PDUAMT Business Review, Volume VII, 2025, pp.127-141
ISSN: 2582-113X

A STUDY ON THE PERCEPTION AND USAGE OF FINTECH SERVICES AMONG URBAN WOMEN: A STUDY IN THE STATE OF ASSAM, INDIA

Dr. Nilanjan Bhattacharjee*

*Academic Advisor, ICON Commerce College, Guwahati

Abstract

This study explores the perception and usage of FinTech services among urban working women in Assam, a northeastern state of India, through an exploratory and descriptive research design. Data were collected using a convenience sampling method from a diverse cross-section of respondents across various employment sectors, ensuring representation in terms of age, education, and professional background. The study is based on primary data from 400 urban working women across twelve urbanised districts of Assam, supplemented by 30 qualitative interviews. The study covers a broad spectrum of FinTech services, including digital payments, neo-banking, lending platforms, investment tools, insurance technology, personal finance applications, remittance systems, and crowdfunding models.

Findings reveal a pronounced gap between awareness and actual adoption of FinTech services, primarily due to concerns related to digital security, fear of fraud, and limited digital confidence. Trust in digital systems emerges as a major sociological barrier, reflecting broader anxieties about technological change and institutional reliability. Although many women recognize the potential benefits of FinTech in improving financial management, persistent concerns limit their full engagement. The study also highlights a substantial digital financial literacy gap, emphasizing the urgent need for accessible education and trust-building initiatives.

From a sociological perspective, the research demonstrates how intersecting factors such as gender, professional background, education level, and age significantly influence digital inclusion patterns. It also underscores the localized cultural and infrastructural realities of Assam, where traditional financial practices coexist alongside emerging digital systems. The study concludes that increasing FinTech adoption among working women in transitional economies like Assam requires addressing structural trust deficits, improving digital and financial literacy, and developing culturally sensitive, user-friendly financial technologies. These insights provide valuable guidance for policymakers, educators, and FinTech developers aiming to foster inclusive digital financial ecosystems in similar socio-cultural contexts.

Keywords: FinTech, Digital Inclusion, Gender and Technology, Financial Literacy, Urban Sociology

JEL Classification: G20, G21, D14, O33, J16, R23

Introduction

The rapid growth of Financial Technology (FinTech) has transformed the global financial landscape, reshaping the way individuals and institutions manage, invest, and transfer money (Gomber et al., 2018). FinTech now covers a wide range of services, from mobile payments and peer-to-peer lending to digital banking and blockchain solutions (Arner et al., 2016). While these innovations promise greater financial inclusion, efficiency, and convenience, their adoption remains uneven, especially among women in developing economies (Demirgüç-Kunt et al., 2018). In India, despite impressive strides in building digital infrastructure and launching

initiatives like Jan Dhan Yojana, Aadhaar, and the Unified Payments Interface (UPI), a gender gap in FinTech adoption persists (Sarma & Pais, 2011; Mehrotra & Verma, 2021).

This study focuses on understanding how urban working women in Assam, a northeastern state of India, perceive and use FinTech services. Urban working women, in this context, are those residing in urban or semi-urban areas and engaged in paid employment across both formal sectors such as corporate jobs, government services, education, and healthcare and informal sectors like small businesses, self-employment, and gig economy roles (United Nations [UN], 2018). This group is marked by its growing financial independence and access to urban infrastructure, including digital and financial services (World Bank, 2020), although challenges like wage gaps, workplace discrimination, and limited advancement opportunities persist (International Labour Organization [ILO], 2022). Given their greater likelihood of accessing digital financial tools compared to rural or non-working women (Demirgüç-Kunt et al., 2018), urban working women represent a critical demographic for studying FinTech adoption.

Assam's financial ecosystem offers a particularly interesting case. The state is undergoing a period of transition where traditional cash-based systems and banking practices coexist with emerging digital financial solutions (Bhattacharjee & Das, 2020). Urban centers like Guwahati are experiencing rapid digitization, but many rural and semi-urban areas remain dependent on informal financial systems (Das & Dutta, 2022). This uneven shift has created a dual financial environment, where opportunities for FinTech growth exist but are still hindered by infrastructural gaps, digital illiteracy, and strong socio-cultural norms.

Despite these hurdles, the participation of women in Assam's workforce is steadily increasing across sectors like education, healthcare, small businesses, and the gig economy (Saikia & Bora, 2022). Their expanding economic role makes them crucial stakeholders in Assam's FinTech story. Digital financial services have the potential to give women greater control over their finances, empowering them to save, invest, and build secure financial futures. However, significant barriers remain. Issues like limited access to smartphones, lower digital literacy, societal restrictions on independent financial decision-making (Bora & Saikia, 2021), and widespread fears over cybersecurity and fraud (Reserve Bank of India [RBI], 2023) continue to restrict women's ability to fully engage with digital finance.

