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Original Article

Difficulties with Fintech for India's Long-Term Financial Inclusion

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Abstract

FinTech has become a game-changing instrument for bringing people into the financial system in India, but not everyone is using it equally across all social, economic, and demographic groups. This study examines the technological, infrastructural, legal, and socio-economic impediments that obstruct FinTech adoption, emphasizing a sustainable and inclusive electronic financial ecosystems. Using a mixed-method quantitative approach, data were gathered from 400 respondents, evenly split between rural and urban locations in Delhi-NCR, Mumbai, Bengaluru, or rural Bihar. Stratified random sample made sure that people of all ages, genders, incomes, and levels of education were included, as well as people who had never used a computer before. Structured surveys with 25 questions gathered information about awareness, adoption patterns, and believed barriers. Statistical studies, such as descriptive statistics, regression analyses, ANOVA, as well Chi-square tests, found the most important factors that affect adoption. The results show that there are big differences in knowledge between rural and urban areas. Only 15% of rural respondents had a high level of awareness of FinTech, whereas 45% of urban respondents did. In rural areas, poor internet access, low ownership of mobile devices, and inadequate digital literacy made it hard for people to use the technology. In urban areas, on the other hand, cybersecurity worries and failed transactions made it much harder. Regulatory issues, like long KYC checks, made it much harder to use. Socioeconomic factors including better income, education, and financial knowledge made adoption more likely, and government programs like Jan Dhan Yojana and UPI made involvement more likely. Respondents put improvements to infrastructure, making rules easier to understand, security, and multi-channel literacy programs at the top of their list. The study finds that a comprehensive, strategic framework that addresses technological, legal, and educational constraints is necessary to encourage resilient and fair FinTech adoption, which will help India reach its long-term goals for financial inclusion.

Keywords- *FinTech adoption, financial inclusion, technological barriers, regulatory challenges, socio-economic factors.*

Introduction

In the previous ten years, India's economy has evolved a lot. The main reason for this is the quick growth of economic technology (fintech) options that strive to link traditional banking with those who don't have bank accounts. Fintech technology like digital payment systems, banking apps for smartphones, peer-to-peer lending platforms, small-scale investing tools, and insurance aggregators have revolutionized the way people and businesses acquire financial services. The government has started schemes like Digital India, the Unified Payments Interface, also known as UPI, and the Pradhan Mantri Jan Dharma Yojana (PMJDY) to make it easier for millions of citizens to open bank accounts and join the digital economy [1]–[3]. Even with these improvements, it's still impossible to be convinced that fintech can help individuals in India with their long-term financial needs because of problems with infrastructure, society, science, and the law that are still going on. Fintech solutions claim to be user-friendly and cost-effective; yet, numerous challenges hinder their widespread adoption throughout the country's varied socio-economic landscape in the long term. One of the biggest problems is that there is a digital gap in India.

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You need a smartphone and a good internet connection for fintech solutions to work. But a lot of individuals in remote areas and those with low incomes still can't get dependable internet or new devices. Reports from the past several years say that cities have a lot of mobile internet access, but rural areas, where people who can't afford it live, still have trouble with inadequate connections and not enough technical infrastructure. The digital gap makes it hard for fintech platforms to grow, which makes it challenging to reach people who live in the country [4]–[6]. The problem is considerably worse because a lot of people don't know how to utilize computers. Even while digital tools are available, many people still don't know how to use them or feel safe using apps for cell phones or online payment systems. This is an inclusive contradiction because the tools that are meant to help everyone make money can often make it harder for others who need them the most. Socio-economic disparities further complicate fintech's efforts to foster long-term financial inclusion.

Fig. 1 Fintech for India's Long-Term Financial Inclusion

India has a lot of people, whom come from all kinds of backgrounds, have varying levels of education, and live in varied cultural settings. People with middle- and upper-class incomes have quickly started utilizing fintech services, but they are having trouble reaching lower-income sectors where people don't know much regarding banking and are very wary of digital systems [7]–[9]. People from less privileged backgrounds still use unregulated systems for credit since they are easy to get to, don't require complicated verification, and they don't know how formal financial products function. It's even difficult because of the language differences. There are more than 22 official languages in the country, as well as hundreds of dialects. This makes it challenging to design financial interfaces that work for people who speak different languages. If these differences aren't fixed, the gap between individuals who have digital skills and those who don't could get much worse. A big difficulty is that people are also very worried about cybersecurity and privacy of their information. Cybercriminals are more likely to target fintech solutions since they process more financial activities and keep sensitive client data. There have been a lot more phishing attempts, identity theft, and financial fraud, especially in rural areas where people aren't very good with computers [10], [11]. This makes it more likely that users may be assaulted. People who are worried about security are less likely to use electronic banking services because they don't trust them. You need strong legal frameworks, clear standards for how to handle data, and good cybersecurity to get people to trust you. But this problem is still complex and changing. Another big problem that makes it hard to attract consumers to utilize financial services for a long time is that the rules are too hard to understand. The Reserve Bank of the country (RBI), the Stock Exchange and Exchange Board of India (SEBI), or the Indian insurance regulatory and development authority (IRDAI), among others, are just a few of the groups that watch over India's fintech ecosystem [12]–[14]. Regulations are required to protect customers and keep the system stable, but laws that are too strict can stifle innovation and make it harder for smaller fintech companies to flourish. But if the restrictions aren't strict enough, customers could be taken benefit of by unfair tactics or predatory lending models. This could make them even more unlikely to trust fintech systems. One of the hardest policy problems is still finding a way to encourage innovation while also protecting consumers. For a long time, people have had issues with behavioral inertia because of not knowing enough about money. Even if there are fintech platforms, a lot of people, especially those who live in rural and semi-urban areas, still don't know adequate about saving, investing, getting insurance, or managing credit [15]–[17]. People are still scared to use online financial services or don't know how to use them effectively if they don't get the right education and awareness. People have been using cash and informal networks for a long time, which makes it harder and takes longer to switch to digital platforms. Fintech-driven inclusion will only last if the ecosystem grows over time, not only when people start using it right away. There are a lot more UPI transactions and mobile wallet users in India, but a lot of them are still "digitally dormant." This means people set up accounts or download apps but don't use them very often. You need more than simply technology that is easy to use to get people to stay involved over the long run. You also need to build trust, keep costs down, and constantly coming up with new ways to support places that receive not enough help. Fintech has a lot of promise to change the way people in India

