different news articles, books, and authorized internet sources were used, enumerated, and recorded. A simple percentage method has been used to analyze the secondary data to show the trend and status of financial inclusion over the past ten years.
**Table 1: Definitions of financial inclusion**

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<tr>
<th>Author</th>
<th>Definition</th>
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<tr>
<td>Reserve Bank of India (2008)</td>
<td>RBI defines Financial Inclusion as the &quot;process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as weaker sections and low-income groups in particular.&quot;</td>
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<tr>
<td>Planning Commission (2009)</td>
<td>&quot;Financial inclusion refers to universal access to a wide range of financial services at a reasonable cost. These include banking products and other financial services such as insurance and equity products.&quot;</td>
</tr>
<tr>
<td>Chakraborty (2011)</td>
<td>&quot;Financial inclusion is the process of ensuring access to appropriate financial products and services needed by all sections of society including vulnerable groups such as weaker sections and low-income groups at an affordable cost fairly and transparently by mainstream institutional players.&quot;</td>
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**Fig 3: Five A’s of Financial Inclusion**

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**Need for Financial Inclusion in India**

Through financial inclusion, the resource base of the Indian financial system can be enhanced as it promotes a culture of savings amongst a large segment of the rural population. Further, providing financial services to low-income groups helps them protect their financial wealth and use it in insistent circumstances. Easy access to formal credit will protect the vulnerable sections of society from usurious money.

**Financial Inclusion in India is enumerated below**

Providing formal credit channels: So far major chunk of the population deprived of any formal access to credit depends on family, friends, and moneylenders for fulfilling their financial needs. Formal banking channels will enable people from lower-income groups to stabilize their lives and improve their living standards.

Creating a platform for inculcating the habit of saving money

The growth of a nation's financial system is crucial. By aiming for financial inclusion Government of India wants to increase the financial resource base by motivating all individuals to have a bank account and thus inculcate a habit of saving.

Providing direct benefits of subsidies and welfare programs

A significant challenge faced by Government is that the sum of money designated for rural masses under several schemes does not reach them. If every individual residing in rural areas had a bank account, the cash disbursement would be quick and transparent (Sehrawat & Giri, 2016) [20]. Consequently, the Government has opted for direct cash transfers in the accounts of beneficiaries.

**Conclusion**

In conclusion, financial technology (fintech) has the potential to significantly enhance financial literacy and inclusion among low-income households in India. Through innovative and accessible digital platforms and services, fintech can overcome traditional barriers to accessing financial services, such as high costs, lack of physical access, and limited financial literacy. Despite the potential benefits of fintech, several challenges must be addressed to ensure its effective implementation and adoption. These include limited access to digital infrastructure and internet connectivity in rural areas, lack of consumer trust in digital financial services, and the need for regulatory frameworks to protect consumers from fraud and other risks associated with fintech.

To promote the responsible and sustainable development of fintech, policymakers, and industry stakeholders must work together to address these challenges and ensure that fintech solutions are accessible, affordable, and trustworthy. This can be achieved through measures such as expanding digital infrastructure and internet connectivity in rural areas, providing financial education and training programs, implementing effective consumer protection regulations, and promoting the development of fintech solutions that meet the needs of underserved communities.

Overall, the findings of this paper highlight the potential of fintech to enhance financial literacy and inclusion among low-income households in India. By leveraging technology to provide innovative and accessible financial products and services, fintech can contribute to the ongoing efforts to reduce poverty and inequality and promote inclusive economic growth in India. However, to ensure that all segments of the population realize the benefits of fintech, policymakers, and industry stakeholders must work together to overcome the challenges associated with its adoption and promote responsible and sustainable development.

**Author’s Biography**

Dr. Shweta Kulshrestha, an accomplished Assistant Professor with over 9 years of experience teaching at prestigious organizations also a qualified National Eligibility Test holder, organized by the University Grants Commission (UGC). With a Ph.D. in 'Retail Banking' and a Master's and Bachelor's degree from J.N.V. University in
Jodhpur (Rajasthan), Dr. Shweta has a strong foundation in academic pursuits. As a diligent Assistant Professor, Dr. Shweta has been able to share their extensive knowledge and experience with students, helping them develop a deeper understanding of the subject.

References