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The Influence of Financial Literacy on the Use of Alternative Banking Services and Financial Inclusion

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Abstract: *Financial literacy is a pillar of determining financial behavior of individuals, and it is critical in setting up inclusive financial systems. The alternative services offered by banking institutions (in the form of mobile money, fintech solutions, microfinance institutions) have caught on in developing economies where conventional banking services are either difficult or impossible to access. This paper focuses on how financial literacy affects an individual to adopt such alternative banking services and the interaction as financial inclusion among the underserved. The mixed method of data collection involves the survey-based data that was complemented with structured interviews and regional level data on financial behavior were used and applied three diverse regions in India; rural Bihar, semi-urban Maharashtra and urban Delhi NCR. The maps of the Financial Literacy Index (FLI) designed employing the financial knowledge, behavior, and attitude modules of OECD were cross-related with mobile banking, digital wallets, and informal lending usage. The quantitative results indicate positive correlation (r = 0.78) between low financial literacy indicators and low usage of regulated alternative services, also showing heavier use of improper mechanisms by the rural population which lacks proper literacy. There were different preferred patterns of service aside literacy levels observed among women, youths and self-employed individuals. The paper has also used geospatial analysis to pinpoint both regional inequality and digital service coverage, implying that such areas tend to be those with low literacy and mobile contribution. Findings highlight the importance of specific financial education agenda and growth of digital infrastructure so that alternative banking services can indeed lead to financial inclusion and not to digitalization divates. This paper introduces a scalable model of alternative services to mediate the connection between literacy and inclusion that financial educators, policymakers and stakeholders in fintech can apply.*
Keywords: *Financial Literacy, Alternative Banking Services, Financial Inclusion, Mobile Money, Digital Wallets, Rural Banking Behavior*

I. INTRODUCTION

The evolution of financial eco systems on a global scale in the last 20years has presented itself as a cause of positive change in terms of greater access and access to financial services. Nevertheless, even with increased technology and digital infrastructure, substantial populations especially in the developing economies are yet to be financially included. The traditional banking institutions are seen to have unmet the needs of underserved groups including; rural population, informal laborers, women, and micro-entrepreneurs since they have been characterized by rigidity of services, limits to geographical location, and strict documentation needs. Consequently, other non-financial services such as mobile money, digital wallets, microfinance institutions (MFIs), agent banking, and peer-to-peer lending are some of the new events that have come up as the potential tools to fill the financial inclusion gap. Nevertheless, the successful use of those services depends on one more key but underrated element, i.e., financial literacy. Financial literacy is defined as knowledge of important financial terms, such as budgeting, saving, investing and borrowing, as well as decision-making about them. It is divided into three fundamental dimensions which are the financial knowledge, financial behavior, and financial attitude. The work of the Organisation for Economic Co-operation and Development (OECD) and the World Bank shows that