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acquire financial goods and services, but the country's economy, technology, and rules make it challenging for it to work in the medium term [18]–[20].

Literature Review

Goel 2022 et al. uses information from the RBI of India's 2017 Report of the Working Group on Finance and Technology or Digital Banking to look at how Financial Technologies (Fintech) have changed the Indian banking industry. It looks at how new fintech approaches are changing the world and how these changes affect businesses, customers, or the banking system as a whole. It looks at how logical advancements in fintech have happened and how important they are for making financial services more accessible to everyone. It also speaks about how further study might be done on novel fintech phenomena and how they effect the bigger picture. This would assist electronic banking grow in India [21]. Pandey 2022 et al. looks at how well financial inclusion (FI) works and how it affects long-term growth, focusing on things like technology, digitization, and use. It employs PLS-SEM modeling to examine both the direct impacts of all of these variables and the potential benefits of financial literacy. Customers' views on things that are in line with the SDGs for reducing inequality among women and men, and industrial growth are used to quantify sustainable growth. The findings indicate that digitalization, fintech, and consumerism are significant determinants of financial inclusion, with financial literacy enhancing their impact on sustainable growth. Also, business investments have a huge effect on sustainable growth, especially in the north of the country. This shows how important fintech is [22]. Nanduri 2021 et al. FinTech can help people get financial services and reach the UN's Sustainable Development Goals (SDGs) by 2030. FinTech has revolutionized how money is handled online, worked with a variety of different groups, and leveraged technology to make it possible for 80% of adults in India to get credit. This has helped over 350 million individuals open accounts for the first time. The essay utilizes a case study methodology to analyze the benefits and drawbacks of digital finance, focusing on the difficulties faced by FinTech business models in both B2B and B2C environments. It talks on the possible benefits, dangers, and lessons learned from building India's digital economy in a way that complies with the Sustainable Development Goals set by the United Nations (SDGs) [23].

Hussein 2020 et al. Looks into how ready Egypt is to use technological innovations in finance to fulfill its objective of financial inclusion as part of its Global Sustainability Strategy 2030. Egypt has a lot of fintech companies, a lot of individuals that use mobile phones, and government measures to help the country get digital. But compared to other Arab and African countries, it still has a low level of financial inclusion. The World Bank's 2017 Global Findex statistics and logistic regression demonstrate that having a mobile money account, a cell phone plan, and using the internet all have a large impact on inclusion. But growth is slow since there isn't a clear goal, strategic planning, or cooperation between the people involved. To close gaps and promote inclusion, it is important to improve financial literacy, ecosystem growth and regulatory aid [24]. Buckley 2019 et al. underlines that FinTech is a vital aspect of making sure that everyone can get financial services. The UN Global Sustainable Development Goals (SDGs) say that this is important for making sure that development is balanced and long-lasting. It suggests a strategic framework with four main parts: creating a digital identity, making it easier to set up accounts and use e-KYC systems; building open, interoperable electronic banking systems; using this infrastructure for electronic government services or payments; and creating digital financial markets to make it easier to get capital and investment opportunities. These fundamental elements make the virtual money movement possible, which provides individuals and nations with more power. FinTech is a big step forward for the world's long-term growth and inclusion [25].

Table 2.1 Literature Summary

Authors/years	Methodology	Research gap	Finding
Vinay/2019 [26]	Analyzing cashless transactions for financial inclusion.	Limited studies on cashless transactions' impact on financial inclusion growth.	Cashless transactions significantly enhance financial inclusion and banking accessibility.
Kherala/2019 [27]	Analyzing demonetization's impact on digitalization.	Limited research on demonetization's influence on digital financial adoption.	Demonetization significantly accelerated digital payments and reduced cash dependency.
Souza/2018 [28]	Analyzing mobile banking for inclusion.	Limited research on mobile banking's role in financial inclusion strategies.	Mobile banking boosts financial inclusion but faces infrastructure and adoption challenges.
Pejkovska/2018 [29]	Examining fintech's risks and regulations.	Limited research on fintech's regulatory challenges and associated global risks.	Inadequate fintech regulations risk cybersecurity, data privacy, and illegal

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			activities.
Bîzderea/2017 [30]	Analyzing fintech innovations shaping economy.	Limited research on fintech innovations influencing global economic transformation.	FinTech innovations drive economic growth and simplify global financial transactions.