Addressing these barriers is essential for achieving meaningful financial inclusion. Women's access to FinTech tools does not just enhance individual autonomy it also strengthens household resilience and contributes to broader economic growth (Demirguç-Kunt et al., 2018). FinTech holds particular promise in bridging gaps left by traditional banking systems, offering women microloans, insurance, and investment opportunities that were historically difficult to access (GSMA, 2021).

However, without deliberate and inclusive strategies, there is a risk that new technologies could deepen existing gender inequalities. Policymakers, financial institutions, and FinTech developers must proactively design solutions that meet the specific needs of Assamese women through user-friendly, vernacular-based platforms, digital literacy initiatives, and strong security assurances (Mehrotra & Verma, 2022). Only then can Assam realize the full transformative potential of FinTech and create a more inclusive financial ecosystem where women are not just passive users but active drivers of digital change.

The Rise of FinTech and Its Sociological Implications

FinTech has emerged as a disruptive force in global finance, reshaping traditional banking models and democratizing access to financial services (Schueffel, 2016). The integration of digital payment systems, blockchain technology, and artificial intelligence has facilitated faster,

cheaper, and more transparent financial transactions (Philippon, 2016). In developing economies, FinTech holds particular promise for enhancing financial inclusion by reaching unbanked and underbanked populations (GSMA, 2020). However, the adoption of these technologies is not uniform; it is influenced by factors such as digital literacy, trust in technology, and socio-cultural norms (Ozili, 2018).

From a sociological perspective, FinTech adoption is not merely a technological shift but a socio-cultural transition that interacts with existing power structures, gender roles, and institutional trust (Mader, 2018). Feminist scholars argue that financial technologies, while potentially empowering, often replicate patriarchal biases embedded in traditional financial systems (Rankin, 2013). For instance, women may face restricted access to digital financial services due to lower smartphone ownership, limited financial autonomy, or societal norms discouraging independent financial decision-making (Gammage et al., 2017). In India, where gendered financial exclusion remains a persistent issue, understanding how women perceive and engage with FinTech is essential for designing inclusive policies (Khera, 2016).

FinTech Adoption Among Women in India: Existing Research and Gaps

The literature reveals persistent gendered barriers in FinTech adoption across India, with urban working women demonstrating markedly lower engagement with digital financial services compared to men (Demirguç-Kunt et al., 2021). This disparity becomes particularly pronounced in transitional economies like Assam, where high mobile penetration coexists with surprisingly low digital financial engagement (Bhattacharjee & Das, 2023). Cultural norms emerge as a dominant theme, with studies indicating many women require male approval for financial transactions, creating invisible barriers to digital inclusion (Saikia & Bora, 2022). The hybrid nature of Assam's financial ecosystem presents unique challenges, as traditional microfinance systems continue to dominate even as modern FinTech solutions become available (Das & Dutta, 2023).

Research highlights how linguistic and cultural specificity shapes financial behaviours, with strong preferences for vernacular interfaces and localized financial products (Bora, 2023). The professional context appears significant, with women in formal employment showing greater FinTech adoption than those in traditional sectors like tea cultivation (Assam Economic Survey, 2023). Patriarchal structures surface repeatedly in studies, not just as social norms but as institutionalized barriers embedded in financial systems (Reserve Bank of India [RBI], 2023). Infrastructure limitations compound these challenges, particularly in semi-urban and rural areas where connectivity issues persist (GSMA, 2023).

Emerging scholarship emphasizes the potential of leveraging Assam's existing microfinance networks and unique cultural assets, such as matrilineal traditions in certain communities, to design more inclusive financial technologies (World Bank, 2023). Comparative studies with neighbouring regions suggest that agent banking models and female-centric product design could significantly improve adoption rates (KPMG, 2022). The literature consistently identifies three key intervention areas: digital literacy programs tailored to women's needs, development of culturally-sensitive FinTech solutions, and infrastructure improvements in underserved areas (Global Findex, 2021). These findings underscore the need for context-specific approaches to bridge the digital gender divide in Assam's evolving financial landscape.

Despite growing research on FinTech adoption in India, significant gaps remain regarding women's digital financial inclusion in Assam. Current studies largely overlook the intersectional dynamics of how caste, ethnicity, and occupational sectors differentially impact FinTech usage among Assamese women (Bhattacharjee & Das, 2023). While patriarchal barriers are well-documented (Bora & Saikia, 2021), there is insufficient examination of how

Assam's unique cultural contexts - including matrilineal traditions in some communities - might enable alternative pathways to financial inclusion. The literature also lacks rigorous evaluations of localized policy interventions like Assam's Digital Mission or vernacular FinTech solutions, despite evidence that language remains a critical barrier (Das & Dutta, 2023). Furthermore, most studies employ cross-sectional designs that cannot capture how adoption evolves across generations or life stages, particularly for women transitioning from informal to formal work sectors. These gaps highlight the need for mixed-methods research that combines quantitative surveys with ethnographic approaches to better understand the socio-cultural dimensions of FinTech adoption in Assam's rapidly urbanizing context.

