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"Mobile Banking Adoption and Financial Inclusion at the Bottom of the Pyramid: A Theoretical Framework integrating Accounting Accountability, Regulatory, Ethical, and Behavioral Perspectives"

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Abstract
Mobile banking has become an essential tool to enhance access to financial services, particularly for those who lack traditional banking options. The data was collected from 108 street vendors from selected regions of Northern India, using a snow ball sampling method. This study creates a framework that combines user behavior, regulatory factors, and ethical considerations to understand how mobile banking encourages responsible financial practices. The research expands on existing models to highlight mobile banking's role in fostering ethical and transparent financial actions, beyond just being a tech innovation. The current study strengthens the understanding of how inclusion supported by digital technology can strengthen the ethics, accountability and integrity in financial reporting and governance systems through integration of digital adoption with accounting theory. The model prioritizes theoretical framework integration over empirical applicability, providing a framework for upcoming research on the behavioral and ethical foundations of accounting in the domain of digital finance.

Keywords: Mobile banking, bottom of pyramid, adoption, self-efficacy, financial inclusion, integrated framework, accounting and accountability, governance and ethics

Introduction

The mobile banking (m-banking) is featured as a channel where a communication with a bank is done by a user with the help of smartphone (Barnes and Corbit, 2003). The adoption of m- banking has gradually become important in the financial inclusion program, particularly in the rapidly digitizing regions like Northern India where a mix of urban and semi-urban population is rapidly integrating digital into their daily lives. The m-banking is materialized as a structural driver of inclusive finance especially for bottom of pyramid (BoP) segments. The term "Bottom of the Pyramid" was introduced by management guru C.K. Prahalad, who characterized it as the poorest two-thirds of the world's population surviving on less than $2 per day or a per capita income of less than $1,500 per annum. As retrieved from World Bank data (2025), the four billion of underprivileged individuals, the bulk of the world's population, consist of the bottom of economic pyramid. Worldwide, this is the 2.7 billion people who survives below the income of $2.50 a day. The underserved users of m-banking living in the developing regions like India, Africa, Vietnam etc. face significant obstacles, such as low literacy, un-employment, limited skills, and large families.

In studying mobile banking adoption among underserved users, it is vital to differentiate between behavioral drivers and contextual drivers. A behavioral driver pertains to internal psychological and cognitive parameters such as self-efficacy, performance expectancy, effort expectancy, and social influence, shaping user's intention to engage with technology (Venkatesh et al., 2003; Bandura, 1997).These drivers tend to influence or restrict the actions towards technology among low income population. Moreover, the financial inclusion is positioned as the most important policy actively promoted in India, aiming to spread financial services to the bottom of pyramid segments. As retrieved from RBI data, this initiative is linked with accounting and regulatory frameworks, comprising the Reserve Bank of India's (RBI) guidelines, anti-money laundering (AML) regulations and taxation norms, which collectively facilitate the formalization of financial transactions and enhance system transparency. The Prevention of Money Laundering Act (PMLA) of 2002, along with Know Your Customer (KYC) norms, mandates financial institutions to authenticate customer identities and monitor financial activities, by preventing illegal financial flows and promoting accountability (Reserve Bank of India, 2010; Prevention of Money Laundering

Act, 2002).

Despite the increasing smartphone penetration and digital awareness in the region, the adoption of m-banking services remains inconsistent (Hidas, 2024). By the assistance of fin-tech, the m- banking conveys financial transaction through mobile devices thus enhancing financial inclusion amongst its users (Elmaasrawy and Tawfik, 2024; Lamey et al. 2024). The m-banking adoption in India developed in recent years due to major digital initiatives such as such as Jan Dhan Yojana and Digital India. Apart from regulatory compliance, the financial inclusion demonstrates accountability of banks' to ethically provide an equitable access to financial services, promoting improvements and significant growth for the underserved communities (Gupta, 2022). By integrating these frameworks, financial inclusion not only empowers the individuals but also strengthens the integrity and flexibility of the financial system.

As examined by Khan (2025), the m-banking not only provides convenience to the customers; rather it opens the doors of formal finance for the people who have often been excluded. The banks initiated to reduce inequality by providing the opportunity to bop segments to save, manage and invest their money. In this manner the financial inclusion isn't just a technical or business goal; it reflects the basic responsibility of banks.

Though discussed by Horonga(2024) that the public and private finance has also appeared as a powerful facilitator of financial inclusion, particularly for the users such as vegetable vendors and small street vendors etc., who often face barriers in accessing the basic financial services in a developing country like Zimbabwe, there were different results related with slow adoption and usage, cultural differences. Also there has been a dearth of information in context of developing economies that try to find out what makes use of mobile technology an essential instrument for financial inclusion (Asif et.al, 2023; Wang and Zhang, 2025).