Research Methodology

This part talks about the study method that was utilized to find out how people in India are using FinTech. It goes into depth about the study's design, aims, sampling strategy, information-gathering methods, analysis tools, and ethical problems that were considered to make sure the results are reliable, valid, or complete.

1 Research Design

This study employed a mixed-method research strategy, utilizing structured surveys as the primary data collection instrument. The design focuses on assessing technological, infrastructural, legal, socioeconomic, and demographic barriers to FinTech adoption and its potential for sustainable financial inclusion in India. The research examines the impact of initiatives supported by the government and proposes a comprehensive strategy for FinTech resilience.

2 Proposed Research Objectives

1. **To examine the key technological, infrastructural, and regulatory challenges limiting FinTech-driven financial inclusion in India.**
2. **To analyze the socio-economic and demographic barriers affecting the adoption and long-term sustainability of FinTech services among underserved populations.**
3. **To evaluate the role of government policies, financial literacy programs, and regulatory frameworks in addressing difficulties with FinTech-led inclusion.**
4. **To propose a strategic framework for enhancing the effectiveness and resilience of FinTech solutions in achieving long-term financial inclusion in India.**

3 Sampling Method & Population

The study focused on people from rural as well as urban settings in India, with a particular focus on underrepresented groups like low-income families, small company owners, agricultural workers, and people who were using digital financial services for the first time. These groups were given priority since they make up the largest number of populations who are not financially included, according to the Reserve Bank of India's Fiscal Inclusion Index (2023). There were 400 responses in all, with 200 from rural areas and 200 from urban areas. To make sure that all parts of the country were represented, people from Delhi-NCR (North India), Mumbai, (West India), Bangalore (South India), and some rural areas in Bihar were chosen. This study was able to get a wide range of views and problems with FinTech adoption because it only covered a few regions but was still diverse. This is because of the variances in culture, economy, as well infrastructure across India. Random stratified selection was used to reduce bias and make sure everyone was included. Respondents were divided into groups based on their age (18–60 years), gender, level of education, income, and where they lived (rural or urban). This design made sure that groups that are usually left out, such women in rural homes and people who are using digital banking for the first time, were well represented. We used Yamane's (1967) approach for finite population selection and discovered that a sample size of 400 could offer us a level of assurance of 95% with a margin of variance of less than 5%. This tight sampling process makes the results more accurate and usable for a larger range of situations, which is why they are useful for state-level policy and FinTech strategy.

4 Data Collection

To get primary data, we employed a standardized questionnaire containing 25 questions. There were four main themes for the questions: (1) technological, infrastructural, as well as regulatory challenges; (2) socio-economic and demographic impediments; (3) initiatives by governments, monetary education, and regulatory structure; and (4) tactical growth or resilience strategies. The questionnaire employed 5-point Likert scale problems, selection items, and ranking-driven queries to gather diverse perspectives. This framework ensured that the survey addressed both quantitative and qualitative dimensions, thereby enhancing our understanding of the factors influencing the uptake of FinTech and lasting financial inclusion.

5 Data Analysis Tools

We utilized both of these methods to look at the data. We used descriptive statistics like the mean, frequency, and percentages to show the demographic trends or patterns of adoption. We utilized chi-squared tests, ANOVA, or regression analysis to verify if the study's assumptions were correct and how the variables were related. We utilized Cronbach's Alpha to see if the questionnaire was reliable. People thought that values over 0.70 were good. In line with the goals of the research, the results were put in a table so that they would be easier to grasp.

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6 Ethical Considerations

The study adhered to rigorous ethical standards to safeguard the rights and privacy of all participants. Participation was voluntary, and informed consent was obtained prior to the dissemination of the questionnaire. People who answered those inquiries were promised that their replies would be kept secret and that no personally identifiable information would be collected. The information was kept safe and solely used for research. Ethical issues also included making ensuring that the poll inquiries were not too personal and were respectful of different cultures. By following these standards of ethics, the research results become more dependable, trustworthy, and reputable.

Results and Discussion

This section talks about what the study discovered regarding how people in India are using FinTech. It discusses about scientific, infrastructural, regulatory, or social and economic impediments, variations between rural and urban locations, how well government offerings work, financial literacy, or suggested strategic initiatives to increase long-term financial inclusion.

1 Technological and Infrastructural Barriers to FinTech Adoption

India still has a lot of challenges with FinTech adoption because its technology and infrastructure aren't up to par. Those that live in the country have problems getting online, don't have many smartphones, or don't know about the computers. People who reside in cities are more anxious about transaction failures or cybersecurity. These issues, together with rules that are hard to understand, make it tougher for consumers to get financial services. They also illustrate how crucial it is to make certain reforms.