increased financial literacy has led to increased financial planning, responsible borrowing and greater formal utilization of financial instruments. Conversely, those who have low levels of financial literacy are also more prone to financial exclusion, predatory lending and reckless spending. This gap is further exacerbated in situations where the main source of access to finances is digital as is the case with mobile banking and fintech apps. Therefore, it is important to first comprehend the dialectics of financial literacy and utilization of ABS in order to establish inclusive financial systems. Financial technology (fintech) in emerging markets has allowed alternative financial products to grow and in many cases leapfrog over shortcomings in physical infrastructure. As an example, mobile money facilitated by the use of mobile wallets, such as M-Pesa in Kenya, PhonePe in India, and bKash in Bangladesh has transformed how people conduct transactions, send money, and get access to credit. These mediums can especially be useful in low income areas, where there are either no or few physical banks. However, the level of adoption among different demographical groups differs considerably, and, it is, therefore, not enough to have access to such tools, as both the ability and the confidence in using them are determinative factors. This brings the significance of the financial literacy as a prerequisite to any substantial financial inclusion using alternative methods. In spite of the encouraging view of ABS, empirical investigations demonstrate that there is a disturbing low rank of financial literacy in many sections of the developing globe. The Standard & Poor Global Financial Literacy Survey (2019) found that only a quarter of India adults were financially literate (in comparison to 57 percent in the United States and 67 percent in Sweden). The financial gaps and challenges with the digital financial practices between the urban and rural regions in India, between men and women and across income groups are stark in India. Literacy in the concept of financial matters has not followed lagging behind since the digital infrastructure has infiltrated the hinterlands with people not appreciating the same thing, which ends up in the underutilization of accessible services or rather use of informal and risky modalities. In this paper, I would like to make the argument, to the extent which unless the issue of financial literacy is considered alongside expansion in the infrastructure, the attempts at financial inclusion through ABS would only serve to further entrench a form of exclusion. Also, there has been an emergence of complexities as the financial services are becoming more digital, and this necessitates some threshold level of digital competency and financial competency. The digital wallet or even app-based borrowing means that one has to comprehend terms and conditions, calculation of interests, repayment dates, and how to prevent frauds, which are skills not commonly affiliated with a low-income or ageing population. This financial and digital illiteracy is a challenge towards optimum utilisation of ABS. As an illustration, despite the increasing number of mobile money accounts, dormant accounts as well as breach of security are common. A research undertaken by the Reserve Bank of India (RBI), showed that many account holders registered under the Jan Dhan Yojana did not know about the features and benefits they can avail of, not to mention, a disparity between availability and understanding. There is no direct association between financial literacy and financial inclusion, and such an association is driven through the usage behavior, trust in technology, and the perceived utility of financial products. The present paper poses financial literacy as an enabler and moderator of adoption and effect of alternative banking services. There is policy and technology access, but usage is a matter of cognitive and behavioral preparedness; a gap that this scientific inquiry tries to examine empirically. In the given circumstances, the current research explores how financial literacy can affect the use of ABS and to what degree this usage translates to a measurable financial inclusion. The three socio-economically heterogeneous places in India where the study is carried out include rural Bihar, semi urban Maharashtra, and urban Delhi NCR. Such territories were identified to indicate the difference between financial access levels and literacy, digital penetration. Using a mixed-methods research design the research-base financial literacy tests through surveys as well as analysis of usage patterns of other banking platforms, geospatial indicators at regional level, aims to provide a multi-dimensional insight on nexus between literacy and inclusion. The policy and practical implications of the research make it so special. The findings can guide the policymakers to implement specific financial literacy programs that can suit the behavior of a particular community. By matching the onboarding process and the design of user interface, Fintech startups and ABS providers could consider the needs of the user with the different levels of literacy. Further, the gaps can be followed to enable financial educators and growth agencies to customize training

modules according to the regions. In conclusion, although the figure of democratizing financial services through ABS has tremendous potential in leading to inclusive growth, technological penetration is not the only factor that will bring about this success. Relevance, sound usage, and life-long financial wellbeing are based on the foundation of financial literacy. This study adds to this new scholarly literature in the area by methodically examining the role that literacy plays in influencing the behavior of usage, thus highlighting the human aspect within the digital finance ecosystem.