Nevertheless, apart from technological and behavioral aspects, as per recognized perspective, the digital financial inclusion also has significant outcomes for accountability, transparency, and ethical governance in financial ecosystems. The m-banking improves financial transparency by enabling users to conduct, monitor, and record their financial transactions digitally, as it offers traceable records to promote ethical financial behaviours. By bridging the gap between ethical financial behaviour and use of technology, the introduction of the model of accounting accountability indicates that using technology may promote additional socioeconomic responsibility. Likewise, the governance and ethics may be maintained as accountability grows, promoting consistency, transparency, and trust in financial and organisational systems. Consequently, the growing popularity of mobile banking has led to more fundamental implications for digital banking transactions that have implications in ethics and governance.

By integrating Accounting Accountability & Governance & Ethics, this study extends beyond adoption intent to capture the ethical and governance implications of digital financial inclusion among BoP users. This extended approach improves financial inclusion theory and practice by offering a thorough knowledge of how digital financial behaviour can progress from individual- level technology adoption to more extensive structures of accountability and governance. These street food vendors and vegetable vendors etc. normally deal in cash, which is unrecorded by formal institutions. The m-banking converts their transactions into digital formats that further create digital records by facilitating enhanced monitoring, regulation, documentation, and responsibility. Hence, our study focuses not only on adoption but also on effects that the adoption of m-banking initiates.

As aligned with the objectives and identified gaps, the following research questions guide this study. Thus the holistic research has been conducted to answer the following research questions:

RQ1. How does self-efficacy and core UTAUT constructs influence mobile banking adoption among BoP users?

RQ2. In what ways does financial inclusion contribute to the adoption of mobile banking as a tool for transparent financial management?

RQ3. How does mobile banking adoption mediates the relationship between behavioral construct and accounting accountability?

RQ4. What is the role of accounting accountability in strengthening ethical governance and regulatory compliance in digital finance?

RQ5. How does integrating behavioral and accounting theories enhance the understanding of accountability and governance in m-banking adoption?

Paper Organization

The present study is organized as follows: Section 1 provides the background of study and lays the foundation of resources incorporating research questions. Section 2 explains the literature for development of hypotheses. Section 3 covers the research design and methods. This is followed by the presentation of results and discussion in Section 4. Further the implications are explained in Section 5 and the next Section 6 provides limitations and direction for future research.

Literature Review

Behavioural models like UTAUT have historically been employed in research on mobile banking among Bottom of the Pyramid (BoP) users in order to clarify acceptance (Venkatesh et al., 2003; Mensah and Khan, 2024). Subjective norms (SN) and attitude have a favourable impact on m-banking adoption, autonomy, and poverty alleviation, especially among emerging nations. Nevertheless as digital financial systems develop, researchers are realising how important accounting and governance theories are to

understanding how adoption results in ethical, open financial behaviour.

Primarily amongst the lowest part of the pyramid which was previously away from the financial systems, smartphone banking has emerged as an important driver in the growth of financial inclusion (Ozili, 2020). The m-banking services have transformed the method by which low- income people connect with the financial ecosystem by incorporating regulatory access towards protection. Accountability theory (Bovens, 2006) offers a framework for understanding how organizations and users engage in accountability and transparency during reporting. The accountability in digital finance has been proven by KYC compliance data, auditor reports, and traceable transaction records. In accordance with Legitimacy theory (Suchman, 1995), organizations and users adapt to social and legal standards in order to be accepted, while according to the Institutional theory (DiMaggio & Powell, 1983) complying with transparent procedures is influenced by normative (administrative), mimetic (social imitation), and coercive (regulative influences). Hence, both institutional theory and legitimacy theory supports extending traditional technology adoption frameworks to include accounting accountability and governance and ethical considerations.

The transparency, accountability, and confidence in digital transactions have been improved with the introduction of Know Your Customer (KYC) standards and digital recordkeeping (World Bank, 2025). According to research, incorporating KYC and anti-money laundering (AML) procedures with mobile platforms promotes regulatory and audit compliance while reducing illegal or unregistered cash transactions (Khera et al., 2021).The records of various transactions, generated through mobile platforms, provide transparent and accessible records that improve accounting accuracy and regulatory compliance (Virlan, 2023; Wolters Kluwer,

2024). Digital records have reduced human error, making real-time audits feasible, strengthened identification of fraud, and created regulatory and users' trust. In addition to strengthening the security of financial services, these improvements aid in the global push for moral financial practices and governance in the age of the internet (Arner et al., 2016).