Table 4.1: Awareness of FinTech Services

Awareness Level	Rural (%)	Urban (%)	Total (%)
High	15	45	30
Moderate	35	40	37.5
Low	50	15	32.5

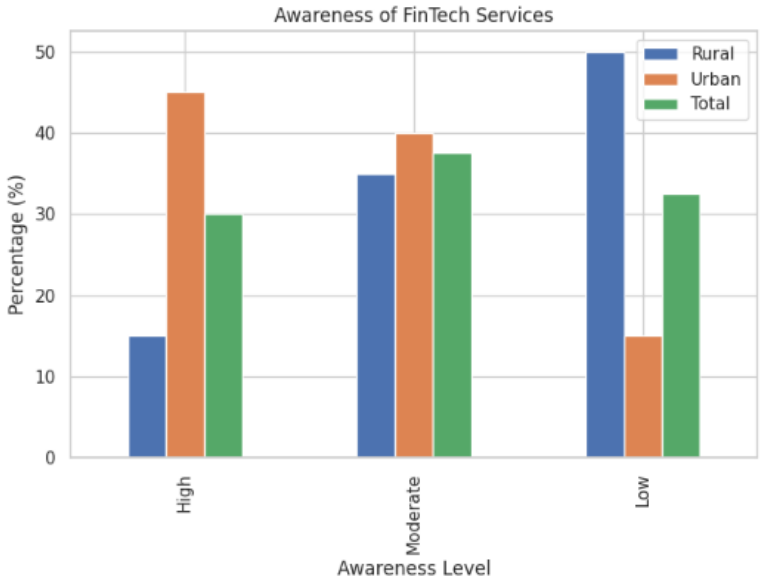

Fig. 2 Awareness of FinTech Services

The table shows a big difference between those in rural and urban areas who know about FinTech services. Only 15% of people who lived in rural areas said they were very aware, whereas 45% of people who lived in urban areas said they were. Half of the rural sample, on the other hand, said they were not very aware, which shows that people in villages don't have much access to digital finance instruments. On the other hand, city dwellers have more access to news, digital marketing, and peer pressure, which raises their levels of awareness.

Table 4.2: Major Technological Barriers in FinTech Adoption

Barrier	Rural (%)	Urban (%)	Overall Rank
Poor internet access	55	20	1
Low smartphone access	40	10	2
Digital literacy issues	35	15	3
Cybersecurity concerns	20	25	4

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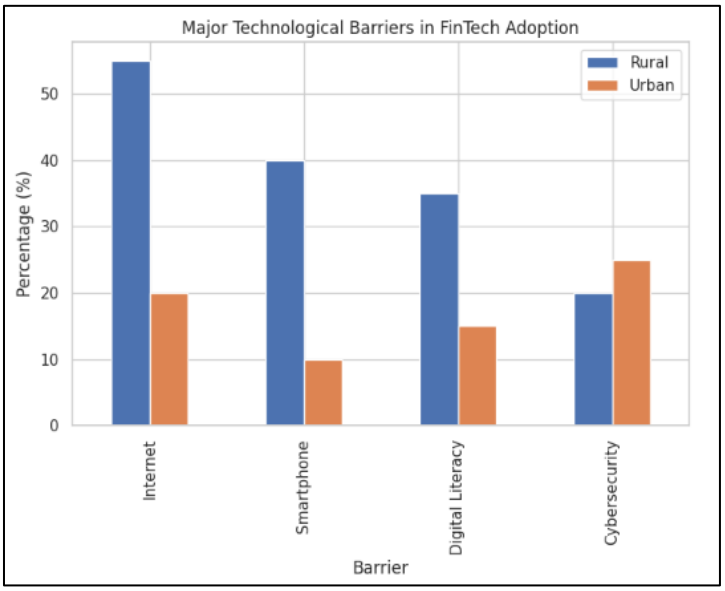

Fig. 3 Major Technological Barriers in FinTech Adoption

The analysis shows that bad internet connectivity is the biggest problem, with 55% of rural respondents saying it is a problem compared to only 20% of urban users. This digital gap shows that rural areas need better infrastructure because their internet connections are still not reliable. Low usage of smartphones (40%) also makes it harder for people in rural areas to use the technology. Digital literacy issues (35% in rural areas vs. 15% in urban areas) make the problem worse, making it hard for many people to use even the most basic financial apps. Cybersecurity worries are more common in cities (25%) than in rural areas. This is because people in cities are more likely to be exposed to online fraud and are more sensitive to it.

Table 4.3: Regulatory Challenges Experienced by Respondents

Issue	% Respondents Reporting
Complex KYC requirements	48
Transaction failures	42
Lack of grievance system	38
High compliance costs	30