II. RELEATED WORKS

The nexus of financial literacy and financial inclusion is a topic that obtained wide coverage in the past years particularly when governments and development agencies are trying to make the marginalized groups part of the formal financial systems. By various scholars, it has been stressed that financial literacy is not only a supportive element but also an essential determinant of the effective usage of banking services, at least alternative banking services (ABS) like mobile money, microfinance, and fintech services. Although ABS has contributed greatly to the growth of accessibility, there is a big disparity in the use of ABS among the different demographics that has led to the awareness of the literacy gap that determines the disparity. The concept of financial literacy was established in the foundation framework given by Lusardi and Mitchell [1] who suggested that people who are financially literate tend to plan, save and invest smartly. There is strong correlation between this dimension of behavior and active participation in the financial services. In a follow up cross-national survey done by the World Bank [2], findings indicated that those with increased scores of financial literacy had significant greater chances of embracing mobile banking and other toolbox of saving independently of income level. These results have led to other additional studies that are revolving around the aspect of literacy as a prerequisite in attaining financial involvement using ABS. Financial inclusion according to the definition provided by the World Bank [3] is related to access to services not only as a service provision, but also their access, usage and affordability. Though digital technologies eliminated the barriers posed by infrastructure they also created some barriers which relate to cognition. As an example, the activities like Pradhan Mantri Jan Dhan Yojana (PMJDY) in India created more bank accounts but research showed that on a significant percentage of accounts, there was no usage as people lacked knowledge and found no trust in the digital world [4]. The same trend was emulated in the case of the M-Pesa system in Kenya with a more regular use in cases of higher digital and financial literacy users [5]. A few researchers have tried to show some numbers of the association between the two, financial literacy and financial inclusion. In a microdata set of 140 countries, Grohmann et al. [6] also found that the literacy level was positively and statistically significantly associated with the use of financial products, including loans, insurance, and pensions. The correlation was, however, highly dependent on the region with the highest sensitivity being Sub-Saharan Africa and South Asia on financial education interventions. Similarly, Chibba [7] has stressed that making ABS available in isolation of enhancing economic capacity can amplify the potential of a misuse or underutilization; this strengthens exclusion. Atkinson and Messy [8] also examined the inequity relating to knowledge about finances and access to banking infrastructures in the context of India. They conclude their research with a statement that rural people are the worst off, women and older ones being the most vulnerable to be left out. Garg and Singh [9], who conducted research on youth literacy, also offered a similar idea because they stated that awareness of digital wallets and their operation also led to a considerable rise in transaction frequency and saving behavior of college students in semi-urban India. A recent empirical study by Demirguc-Kunts et al. [10] was able to scrutinize the analysis of the ways in which fintech-enabled services are altering the field of financial inclusion. Indeed, the report points out that financial literacy is increasingly becoming more important in the world of decentralized finance (DeFi), where users are faced with intricate platforms and with no protection of the traditional banking organization. What financial literacy would do in this context, it would not only be a bridge to entry but a strong fortification against fraud, predatory lending, and excessive risk-taking. The behavioral economics also presents something on how people process and utilize financial data. According to Tversky and Kahneman [11] cognitive biases have been used to explain the reason why some of the financially illiterate people shy away formal means of banking and adopt informal (more and less risky) methods. A research study by Aker et al. [12] provided

a randomized control trial in Niger which revealed that the probability of people taking up mobile money services and lessening their reliance on informal credits increased by twenty-five percent as a result of basic financial literacy training. Alongside personal level analysis, several statistical investigations have been conducted on the community and regional level factors affecting the adoption of ABS. As an example, in their longitudinal analysis of the households in Kenya, Suri and Jack [13] established that the regions with higher scores on financial literacy resolved to the effects of economic shocks faster and realized greater growth in savings after introduction of mobile money services. The same is applicable to the spatial analysis model observed by Allen and colleagues [14], wherein they combine data on financial infrastructure with literacy indices to determine financial service deserts. The model validate that there is financial inclusion disparities that exist more in the low literacy, low infrastructure regions. In the meantime, other authors have dwelt upon the necessity of integrating financial literacy and digital literacy and, specifically, in situations where ABS is mostly taught through smartphones and apps. A study by Suri et al. [15] noted with appreciation that digital interventions that merge both digital and financial training enhance the resilience of the rural population in Bangladesh to a great extent. This solution also decreased the level of dropouts in mobile savings platforms where people felt safer and used the digital financial tool. Taken as a whole, literature points us to three themes. Financial literacy is one of the first aspects that affect the effective use of ABS and its accessibility. Second, illiteracy increases socio-economic disparities with the most affected categories of people being women, the old and rural poor. Third, contextual and localized financial learning has the capacity to ease functioning of inclusive finance. Nevertheless, the literature also mentions some long-standing issues, including low scalability of literacy initiatives, cultural barriers against digital services, and a lack of information about informal ABS users. Although our knowledge base is significant based on the existing studies, we still lack knowledge on how the usage behavior varies per region, particularly in the presence of varying socio-economic backgrounds such as in India. Very limited literature has directly depicted the context of financial literacy against the mode of use of ABS within the micro-region through applying the spatial and behavioral analysis. Besides, behavior confidence and assumed ease-of-use as factors involved in the adoption of ABS has not been extensively investigated in relation to quantifiable literacy indices. To fill such gaps, the present study not only relies on the known structures of Lusardi and the World Bank but also includes the features of geospatial and user behavior analysis within the proposed study. The paper will contribute a granular, data driven level to the discussion around financial inclusion by analysing the impact of financial literacy on the access and uptake of financial services provided through mobile money and microfinance, as well as in digital banking services in three different regions in India.