Moreover, these innovations encourage both financial inclusion and supervision, enabling the lower income groups to engage securely with formal financial systems while maintaining integrity and accountability (Shaikh et al., 2020). Further, Mohammed (2025) and Ingale (2024) examined how m-banking can facilitate such groups by offering secure access to financial services and supporting the financial inclusion in the formal sector. Also, the innovative RegTech tools, including transaction monitoring, AI-powered compliance automation and digital ledger reporting, have significantly reduced the expenses related with compliance and further enhanced the accuracy of audits (Jeya Singh, 2023). Also through these RegTech, m-banking platforms can systematically capture, classify and reconcile the users' transactions, generating real-time data streams that enhance accounting accountability (Dabour, 2023). Nevertheless, several bottom of pyramid users lack the adequate awareness about the data protection, their privacy rights, or the impact of giving digital consent, making it essential to address ethical and privacy issues. Consequently, the ethical innovation, data transparency and ensuring fair access must be prioritize by the banks and other financial institutes to prevent exploitation of the lower income groups. Hence, creating user-friendly interfaces for individuals with low literacy and providing policy information in local languages are critical measures for promoting fair financial inclusion.

Research Gaps

Despite the popularity of m-banking potential to enhance financial inclusion is increasingly acknowledged, but there is a scarcity of research that combines behavioral and contextual factors within a unified framework to explain adoption among bottom of pyramid users. Additionally, few investigations have examined the impact of the m-banking adoption on broader organizational outcomes including accountability, governance and ethical financial conduct. The lower income segments such as green-grocers, street vendors etc. frequently functions beyond the traditional accounting and reporting systems. Therefore, the m-banking adoption offers insight into how digital finance can promote the inclusion of underprivileged segments into reliable and auditable financial networks, thereby encouraging formal financial inclusion, governance and accountability. The challenge lies in theoretically integrating behavioral motivators, rationality, and institutional ethics to explain how the m-banking adoption enhances ethical governance, financial accountability particularly within these communities.

Objectives of the Study

01. To investigate the impact of core UTAUT Drivers, self-efficacy and financial inclusion on mobile banking adoption, thereby facilitating users' participation in accountable and transparent financial systems.

02. To examine the mediating role of m-banking adoption in transforming behavioral and self-efficacy constructs into accounting accountability outcomes, reflecting responsible and traceable financial behavior.

03. To study the impact of accounting accountability on ethical governance, signifying how transparent financial practices promote integrity, trust, and regulatory compliance within digital financial systems.

04. To contribute to accounting theory by developing and validating an integrated behavioral and accounting framework that unites technology adoption, financial inclusion, and ethical governance to explain accountability in the context of m-banking.

Hypotheses Development

Core UTAUT Drivers

The integration of technology has always attracted the researchers worldwide to propose an innovative framework to explain m-banking.

Performance expectancy (PE): It is the primary element of the UTAUT model (Venkatesh et al. 2003). The PE is defined as a degree in which the use of technology offers perquisites to its users while performing certain functions (Venkatesh et al. 2012). Moreover, Oliveira et al. (2014) and Kim et al. (2022) found that PE significantly influenced users' behavioral intention to adopt m-banking.

H1a: Performance Expectancy positively influences mobile banking adoption among BoP users.

Effort expectancy (EE): According to Venkatesh et al. (2012), EE is another important construct of UTAUT model, that believes that use of technology in any field is easy and without efforts. Furthermore, users' BI to adopt new technology is influenced by their expectation of effort; there is a positive co-relation between adoption of digital banking services and EE amongst the users of Vietnam as examined by Nguyen et al. (2021).

H1b: Effort Expectancy positively influences mobile banking adoption among BoP users.

Social Influence (SI): It is related to subjective norms of TAM model. It is indicated as an extent to which the customer believes that his friends, relatives and fellow personnel also believe that they should use m-commerce, also SI behaves as an active construct that positively and significantly influence users' intention (Venkatesh et al. 2003). In developing countries, SI plays a decisive role in formation of trust towards m-banking (Malaquias and Hwand 2016).

H1c: Social Influence positively influences mobile banking adoption among BoP users

Facilitating conditions (FC): According to Venkatesh et al., 2003, facilitating conditions (FC) refers to "the degree where an individual considers that an infrastructure to provide a necessary support for the system." The FC, in case of m-banking, comprises of the access to smartphones, consistent internet connectivity, user-friendly banking apps, digital literacy, and institutional support such as bank helpdesks etc. It is argued that FC plays a critical role in technology adoption, particularly in lower income resources like the Bottom of the Pyramid, where infrastructure and technical support are often limited (Alalwan et al. 2017).

H1d: Facilitating Conditions positively influence mobile banking adoption among BoP users. Contextual driver

Financial Inclusion (FI): Financial inclusion means providing the customers with access to affordable financial services such as insurance, affordable credit facilities, savings etc. which are essential for their economic well-being (Olaoye et.al, 2025). The users can be assisted in managing their funds more effectively and securely by offering such services (Jena, 2025). The dearth of near-by financial institutions may delay access, causing the users to spend a significant amount of time and money in travelling, which is particularly expensive for those living in rural areas (Ideas for India, 2022). In addition, difficulty in documentation process and lengthy verification requirements make the task more difficult for those with limited education. The m-banking acts as a facilitator for financial inclusion by supporting these marginalized communities to participate in the formal financial ecosystem. It also helps people to save securely, borrow money when needed, and reduce their dependence on informal moneylenders (Donovan, 2023). M-banking in India is now seen as a key driver of financial inclusion, helping small vendors, farmers, and daily wage worker (Kumar, 2024).