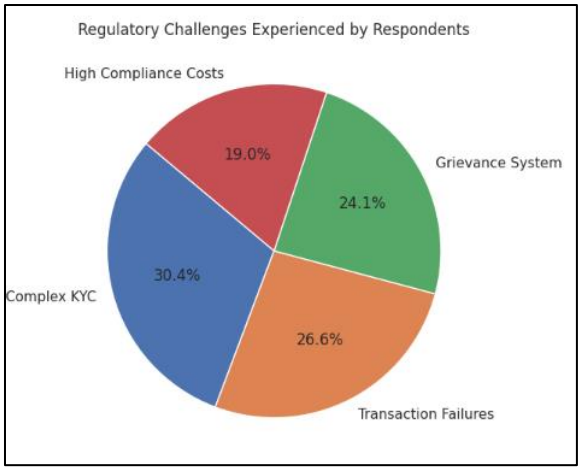

Fig. 4 Regulatory Challenges Experienced by Respondents

This table shows that regulatory complexities are another big problem. Almost 48% of those who answered said they had trouble with complicated KYC standards, which often involve many documents and in-person verification. This is not possible for people who live in remote areas or who don't have a lot of money. Transaction issues (42%) were also mentioned as a common source of annoyance, which made people less trusting in digital systems. A lack of efficient grievance processes (38%) shows that users aren't well protected, which means that customers don't have enough options if there are problems or fraud. Also, 30% said that high compliance expenses were a problem, which is especially true for small enterprises that want to add FinTech services.

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Table 4.4: Regression Analysis – Technological Barriers vs. Usage Frequency

Variable	Beta Coefficient	Sig.
Internet connectivity	-0.52	0.01
Smartphone availability	-0.45	0.02
Cybersecurity perception	-0.28	0.05

The findings of the regression suggest that internet connectivity (β = -0.52, p = 0.01) has the biggest negative effect on how often people use it. Users can't count on stable connection for transactions, so poor connectivity makes it far less likely that people will utilize FinTech services on a regular basis. Smartphone accessible (β = -0.45, p = 0.02) also has a big impact, showing that having a device is very important for digital inclusion. Cybersecurity perception (β = -0.28, p = 0.05) has a small impact, but it is still statistically significant. This shows that trust difficulties limit adoption even when access is available.

Table 4.5: Chi-Square – Regulatory Awareness vs. Adoption Level

χ^2 value	df	p-value
18.45	4	0.002

The chi-square test (χ^2 = 18.45, p = 0.002) shows that there is a strong link between regulatory awareness as well as implementation level. People who knew more about compliance rules and rights of customers were more willing to use FinTech services. This means that knowing the rules makes people feel more confident, which lowers their fear of deception and problems with the process.

2 Income and Affordability Constraints in FinTech Adoption

Socioeconomic considerations significantly influence the adoption of FinTech. Your income level has a direct effect on how easy it is to get cellphones, internet data, or digital banking services. Education also has a role in digital literacy, and age and gender differences can also affect it. These structural inequities make it hard for low-income households, older people, and women to take part in digital financial activities since they can't afford to.

Table 4.6: Adoption by Income Group

Income Level (₹/month)	Adoption (%)
<10,000	20
10,000–25,000	35
25,000–50,000	50
>50,000	70

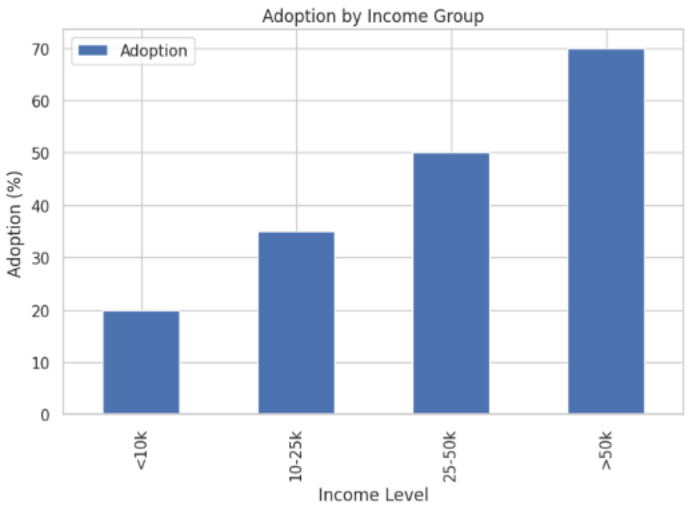

Fig. 5 Adoption by income group

There is a substantial link between wealth and the use of FinTech, as shown in this table. Only 20% of people who make less than ₹10,000 a month use digital services regularly, while 70% of people who make more than ₹50,000 a month do. People with middle incomes (₹25,000–50,000) say they use it somewhat at 50%. These findings indicate that affordability continues to be a significant factor influencing access, as those with higher earnings possess greater capacity to acquire cellphones, sustain internet connected, and navigate digital platforms.

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Table 4.7: Adoption by Age Group

Age Group	Adoption (%)
18–25	65
26–40	55
41–60	35
60+	20

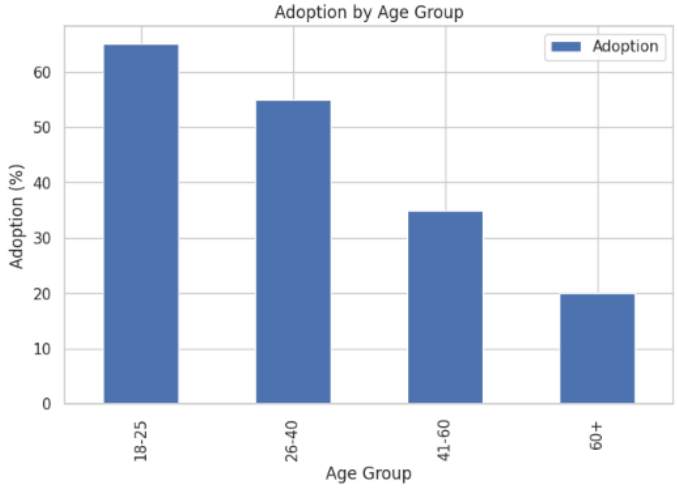

Fig. 6 Adoption by Age Group

The age gap has a big effect on adoption patterns. The 18–25 age group has the highest adoption rate (65%), which suggests that they are comfortable with mobile apps and are good with technology. The 26–40 age group comes next at 55%, which shows that working professionals are also adopting it quickly.