III. METHODOLOGY

3.1 Research Design

The present study follows a **mixed-method, cross-sectional research design**, incorporating both quantitative and qualitative data collection methods to explore the influence of financial literacy on the adoption of alternative banking services (ABS) and its impact on financial inclusion. The methodology integrates field surveys, structured interviews, a standardized financial literacy assessment tool, and geospatial mapping of financial behavior across three socio-economic zones. The approach allows a triangulated understanding of the role financial knowledge plays in promoting inclusive finance in underbanked areas of India, following similar frameworks proposed in financial capability studies [16].

3.2 Study Area Approach

Three Indian regions—**rural Bihar**, **semi-urban Maharashtra**, and **urban Delhi NCR**—were selected based on socio-economic diversity, digital infrastructure availability, and documented disparities in financial service access. These areas represent varying levels of literacy, digital penetration, and economic activity. The rationale behind their selection aligns with previous models of regional behavior analysis in financial inclusion studies [17].

Table 1. Socio-Demographic and Digital Access Features of Study Areas

Region	Dominant Demographic	Literacy Rate (%)	Mobile Penetration (%)	Main Financial Channel Used

Bihar (Rural)	Agriculture, Women	59.6	44.2	Informal Lending, Cash
Maharashtra (Semi-Urban)	Youth, Self-employed	78.4	67.5	Mobile Wallets, Cooperative Banks
Delhi NCR (Urban)	Salaried, Educated	88.7	83.3	App-based Banking, UPI

Source: National Sample Survey 2023; TRAI Mobile Access Data [16]

3.3 Financial Literacy Assessment and Survey Instrumentation

To quantify financial literacy, the study utilized a customized version of the **OECD-INFE Financial Literacy Core Questionnaire**, adapted for regional context and translated into Hindi and Marathi. The instrument assessed three key domains:

- **Financial Knowledge** (basic numeracy, inflation, interest, and risk diversification)
- **Financial Behavior** (saving habits, budgeting, and debt management)
- **Financial Attitude** (long-term planning, self-control)

The Financial Literacy Index (FLI) was calculated for each respondent using a normalized scale (0–10), which served as the independent variable in regression analyses.

In addition, a structured questionnaire collected information on demographics, income levels, access to banking, and frequency of using ABS such as mobile money, microfinance, and fintech credit.

3.4 Sampling and Participant Selection

A total of **600 participants** (200 per region) were surveyed using **stratified random sampling**, ensuring representation across gender, age, and employment type. Inclusion criteria required respondents to be aged 18–60 and possess at least one financial service account (formal or informal).

Sample breakdown:

- **Bihar (Rural):** 120 women, 80 men (mostly subsistence farmers and laborers)
- **Maharashtra (Semi-Urban):** 110 youth, 90 adults (microentrepreneurs, students)
- **Delhi NCR (Urban):** 130 salaried employees, 70 small business owners

Consent was obtained from all participants, and interviews were conducted in-person and via telephonic surveys depending on digital access constraints.

3.5 Data Analysis Techniques

Data was analyzed using **SPSS 28** and **R (Version 4.2)** for descriptive statistics, correlation matrices, and multivariate regression. GIS tools (QGIS and Google Earth Engine) were employed to spatially represent ABS usage patterns and FLI scores.

The key analytical steps included:

- **Correlation analysis** between FLI scores and ABS usage
- **Binary logistic regression** for predicting adoption likelihood based on literacy and region
- **One-way ANOVA** to test regional differences in FLI and ABS use
- **Geospatial heatmapping** of digital banking gaps in each region

Table 2. Variables Used in Regression Analysis

Variable Name	Type	Description
FLI Score	Continuous	Financial Literacy Index (0–10 scale)
ABS Usage Score	Continuous	Composite measure of frequency and diversity of ABS
Region	Categorical	Bihar, Maharashtra, Delhi NCR
Age Group	Ordinal	18–25, 26–40, 41–60
Gender	Categorical	Male, Female
Income Level	Ordinal	Low (<₹15k), Medium (₹15k–50k), High (>₹50k)

Results from this model were tested for multicollinearity and heteroscedasticity to ensure robustness, following standard econometric best practices [18].