Research Objectives

1. To examine the socio-cultural and structural factors influencing the disparity between awareness and actual usage of FinTech services among urban working women in Assam, with particular focus on (a) digital security concerns, (b) gendered financial decision-making norms, and (c) institutional trust barriers.
2. To assess how intersecting identity markers (professional sector, education level, age, and ethnicity) shape digital financial inclusion patterns among Assam's urban working women.

Significance of the Study

This research carries substantial scholarly and pragmatic implications for advancing financial inclusion in emerging economies. By systematically investigating the sociocultural and structural determinants inhibiting FinTech adoption among urban professional women in Assam, the study offers three critical contributions: First, it provides policymakers with empirically grounded evidence to formulate gender-responsive digital finance policies and targeted financial literacy initiatives. Second, it equips FinTech innovators with actionable insights to develop culturally-adapted, vernacular-based platforms that address gender-specific usability concerns and security apprehensions.

From a theoretical perspective, the study advances knowledge in feminist political economy by elucidating how technological adoption patterns are mediated through intersecting axes of gender, class, and regional identity in transitional economies. Furthermore, it enriches urban sociology discourse by examining the dialectic between digital financial systems and traditional economic practices in semi-peripheral regions undergoing rapid urbanization.

At the grassroots level, enhancing women's FinTech engagement promises multiplier effects: strengthening individual financial agency, improving household economic resilience, and contributing to Sustainable Development Goals (SDGs) related to gender equality (SDG 5) and reduced inequalities (SDG 10). The study's context-specific findings hold particular relevance for developing inclusive digital finance frameworks across India's northeastern states and similar Global South contexts where traditional and modern financial ecosystems coexist.

Theoretical Framework and Methodology

This study adopts an exploratory and descriptive research design, integrating quantitative surveys with qualitative interviews to understand FinTech adoption among urban working women in Assam. It is anchored in the Technology Acceptance Model (TAM) (Davis, 1989) and Feminist Political Economy theory (Elson, 1999), examining both technological and socio-cultural dimensions of digital financial inclusion.

Primary data were collected using a structured questionnaire through convenience sampling across twelve urbanized districts of Assam, namely Kamrup Metropolitan, Jorhat, Tinsukia, Nalbari, Cachar, Dibrugarh, Sonitpur, Nagaon, Golaghat, Barpeta, Sivasagar, and Morigaon. Respondents were working women across government, private, and entrepreneurial sectors.

These districts were selected because they represent Assam's most commercially active and urban or peri-urban centres, with higher concentrations of salaried women, digital banking touchpoints, UPI-enabled merchants, and smartphone penetration (Bhattacharjee & Das, 2020; Das & Dutta, 2022; GSMA, 2023; Government of Assam, 2023). This selection aligns with prior studies that emphasise focusing on urbanised financial ecosystems when analysing gendered FinTech adoption (Bhattacharjee & Das, 2020; Das & Dutta, 2022; GSMA, 2023)

Although Assam has 35 districts, the study is limited to these twelve with demonstrable urban economic bases. The research objective is to analyse FinTech perception and usage among *urban working women* who participate in formal and semi-formal financial systems, not the rural female population. Similar methodological delimitations are found in financial-inclusion studies focusing on specific socio-economic clusters (Demirgüç-Kunt et al., 2021; World Bank, 2023)

A total of 400 usable responses were collected from working women across the twelve districts. A non-probability convenience sampling approach was adopted because (a) no centralised frame exists for "urban working women" in Assam, and (b) access to working women varies across employment settings. This approach is consistent with exploratory FinTech studies in emerging economies (Mehrotra & Verma, 2021; Roy, 2021)

Respondents were approached at workplaces, commercial areas, and service centres (banks, telecom outlets, payment kiosks) during working hours. Participation was voluntary, and only women who self-identified as "working for income" were included to match the target group of urban working women.

Quantitative data were analysed using descriptive statistics, cross-tabulations, Chi-square tests, and multiple logistic regression. Additionally, qualitative insights were gathered through semi-structured interviews, analysed using thematic coding with NVivo software. Secondary data from academic and government sources supplemented the research.

Given the non-probability sampling and the localized urban focus, the findings offer important exploratory insights but may not be fully generalizable to the broader Indian context.

Measurement of Key Variables

FinTech Awareness Score

Respondents were asked to rate their awareness of eight categories of FinTech services (for example UPI / mobile wallets, neo-banking, digital lending apps, online investment platforms, insurance / Insurtech, personal finance / budgeting apps, domestic digital remittance tools, and crowdfunding platforms) on a 5-point Likert scale where 1 meant "I have never heard of this" and 5 meant "I understand this service well and could explain it to someone else." The FinTech Awareness Score for each respondent was computed as the arithmetic mean of these eight item scores. This produced a continuous indicator ranging from 1 to 5.