Table 4.8: Gender-wise Usage

Gender	Adoption (%)
Male	55
Female	35

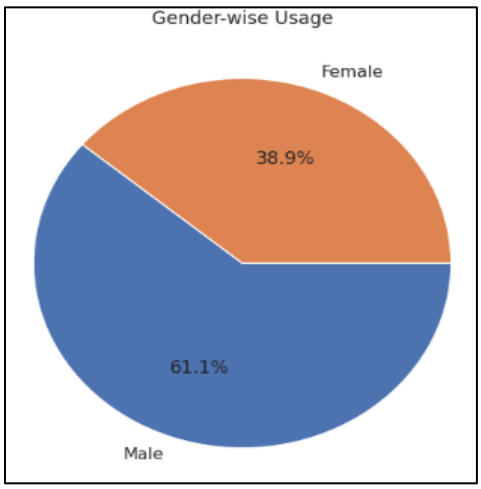

Fig. 7 Gender-wise Usage

The table shows that there are big differences between men and women when it comes to FinTech services. 55% of men use them, but only 35% of women do. Women continue to be overlooked in digital finance because they don't have much financial freedom, don't possess many smartphones, and face cultural hurdles that make them less likely to make active financial decisions.

Table 4.9: Education Level vs. Digital Literacy

Education Level	High Digital Literacy (%)	Adoption Rate (%)
Primary	10	15
Secondary	25	30
Graduate	50	55
Postgraduate	65	70

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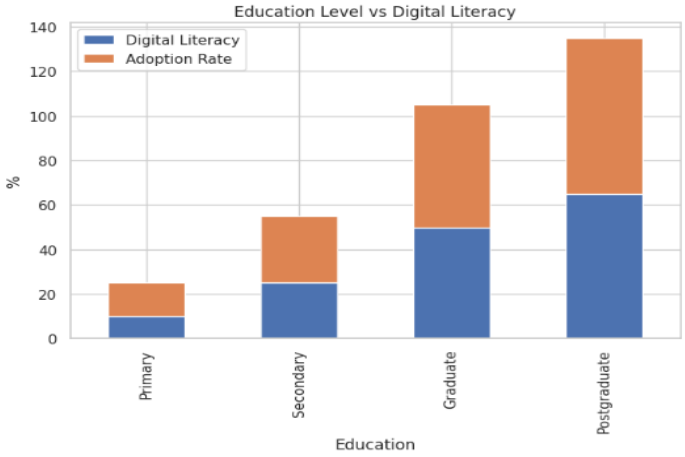

Fig. 8 : Education Level vs. Digital Literacy Graph

Education is a powerful force that changes how people use technology. The table demonstrates that only 10% of people with only elementary education had strong digital literacy, while 65% of people with postgraduate education did. Adoption rates also go up a lot with learning: 15% at the elementary level and 70% at the postgraduate level.

Table 4.10: Correlation – Income & Adoption

Variable Pair	Pearson r	Sig.
Income vs. Adoption	0.62	0.001

The correlation test shows a strong positive link between income or adoption ($r = 0.62$, $p = 0.001$). Higher income increases the chances of using FinTech services because it makes gadgets, internet access, and other connected services more affordable. This backs up what we saw in earlier rows, where people with low incomes had a lot of trouble.

3 Awareness Levels of Government Initiatives in FinTech

Table 4.11: Awareness of Govt. Initiatives

Initiative	Awareness (%)
Jan Dhan Yojana	75
UPI	65
Aadhaar-enabled Payment	55
Digital Literacy Camps	40

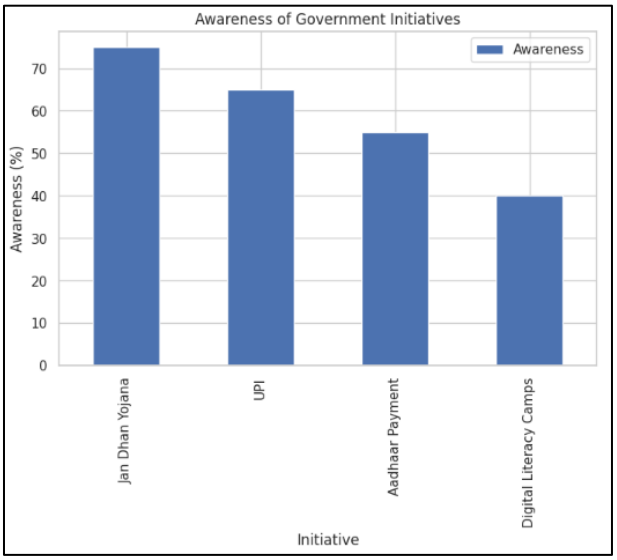

Fig. 9 Awareness of Govt. Initiatives

This table demonstrates how much people know about important government programs. The Jan Dhan Yojana was the most well-known (75%), followed by the UPI (65%). About half of people (55%) knew about Aadhaar-enabled services, whereas only 40% knew about digital literacy programs. These results show that flagship programs are working, but they also show that there are gaps in educational outreach. People don't know much about literacy

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initiatives, which makes it harder for them to use digital financial services successfully. This makes long-term attempts to include everyone in the financial system less effective.