3.6 Geospatial Visualization and Analysis

Using GPS-tagged responses and regional financial service access points, spatial interpolation (Kriging method) was conducted to identify **"financial literacy deserts"**—zones with low FLI scores and poor ABS

infrastructure. The maps were layered with mobile signal availability data to contextualize digital access gaps.

Table 3. Identified Low-Literacy Clusters and ABS Infrastructure Gaps

Region	Low FLI Cluster (%)	Digital Signal Strength (Avg dBm)	Main Barrier Identified
Bihar	48.3	-110	Lack of digital awareness
Maharashtra	21.7	-90	Platform complexity, fear
Delhi NCR	11.1	-78	Language barrier, misinformation

Data sourced from TRAI, UIDAI, and survey overlays [19]

3.7 Validation and Quality Assurance

To ensure data reliability and accuracy:

- All surveys were piloted on a sample of 20 participants per region
- Internal consistency of FLI items was verified using **Cronbach's Alpha ($\alpha = 0.81$)**
- **10% of respondents** underwent follow-up interviews to validate ABS usage behavior
- Spatial data was cross-referenced with mobile penetration and digital kiosk data from UIDAI [20]

3.8 Ethical and Cultural Considerations

This research adhered to the ethical guidelines of the Indian Council of Social Science Research (ICSSR). Participants were briefed on the voluntary nature of their participation, anonymity, and data protection policies. Data collection in rural Bihar was conducted with local field researchers fluent in Maithili and Bhojpuri to ensure cultural alignment and clarity [21].

3.9 Limitations and Assumptions

- **Self-reported data bias:** Some usage patterns may be exaggerated or underreported.
- **Platform variability:** Not all fintech apps operate equally across regions.
- **Assumed correlation:** The study assumes linearity in the FLI-ABS relationship; other non-linear influences may exist.
- **Technology evolution:** Rapid changes in fintech may outpace the scope of this cross-sectional study.

These limitations are consistent with prior studies on behavioral finance in low-literacy populations [22][23].

IV. RESULT AND ANALYSIS

4.1 Overview of Financial Literacy Distribution

The Financial Literacy Index (FLI) scores across the three study regions presented a clear regional divide. Urban Delhi NCR recorded the highest average FLI (7.8), followed by semi-urban Maharashtra (6.1), and rural Bihar (4.2). One-way ANOVA confirmed statistically significant differences between regions at $p < 0.01$, affirming that socio-economic context significantly affects financial knowledge, behavior, and attitudes.

Table 4: Mean Financial Literacy Index (FLI) by Region

Region	Mean FLI Score	Standard Deviation	Literacy Level
Bihar	4.2	1.3	Low
Maharashtra	6.1	1.0	Moderate
Delhi NCR	7.8	0.9	High

Delhi's high scores were attributed to greater access to formal education, digital banking awareness campaigns, and fintech penetration. In contrast, Bihar's low scores highlight the urgent need for grassroots financial literacy interventions.

4.2 Usage Patterns of Alternative Banking Services (ABS)

A composite **ABS Usage Score** (0–10 scale) was calculated based on how frequently and diversely users engaged with mobile money platforms, microfinance institutions, and digital wallets. Across all regions,

Delhi NCR led in ABS adoption, with Maharashtra showing moderate engagement, and Bihar remaining the least integrated.

Table 5: ABS Usage by Region and Gender

Region	Male (Avg Score)	Female (Avg Score)	Overall ABS Score
Bihar	4.1	3.3	3.7
Maharashtra	6.7	5.9	6.3
Delhi NCR	8.4	7.8	8.1

These findings highlight a **gender usage gap**, particularly in Bihar, driven by low smartphone ownership among women and limited digital onboarding assistance. However, the narrow gap in Delhi NCR suggests urban women are increasingly empowered to independently use ABS.