Security Concern Score

Respondents rated their level of concern about digital fraud, data theft, and unauthorised transactions on a 5-point Likert scale (1 = "Not concerned at all," 5 = "Extremely concerned").

Trust in Institutions Score

Respondents rated their trust in banks, payment apps, and other digital financial service providers on a 5-point Likert scale (1 = "No trust," 5 = "Complete trust").

Gendered Norms Influence Score

Respondents indicated the extent to which financial decisions in their household are influenced or controlled by male family members, again on a 5-point Likert scale (1 = "Not at all," 5 = "Almost always decided by them").

Composite Likert-style perception indices of this kind are standard in financial inclusion and technology adoption studies, including those that apply constructs from the Technology Acceptance Model and gendered financial autonomy literature (Davis, 1989; Elson, 1999; Venkatesh, Thong, & Xu, 2012; Sinha, Sharma, & Verma, 2020).

Analysis of Objective No 1:

Descriptive Statistics

The survey was conducted with a sample of 400 urban working women across Select cities in Assam. Key demographic and survey-related statistics are summarized below:

The survey results revealed that the respondents' ages ranged from 22 to 50 years, with a mean age of approximately 36 years. In terms of employment, 37.5% were engaged in government services, another 37.5% worked in the private sector, and 25% were entrepreneurs or self-employed. The mean FinTech Awareness Score, calculated as the mean self-rated awareness (1 = never heard, 5 = can explain confidently) across eight FinTech service types, was 2.99 out of 5, indicating a moderate level of awareness. Regarding usage, around 59% of the women reported actively using FinTech services such as UPI applications, mobile wallets, and digital investment platforms, while 41% did not engage with these technologies. Concerning digital security, half of the respondents (50%) expressed high levels of concern, 30% indicated medium concern, and 20% reported low concern. The average level of trust in financial institutions was relatively moderate, with a mean trust score of 3.12 out of 5.

Cross-tabulation: Security Concerns and FinTech Usage

A cross-tabulation between digital security concerns and FinTech usage revealed that 57.7% of respondents who expressed high security concerns still used FinTech services. Similarly, among those with medium or low levels of concern, 60% reported using FinTech platforms. These findings suggest that although digital security concerns are prevalent among urban working women, they do not act as an absolute deterrent to the adoption and usage of FinTech services.

Regression Analysis

An Ordinary Least Squares (OLS) regression analysis was conducted to examine the extent to which security concerns, trust in institutions, and the influence of gendered financial decision-making norms predict FinTech awareness scores.

To examine predictors of FinTech awareness, an Ordinary Least Squares (OLS) regression model was estimated. The dependent variable in this model is the FinTech Awareness Score, which reflects each respondent's self-reported level of awareness of different FinTech services. The independent variables are Security Concerns, Trust in Institutions, and Gendered Norms Influence.

Table 1: Regression Analysis

Predictor Variable	Coefficient (B)	Standard Error	t-Statistic	p-Value	Confidence Interval (2.5%)	Confidence Interval (97.5%)
Security Concerns (Score)	-0.02475	0.09387	-0.26363	0.792203	-0.20929	0.159799
Trust in Institutions (Score)	0.033541	0.051156	0.655659	0.512424	-0.06703	0.134111
Gendered Norms Influence (Score)	0.048962	0.097183	0.503811	0.614675	-0.1421	0.24002

Source: *Primary survey data collected by the researcher (2025)*

Interpretation

The multiple regression analysis sought to determine whether security concerns, trust in institutions, and the influence of gendered financial decision-making norms significantly predicted FinTech awareness among urban working women. The results indicated that none of the independent variables were statistically significant predictors, with p-values for all variables exceeding the conventional threshold of 0.05. The model's R-squared value was extremely low at 0.0018, suggesting that the three predictors collectively explained less than 0.2% of the variance in FinTech awareness scores. Additionally, the F-statistic was 0.237 with a p-value of 0.871, further confirming that the overall model lacked statistical significance. These findings imply that while security concerns, trust in institutions, and gendered norms are important factors contextually, they do not independently predict FinTech awareness in this cohort. It is likely that other latent variables such as digital literacy, peer influence, past experience with technology, or socio-economic status may exert a stronger influence on FinTech awareness and adoption patterns.

Qualitative Data Analysis

Semi-structured interviews were conducted with 30 respondents to gain a deeper and more nuanced understanding of the socio-cultural and structural factors influencing FinTech engagement among urban working women in Assam. The interview guide included open-ended questions that explored participants' experiences with FinTech platforms, their perceptions of digital security, family dynamics in financial decision-making, and levels of trust in financial institutions. Interviews were transcribed verbatim, and thematic analysis was carried out using NVivo software to systematically organize and interpret the qualitative data. Through iterative coding and categorization, three prominent themes were identified: fear of digital fraud, husband/father approval and influence, and institutional betrayal and lack of redress.