Table 4.12: Perceived Effectiveness of Govt. Programs

Program	Effective(%)	Partially Effective %)	Ineffective(%)
Jan Dhan Yojana	65	25	10
UPI	70	20	10
Financial Literacy Camps	40	35	25

Respondents said that UPI (70% effective) or Jan Dhan the Yojana (65% effective) had a big impact, confirming that they helped people get better access to money. Many people thought that financial literacy camps were just somewhat effective (35%) or not at all effective (25%). This shows that the program's goals and results don't match up. It also shows that low-income and rural communities need more focused, useful, and easy-to-access literacy programs to help them improve their digital financial skills.

Table 4.13: Regulatory Confidence

Confidence in Regulation	Rural (%)	Urban (%)
High	20	40
Moderate	45	35
Low	35	25

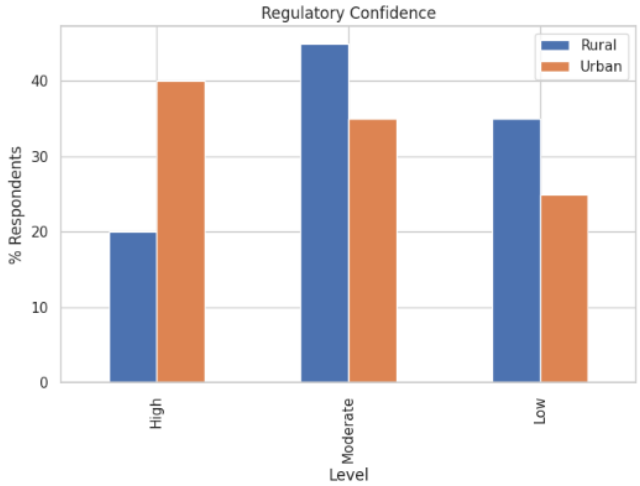

Fig. 10 Regulatory Confidence Graph

Respondents from cities and towns had different levels of trust in regulatory structures. Urban users were more confident (40% high), while rural users mostly said they were somewhat (45%) or low (35%) confident. This difference shows that there is a divergence between rural and urban areas not only in access to financial laws but also in trust in them. Rural people might be more likely to use digital financial services if there are better ways to handle complaints, more open oversight, and efforts to raise awareness.

Table 4.14: ANOVA – Govt. Policy Awareness vs. Adoption

F-value	Sig.
6.85	0.004

The ANOVA results (F = 6.85, Sig. = 0.004) show that there is a statistically significant link between policy awareness and adoption. People who knew more about government programs were also more likely to use FinTech services. This shows how important outreach is, since campaigns to raise awareness can lead to more people using the service. To keep the momentum of digital inclusion going, policymakers should make it a priority to increase literacy and education efforts, especially in rural and low-income areas.

Table 4.15: Regression – Financial Literacy & Adoption

Variable	Beta	Sig.
Financial Literacy	0.48	0.01

Regression analysis shows that there is a strong and positive link between financial literacy or adoption (Beta = 0.48, Sig. = 0.01). People who scored higher on financial literacy were more likely to use FinTech products. This shows that there is a need for well-organized training programs and easy-to-use online learning tools. Without enough financial

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literacy, even strong government programs could be underused, which would restrict their long-term effect on making sure that all groups of people are included in a sustainable way.

4 Preferred Literacy and Training Mechanisms.

FinTech can help more people utilize financial services, but it needs more than just access to infrastructure. It also needs tailored initiatives that improve literacy, security, or user confidence. Respondents pinpointed essential enhancements and training strategies to ensure sustainable adoption. Their opinions give us useful information on the parts of a strategy framework, such as priorities, reform initiatives, and how to make sure that presented solutions are correct. The tables below summarize these findings and help policymakers and providers of services figure out what to do to help.