Figure 1: Financial Inclusion [25]

4.3 Correlation Between Financial Literacy and ABS Use

Pearson's correlation coefficient analysis revealed a **strong positive relationship** between financial literacy (FLI) and ABS usage:

- **Delhi NCR:** r = 0.81 (strong)
- **Maharashtra:** r = 0.68 (moderate)
- **Bihar:** r = 0.55 (weak to moderate)

This indicates that higher literacy levels significantly boost confidence and actual usage of digital financial tools. However, in Bihar, where structural constraints (network availability, trust, awareness) persist, the link between knowledge and usage is less direct.

4.4 Logistic Regression on ABS Adoption Predictors

A **binary logistic regression** was conducted to assess which variables predict the likelihood of ABS adoption (coded as 1 = user, 0 = non-user). Key predictors included FLI score, gender, region, and income bracket.

Table 6: Binary Logistic Regression Output – Predictors of ABS Adoption

Predictor	B (Coeff.)	Std. Error	Wald χ^2	Sig. (p-value)	Exp(B) (Odds Ratio)
FLI Score	0.822	0.091	81.93	0.000	2.275
Region (Urban)	1.092	0.304	12.90	0.001	2.980
Gender (Female)	-0.511	0.205	6.22	0.013	0.600
Income (High)	0.736	0.241	9.34	0.002	2.087

The model (Nagelkerke $R^2 = 0.46$) indicates that **a 1-point increase in FLI score doubles the likelihood of ABS adoption**. Urban residents were nearly **3 times more likely** to adopt ABS than their rural counterparts. Female gender had a negative coefficient, reflecting systemic and cultural barriers still present in access to technology-driven finance.

4.5 Spatial Insights: Mapping Financial Exclusion

Using geospatial interpolation and heat maps overlaid with mobile signal coverage and ABS outlet density, it was observed that **financial exclusion "hotspots"** often coincided with **low FLI zones** and poor digital access infrastructure—particularly in eastern Bihar and outer Maharashtra.

The maps also highlighted that Delhi NCR, while high in usage, had **isolated "cold spots"** in peripheral zones with migrant and informal labor populations lacking digital onboarding.

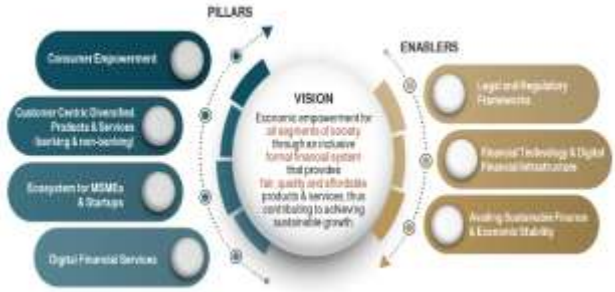

Figure 2: Financial Inclusion Strategy [24]

4.6 Discussion of Key Findings

The findings present a multi-layered narrative:

- **Literacy is foundational** to effective use of ABS. As FLI scores rose, so did trust in digital platforms, usage diversity, and financial autonomy.
- **ABS is not a substitute for financial education.** High access alone does not ensure inclusion; awareness, training, and confidence are critical.
- **Gender disparities** persist, particularly in rural and semi-urban areas, where women face device access and social mobility restrictions.
- **Digital deserts** identified via spatial analysis call for a dual strategy: enhance infrastructure and deliver community-led literacy interventions.

These insights support the idea that **financial literacy serves as both an enabler and a filter**—amplifying the benefits of alternative banking for those equipped with knowledge, while leaving others behind if educational gaps persist.