The first theme, fear of digital fraud, emerged as a major emotional barrier. Many participants expressed anxiety over the possibility of losing their money due to hacking, phishing, or unauthorized transactions, indicating that despite using FinTech services, their engagement was often accompanied by fear and scepticism. Statements like "I am scared of someone hacking my bank account if I use online apps" and "I trust cash more because it feels real" illustrate how security apprehensions persist even among users.

The second theme, husband/father approval and influence, reflected the persistence of gendered financial norms. Several women revealed that their financial behavior, especially in adopting

new technologies like FinTech, was heavily influenced or even controlled by male family members. Common responses included sentiments such as "My husband handles all our online payments" and "My father said it's risky to put card details online," suggesting that financial autonomy remains constrained by patriarchal family structures.

The third theme, institutional betrayal and lack of redress, highlighted widespread mistrust toward financial institutions and digital platforms. Many women cited negative experiences or perceived lack of transparency from banks and FinTech companies, fuelling a sense of vulnerability. Remarks such as "Banks hide charges in fine print; who knows what these apps do?" and "If something goes wrong, nobody helps; we have to run around" captured the underlying frustrations related to inadequate consumer protection and grievance redressal mechanisms.

Together, these themes reveal that emotional, relational, and structural barriers not merely technological factors play critical roles in shaping women's engagement with FinTech services. Building trust, enhancing consumer protection, and promoting financial autonomy must therefore be central to any strategy aimed at improving FinTech adoption among this demographic.

Summary of Findings

The quantitative findings suggest that although a significant number of women express concerns about digital security, these apprehensions do not entirely prevent them from engaging with FinTech services. The results of the regression analysis further demonstrate that, when examined individually, factors such as security concerns, institutional trust, and gendered financial norms have limited influence on shaping FinTech awareness levels. In contrast, the qualitative insights unveil a more intricate landscape of emotional and socio-cultural barriers. Themes such as fear of digital fraud, reliance on male family members for financial decision-making, and deep-seated mistrust toward financial institutions emerged as critical obstacles that inhibit women's full and confident participation in FinTech ecosystems. These findings highlight the need for interventions that go beyond promoting technical literacy alone. Efforts to expand FinTech adoption among urban working women must also focus on building emotional trust, enhancing feelings of digital security, and fostering greater financial autonomy, both at the individual and institutional levels.

Analysis for Objective 2

Analytical metrics

The quantitative analysis for the second objective was carefully designed to assess how intersecting identity markers namely professional sector, education level, age, and ethnicity shape the patterns of digital financial inclusion among urban working women in Assam. Structured survey data facilitated a comprehensive evaluation of FinTech usage trends and digital financial literacy levels across diverse demographic categories.

The survey instrument collected data on a range of variables essential for the analysis. Respondents were categorized by their professional sector (Government, Private Sector, Entrepreneur, NGO), education level (High School, Bachelor's Degree, Master's Degree, Professional Degree), and age group (22–30 years, 31–40 years, 41–50 years). Ethnicity was recorded with classification into major groups such as Assamese, Bengali, Bodo, Karbi, Mishing, and Others. In addition to demographic information, participants reported their FinTech usage status, coded both as a binary variable (User/Non-user) and in terms of the frequency and range of digital services used. A Digital Financial Literacy Score was computed

for each respondent, based on objective measures of their knowledge regarding secure digital practices, transaction mechanisms, and fraud prevention strategies.

To process the collected data, several statistical techniques were employed. Descriptive statistics were first utilized to present the overall FinTech usage rates and to summarize the mean digital financial literacy scores within each demographic group. Following this, cross-tabulations were conducted to explore the bivariate relationships between FinTech usage and individual identity markers such as professional sector, education, age, and ethnicity. Chi-square tests of independence were applied to assess whether the observed differences between groups were statistically significant, providing initial insights into how identity influences FinTech engagement.

Further, a binary logistic regression model was developed to deepen the analysis. In this model, the dependent variable was FinTech usage (coded as 1 for users and 0 for non-users), while the independent variables included professional sector, education level, age group, and ethnicity. Logistic regression enabled the estimation of the likelihood that a respondent would adopt FinTech services based on her identity attributes, controlling for the simultaneous influence of multiple factors. This approach helped move beyond simple associations to understanding predictive relationships between identity and digital financial inclusion.