Table 4.16: Respondents' Suggestions for Improvement

Suggestion	% Respondents
Better internet infra	60
Simplified KYC	50
Stronger security features	40
Awareness programs	55

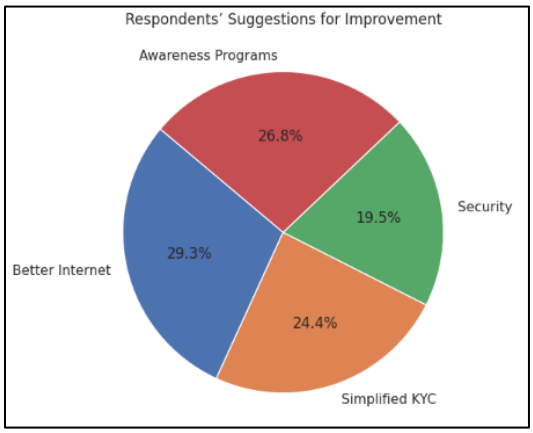

Fig. 11 Respondents' Suggestions for Improvement Graph

Respondents said that better connectivity (60%), awareness initiatives (55%), and simpler KYC processes (50%) were the most important changes that needed to be made. Security measures (40%) were also mentioned, which shows that customers are worried about online fraud. These results show that access and knowledge need to go along with making rules easier to follow. Working on these areas at the same time would not only increase adoption rates, but it would also develop trust and resilience in the virtual financial ecosystem, especially for people who live in rural areas and are using it for the first time.

Table 4.17: Preferred Training Methods for Literacy

Method	Preference (%)
Online workshops	30
Community sessions	45
Printed materials	25

Community meetings (45%) were the most popular way to learn to read and write, especially among people who lived in rural areas. This shows how important face-to-face interaction is. Younger and urban people were more likely to sign up for online workshops (30%), while older people were more likely to sign up for printed materials (25%). This variety shows that a multi-channel literacy approach is needed, one that combines digital platforms with initiatives in the community. Tailored delivery makes sure that people from different backgrounds learn what they need to know to use FinTech services with confidence.

Table 4.18: Strategic Framework Priorities (Ranked)

Priority	Rank
Infrastructure development	1
Digital literacy	2
Security & trust-building	3
Regulatory simplification	4

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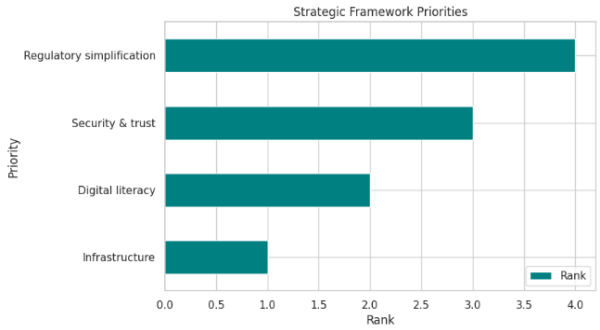

Fig. 12 Strategic Framework Priorities

The people who answered said that building infrastructure was the most important thing, followed by improving digital literacy, security, and making rules easier to obey. This rating shows a practical knowledge of the barriers to adoption, which means that access (to the internet and gadgets) must come before skill development and creating trust. It also shows that basic requirements are more significant than regulatory changes, even though they are important. A gradual approach that starts with structures and literacy is likely to lead to long-term financial inclusion that lasts.

Table 4.19: Willingness to Adopt with Reforms

Reform Implemented	Adoption Increase (%)
Free data packs	20
Simplified KYC	25
Cybersecurity trust	30

The results show that certain changes could make adoption much easier. The biggest expected rise in adoption (30%) came from improvements in cybersecurity. This was followed by making KYC easier (25%) and giving away or subsidizing data packs (20%). This shows that making things easier and creating trust are more effective at getting people to adopt than just lowering costs. Policymakers or FinTech companies should make updates for security and easy onboarding their top priorities to make sure that everyone can stay included in the long run.

Table 4.20: Proposed Strategic Framework (Survey Validation)

Dimension	Mean Score (1–5)	Rank
Infrastructure	4.5	1
Literacy	4.2	2
Security	4.0	3
Policy reforms	3.8	4

The survey validation revealed that tangible assets (mean = 4.5) and literacy (4.2) were the paramount factors, after by security (4.0) while policy reforms (3.8). This is consistent with previous findings and demonstrates the robustness of the system. The high score from the people who answered suggest that most people agree on what needs to be done first. This data-driven framework lays out a clear plan: make the infrastructure better, raise literacy levels, improve security, and make it easier to follow the laws. When put together, these things can make FinTech a powerful and long-lasting approach to include everybody in the economy.

Conclusion

This research highlights the various obstacles hindering FinTech deployment in India and their implications for sustainable financial inclusion. The mixed-method study, which involved 400 individuals from both rural and urban areas, revealed significant disparities in their knowledge and utilization of digital financial services. Those that live in rural locations have a lot of trouble with technology, such sluggish internet speeds and not being able to get smartphones. People who reside in cities, on one hand, are more worried about the safety of their online transactions and the security of their computers. Regulatory problems, like long KYC processes and regular transaction failures, make it hard for people to use it in all categories. Socio-economic and demographic factors—like age, gender, education, and income—have a big effect on how many people use FinTech. Higher literacy and awareness are linked to more people using it. Government programs like Jan Dhan Yojana and UPI have a big effect, but financial literacy programs need to be improved to work as well as they should. Respondents stressed the need for better infrastructure, easier regulatory processes, greater security measures, and literacy training across multiple channels to encourage long-term use. The verified strategic framework shows that boosting technology, literacy, policy, or trust all at once may help make digital financial ecosystems that are strong and open to everyone. To close the gap between rural and urban areas and make sure that FinTech helps India reach its long-term financial inclusion goals, these strategies must be put into action correctly.

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