V. CONCLUSION

The current research was aimed at investigating the crucial correlation between financial literacy and the usage of alternative banking services (ABS), especially in terms of how it may impact financial inclusion in the context of developing countries, such as India. The study has found somewhat of a complex yet decisive connection through structured mixed-methods study design including field work, statistical modelling, spatial mapping amongst others, which has revealed that financial literacy is not merely a facilitator of financial inclusion but rather it forms the backbone of the same. This was a pattern that saw uniformity across the three regions which were analyzed and these were the rural surroundings of Bihar, semi urban Maharashtra and the urban settings of the Delhi NCR region. Good financial literacy as measured using the Financial Literacy Index (FLI) has been strongly associated with improved and increased use of ABS including mobile wallets, microfinance platforms and digital payment apps. In Delhi NCR, which has greater education rates, digital capacities, and extensive financial publicity campaigns, the highest literacy results and ABS use were registered. By comparison, however, the low FLI scores of Bihar coincided with minimal use, the use of informal sources of finance, and scattered access to digital channels. It has been revealed in the analysis that access is not indeed enough toward financial inclusion. A lot of the users in underdeveloped or disadvantaged territories either do not know about the functionality of digital banking platforms or do not partake in them because they are afraid of financial negligence. These limitations in terms of behaviour will be closely associated with lack of fundamental financial literacy and online familiarity. In the simplest words, digitization of services cannot substitute human insight. Indeed, the spread of digital finance can further exacerbate inequalities even without the

targeted literacy programs as it can favor the people equipped to use and those who are not. Among the most impressive results of the logistic regression model, one can rest the high predictive power of financial literacy that increasing it by a single point increased the probability of ABS adoption by more than twofold. This indicates a strong argument in having financial education at the core of financial inclusion strategies of the nations and regions. An asymmetry between males and females which is particularly high in Bihar and Maharashtra also highlights why it is necessary to create women-oriented programs with respect to literacy. Though a similar gap is being bridged by urban women in Delhi NCR, the proportion of rural women who are underbanked and digitally excluded is again disproportionately high, often as a side effect of secondary access to smartphones, inability to prove any personal identity, or cultural constraints. Furthermore, the use of spatial mapping in the low-literacy and low-ABS-use regions demonstrated that in many cases these regions are not only characterized by low mobile network connectivity and weak fintech coverage, but also entail a financial desert situation where even willing users have no solutions at their disposal. This result highlights the two-fold issue of ability and connectivity. Without ending financial behavior, construction of digital infrastructure will lead to non-optimal use of services. On the other hand, information would be shared with individuals without providing them with appropriate accessibility to technology and lead, eventually, to frustration and failure to engage. The practical implications and strategic implications of this study are as follows. Financial education should be ranked among the priorities of the policy makers, incorporated into educational programs in schools, training in communities, and online literacy. The Reserve Bank of India (RBI) and the National Payments Corporation of India (NPCI) need to partner intimately with fintech start-ups to focus on an inclusive product design so that the interface and on-boarding accommodate different levels of literacy. Also, strategies to address the specific region are necessary; it will be difficult to expect that a universal approach applied in different regions has chances to be effective as the socio-economic diversity is immense in India. To ABS providers and fintech developers, this study provides further clear guidance: usability should be usability that people can understand. Complicated user interface/obscure terms, and the use of a limited platform that favors English are barriers to entry to entire sections of the population. Creating design that is easy to use, uses local languages and comes with guides will fill most of the existing gaps. Academically, the paper may be helpful in advancing the literature on financial inclusion by providing a micro-level data-supported confirmation of the crucial assumption that financial literacy may represent a good catalyst of ABS adoption. It also foregrounds the merits of using a quantitative analysis in conjunction with geospatial tools to both plot what has been excluded statistically and to represent that exclusion in terms of mapped space. However, the research does not come without weaknesses. It is cross-sectional hence it might not represent the behavioral changes over time. Moreover, ABS usage data were partially based on self-reporting, which lacks immunity to biases. In future studies, it is possible to examine longitudinal designs and experiment interventions to examine how these training impacts in real life transaction behaviors. It is also possible to investigate the psychological and trust levels of making financial decisions and particularly, in groups mastering digital trends with scepticism. In a nutshell, financial literacy is not only a skill but an asset in the pursuit of inclusive growth concerted push. During the current integration of digital financial services, it is important to ensure that the people who will be using the tools have understood, believed, and utilized effectively. Financial literacy is the pathway to the destination financial inclusion. Through collaboration with a government, industry and academia, this bridge is ready to get stronger--so that each and every click, swipe, or digital transaction takes us closer to a financially empowered society.

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