An intersectionality framework guided the interpretation of the results. Rather than examining identity categories such as age, education, or ethnicity in isolation, the analysis considered how overlapping and interconnected social identities collectively influenced FinTech usage patterns. For example, cross-tabulated data allowed the exploration of whether younger women employed in the private sector with higher education levels demonstrated higher FinTech adoption rates compared to older women entrepreneurs with lower levels of education. This analytical perspective acknowledges that financial inclusion experiences are shaped by the interplay of multiple socio-cultural factors rather than single determinants.

The interpretation of the quantitative findings will be centered on identifying significant associations between identity markers and FinTech adoption patterns. Chi-square test results will be analyzed to determine which demographic factors such as professional sector, education level, age group, or ethnicity are significantly associated with higher or lower rates of FinTech usage. Simultaneously, the strength and direction of predictors from the logistic regression model will be examined to understand which factors most strongly influence the likelihood of adopting FinTech services. Special attention will be given to exploring how education, professional exposure, and cultural identity interact to either facilitate or hinder digital financial inclusion among urban working women. This intersectional approach aims to uncover the nuanced ways in which overlapping identities compound advantages or disadvantages in digital access. Based on these insights, the study will identify specific identity groups, such as lower-educated entrepreneurs or older ethnic minority women, who may require targeted interventions to bridge gaps in FinTech literacy and access. The ultimate goal of this interpretation is to translate statistical findings into practical recommendations for inclusive digital financial strategies tailored to the socio-cultural realities of Assam.

Through this rigorous application of descriptive, inferential, and multivariate statistical techniques, the study systematically analysed the complex ways in which identity markers influence digital financial behaviours among urban working women in Assam.

Table 2: Descriptive Statistics and FinTech Usage Across Demographic Categories

Variable	Category	Frequency (n)	Percentage of Total (%)	FinTech Users (%)
Professional Sector	Government	150	37.5%	55.3%
	Private Sector	150	37.5%	62.7%
	Entrepreneur/NGO	100	25.0%	58.0%
Education Level	High School	80	20.0%	40.0%
	Bachelor's Degree	180	45.0%	61.1%
	Master's Degree	100	25.0%	68.0%
	Professional Degree	40	10.0%	70.0%
Age Group	22–30 years	130	32.5%	65.4%
	31–40 years	160	40.0%	58.1%
	41–50 years	110	27.5%	51.8%
Ethnicity	Assamese	180	45.0%	61.2%
	Bengali	80	20.0%	57.5%
	Bodo	50	12.5%	48.0%
	Karbi	40	10.0%	50.0%
	Mishing	30	7.5%	46.7%
	Others	20	5.0%	55.0%

Source: *Primary survey data collected by the researcher (2025)*

Table 3: Logistic Regression Results Predicting FinTech Usage

Predictor	B Coefficient	Standard Error	Wald Chi-Square	p-value	Odds Ratio (Exp(B))
Professional Sector (Private)	0.420	0.210	4.00	0.045	1.52
Professional Sector (Entrepreneur/NGO)	0.270	0.230	1.38	0.240	1.31
Education Level (Bachelor's)	0.580	0.260	4.98	0.026	1.79
Education Level (Master's/Professional)	0.740	0.280	6.98	0.008	2.10
Age Group (31–40)	-0.300	0.220	1.86	0.172	0.74
Age Group (41–50)	-0.540	0.250	4.66	0.031	0.58
Ethnicity (Minority Groups)	-0.430	0.240	3.21	0.073	0.65

Source: *Primary survey data collected by the researcher (2025)*

Interpretation

The descriptive analysis revealed important patterns regarding FinTech adoption across different identity groups among urban working women in Assam. In terms of professional sector, women employed in the private sector exhibited the highest FinTech usage rate (62.7%), followed by entrepreneurs and NGO workers (58.0%), while government employees showed comparatively lower usage (55.3%). Education level showed a strong positive association with FinTech adoption; usage rates progressively increased from 40.0% among high school graduates to 70.0% among those holding professional degrees. Age also played a notable role, with younger respondents (22–30 years) showing the highest adoption rate at 65.4%, compared to 58.1% for those aged 31–40 years and 51.8% for those aged 41–50 years. Ethnic background influenced usage patterns as well; Assamese women exhibited the highest adoption rate (61.2%), whereas women from Bodo and Mishing communities showed lower engagement, at 48.0% and 46.7% respectively.

The logistic regression analysis further confirmed these trends by identifying education level and professional sector as significant predictors of FinTech adoption. Women holding a bachelor's degree were 1.79 times more likely to use FinTech services compared to those with a high school education, while those with a master's or professional degree were over twice as likely (Odds Ratio = 2.10). Employment in the private sector also significantly increased the likelihood of FinTech usage (Odds Ratio = 1.52) compared to government employment. Age and ethnicity, while influencing usage rates descriptively, were not statistically significant predictors in the regression model at the 5% confidence level, although minority ethnic group status approached marginal significance. The model's Nagelkerke R^2 value of 0.184 indicates that approximately 18.4% of the variance in FinTech usage could be explained by the identity variables included.

Overall, the findings suggest that higher education and private sector employment play key roles in facilitating digital financial inclusion among urban women, while older age groups and minority ethnic backgrounds may still face barriers to adoption. These insights highlight the need for targeted digital literacy interventions that account for educational, occupational, and cultural differences within the urban female population of Assam.

Summary of the findings

This study set out to examine the influence of intersecting identity markers namely professional sector, education level, age, and ethnicity on patterns of digital financial inclusion among urban working women in Assam. Using a mixed-methods approach with an emphasis on quantitative analysis, the research revealed important disparities in FinTech usage across different demographic segments.

Descriptive statistics indicated that women employed in the private sector, those holding higher educational qualifications, and younger age groups exhibited higher rates of FinTech adoption. Assamese women demonstrated comparatively greater digital financial inclusion, whereas women from ethnic backgrounds such as the Bodo and Mishing communities showed lower engagement levels.

The logistic regression analysis confirmed that higher education levels and private sector employment were significant predictors of FinTech usage, while age and ethnicity, though influential descriptively, were not statistically significant predictors when controlling for other factors. The model explained approximately 18.4% of the variance in FinTech usage behavior.

Overall, the findings highlight that while educational attainment and occupational exposure enhance women's digital financial participation, persistent barriers remain for older women and those from marginalized ethnic groups. These results underscore the need for culturally and educationally sensitive interventions aimed at promoting equitable digital financial access for all sections of urban working women in Assam.

Discussion and Conclusion

This study examined the perception, usage, and barriers surrounding FinTech services among urban working women in Assam. The findings revealed a complex and layered reality of digital financial inclusion shaped by both individual-level factors and broader socio-cultural structures.

Quantitative results showed that although concerns around digital security, fraud, and institutional trust were common, these factors alone did not significantly predict FinTech awareness or usage when examined individually through regression analysis. Instead, educational attainment and professional exposure emerged as strong predictors of FinTech adoption. Women with higher education levels and those employed in the private sector were significantly more likely to use FinTech services compared to their counterparts in government employment or with lower educational backgrounds. Although descriptive data indicated that younger women and Assamese women had higher FinTech adoption rates, age and ethnicity were not statistically significant predictors when controlling for other factors. This highlights that while demographic variables such as age and ethnicity influence patterns of usage, their impact is intertwined with education and professional environment.

The qualitative findings enriched this understanding by revealing emotional and relational barriers that quantitative models alone could not capture. Fear of digital fraud, reliance on male family members for financial decision-making, and deep-rooted mistrust towards financial institutions emerged as critical obstacles inhibiting full and confident FinTech engagement. These insights emphasize that technological access and awareness must be accompanied by emotional trust-building and cultural sensitivity if digital financial inclusion goals are to be achieved.

Together, the quantitative and qualitative analyses highlight that FinTech adoption among urban working women is not merely a function of access to technology or technical literacy. It is deeply influenced by educational background, employment sector, socio-cultural expectations, emotional security, and the perceived reliability of financial institutions.

In conclusion, promoting FinTech usage among urban women in transitional economies like Assam requires an integrated and multifaceted approach. Improving digital financial literacy, fostering emotional resilience towards digital platforms, building institutional trust, and designing culturally sensitive financial technologies are all critical components. Beyond expanding access, stakeholders must address the hidden emotional and relational barriers that continue to limit women's full participation in the digital financial ecosystem. By doing so, Assam and similar regions can move towards a more inclusive, equitable, and sustainable model of digital financial empowerment for women.

Practical Implications

The findings of this study offer several actionable insights for policymakers, educators, FinTech developers, and financial institutions seeking to enhance digital financial inclusion among urban working women. First, there is a pressing need to design and implement targeted digital financial literacy programs specifically tailored for women, focusing not only on

technical competencies but also on building confidence in navigating digital financial systems. Second, the development of culturally adapted FinTech solutions, including interfaces in local languages and culturally familiar formats, is critical to accommodate the linguistic and cultural diversity of users, particularly among minority ethnic groups. Third, trust-building initiatives must be prioritized, involving the strengthening of consumer protection mechanisms, simplification of grievance redressal systems, and transparent communication regarding digital security measures to foster greater confidence in FinTech platforms. Moreover, special interventions should focus on women with lower educational backgrounds and those employed in government or informal sectors, where FinTech adoption remains comparatively low. Community-based outreach efforts, leveraging the influence of local NGOs, women's groups, and trusted community leaders, can also play a pivotal role in promoting FinTech literacy and bridging trust gaps. Finally, policymakers must formulate inclusive, gender-sensitive digital financial inclusion strategies that explicitly address the socio-cultural and emotional barriers inhibiting women's full participation, moving beyond a purely infrastructural focus. By implementing these multifaceted interventions, stakeholders can contribute significantly to building a more inclusive and empowering digital financial ecosystem.

References

Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of FinTech: A new post-crisis paradigm? *Georgetown Journal of International Law, 47*(4), 1271–1319.

Bhattacharjee, N., & Das, R. (2020). Digital financial inclusion in Assam: Bridging the gender gap. *Journal of Northeast Indian Economics, 15*(2), 45–62.

Bora, J. (2023). Vernacular interfaces and financial inclusion: Designing for linguistic diversity in India's Northeast. *Technology in Society, 74*, 102301. https://doi.org/10.1016/j.techsoc.2023.102301

Bora, J., & Saikia, M. (2021). Gendered financial behaviors in digital transitions: Evidence from Assam. *Economic and Political Weekly, 57*(34), 67–75.

Das, M., & Bhuyan, D. (2019). Gender and digital inclusion: Challenges in Northeast India. *Indian Journal of Sociology, 23*(2), 113–129.

Das, R., & Dutta, P. (2022). Hybrid financial ecosystems in transitional economies: The case of Assam. *Journal of Development Studies, 59*(5), 712–728. https://doi.org/10.1080/00220388.2022.2154861

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2021). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19.* World Bank. https://doi.org/10.1596/978-1-4648-1897-4

Elson, D. (1999). Labor markets as gendered institutions: Equality, efficiency and empowerment issues. *World Development, 27*(3), 611–627.

Gammage, S., Kes, A., & Winograd, L. (2017). *Promoting women's economic empowerment: What works?* International Center for Research on Women (ICRW).

Global Findex. (2021). *Financial inclusion, digital payments, and resilience in the age of COVID-19.* World Bank. https://globalfindex.worldbank.org

Gomber, P., Koch, J., & Siering, M. (2018). Digital finance and FinTech: Current research and future research directions. *Journal of Business Economics, 87*(5), 537–580.

Government of Assam. (2023). *Assam economic survey 2022–23.* Directorate of Economics and Statistics.

GSMA. (2020). *The mobile gender gap report 2020.* https://www.gsma.com

GSMA. (2023). *The mobile gender gap report 2023.* https://www.gsma.com

International Labour Organization (ILO). (2022). *Women at work trends 2022.* https://www.ilo.org

Khera, R. (2016). Cash vs. cashless: Differences in financial behavior. *Economic and Political Weekly, 51*(52), 60–66.

KPMG. (2022). *Digital payments adoption in India: Gender perspectives.* https://www.kpmg.com

Mader, P. (2018). Contesting financial inclusion. *Development and Change, 49*(2), 461–483.

Mehrotra, N., & Verma, S. (2021). Bridging the gender gap in digital financial services in India. *Journal of Financial Inclusion, 4*(1), 1–19.

Mehrotra, N., & Verma, S. (2022). Beyond access: Gender norms and FinTech usage in India. *Journal of Financial Inclusion, 5*(2), 24–37.

Organisation for Economic Co-operation and Development (OECD). (2020). *Digital transformation and women's empowerment.* OECD Publishing. https://doi.org/10.1787/fb40f672-en

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review, 18*(4), 329–340.

Philippon, T. (2016). *The FinTech opportunity (NBER Working Paper No. 22476).* National Bureau of Economic Research. https://doi.org/10.3386/w22476

Rankin, K. N. (2013). A critical geography of women's financial inclusion. *Environment and Planning A, 45*(4), 845–861.

Reserve Bank of India (RBI). (2023). *Annual report on financial inclusion 2022–23.* https://www.rbi.org.in

Roy, R. (2021). FinTech in India: Opportunities and barriers for women. *Asian Journal of Finance and Economics, 8*(1), 44–57.

Saikia, M., & Bora, J. (2022). Gendered financial behaviors in digital transitions: Evidence from Assam. *Economic and Political Weekly, 57*(34), 67–75.

Sarma, M., & Pais, J. (2011). Financial inclusion and development: A cross-country analysis. *Journal of International Development, 23*(5), 613–628.

Schueffel, P. (2016). Taming the beast: A scientific definition of FinTech. *Journal of Innovation Management, 4*(4), 32–54.

Sinha, S., Sharma, A., & Verma, R. (2020). Digital literacy and financial inclusion in India. *International Journal of Information Management, 54*, 102189. https://doi.org/10.1016/j.ijinfomgt.2020.102189

United Nations (UN). (2018). *Turning promises into action: Gender equality in the 2030 agenda for sustainable development.* UN Women. https://www.unwomen.org

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory. *MIS Quarterly, 36*(1), 157–178.

World Bank. (2020). *Women, business and the law 2020.* https://www.worldbank.org/en/research/publication/women-business-and-the-law-2020

World Bank. (2023). *Agent banking models for women's financial inclusion: Lessons from South Asia.* https://www.worldbank.org

****