H2: Financial Inclusion positively influences mobile banking adoption among BoP users. Behavioral driver

Self-Efficacy (SE): Self-efficacy is explained as a user's belief in his capability and the awareness to perform any task. It plays an introductory role in defining user's behavior in technology use (Bandura, 1997). In the UTAUT context, although EE reflects PEU, it is often designed by the user's SE (Compeau & Higgins, 1995). Also SE is important for underserved areas where educational and infrastructural problems may make it hard for the users to avail the technology (Raza et.al, 2019). This confidence moderates the psychological hurdles and increases enthusiasm to explore m-banking, even in semi-literate environments. Thus, integrating the SE into the UTAUT model provides greater understanding about how the underserved communities use digital patterns, in integration with traditional constructs like EE and PE (Shankar et.al, 2024). As proposed in H3a, self-efficacy positively influences mobile banking adoption among BoP users. H3b suggests that the core UTAUT constructs mediate this relationship, showing that the self-efficacy shapes perceptions of effort expectancy and performance expectancy. H3c further indicates that self-efficacy indirectly supports accounting accountability through m-banking adoption, showing that confidence in digital finance leads to more transparent and responsible financial behavior.

H3a. Self-Efficacy positively influences mobile banking adoption among BoP users.

H3b. Core UTAUT constructs mediates the relationship between self-efficacy and mobile banking adoption

H3c Self-Efficacy indirectly strengthens Accounting Accountability through mobile banking adoption.

Accounting Accountability (AA)

Accounting accountability is the responsibility and transparency shown by the organizations while keeping track of financial transactions. It denotes the ethical discipline that maintains accurate, reliable financial records that can be generated, examined, and corrected as needed. The m-banking does more than making the money matters and transactions more convenient. It facilitates building honesty and better management in financial activities (Shaikh et al., 2020; World Bank, 2025). Digital transactions leave permanent pathways that improvise auditing, ensure compliance, and reduce

informal or unrecorded financial flows (Chen et al., 2024).

In accordance with Accountability Theory (Roberts, 1991) and Legitimacy Theory (Suchman, 1995), accounting accountability implies that financial decisions are clear, logical, and acceptable with ethical standards. It includes individual financial behaviour in addition to organisational analysis, particularly for BoP users who use m-banking as a professional means of keeping and handling the funds they have. The adoption of mobile banking has a significant impact on accounting accountability, which is consistent with hypothesis (H5). This suggests that automated record-keeping and digital transactions improve financial traceability and reduce mistakes or manipulations.

Furthermore, (H3c) shows how self-efficacy indirectly enhances accounting accountability through the adoption of m-banking, indicating that users' confidence in employing digital technology translates into more transparent management and reporting.

H5: Mobile banking adoption positively and significantly influences Accounting Accountability.

2.5 Governance and Ethics (GE): The term governance and ethics refers to developing moral, regulatory, and established standards that govern ethical financial conduct and ensure justice and transparency in digital systems of finance. It is the result of effective accounting accountability, promoting trust, harmony, and credibility throughout financial organizations by reliable documentation. It is suggested that when users and institutions maintain transparent financial records through m-banking, they contribute towards a culture of reliable and controlled agreement. This relationship aligns with Legitimacy Theory and Institutional Theory, which highlights those consistent and accountable practices, improves organizational ethics and trust (Adams, 2020; Suchman, 1995).

H6: Accounting Accountability positively and significantly influences Governance and Ethics.

Research Design and Methodology

The core UTAUT drivers along with behavioral and contextual drivers were considered. The PLS-SEM is an approach that contributes towards causal analysis in behavioral research. It has the adequacy to figure out the p-value with the help of bootstrapping technology. The PLS measure has gained utmost priority and is incorporated in technology acceptance studies (Giao et.al, 2020). The population of this research consists of North Indian underserved customers who avail mobile banking services. In the North India, five states were covered which are Punjab, Haryana, Chandigarh, and Delhi NCR. The data were collected from 108 respondents through snow ball sampling survey. The snow ball sampling technique is a non-probability sampling technique which is practiced where the population is not described and the target participants are difficult to trace (Parker 2019).

The demographic profile of underserved segments of selected regions of Northern India, reveals that the majority were male (84.40%), while female representation was limited to 15.59% only. With regard to age distribution, 26.60% of respondents belonged to the age group from 18–24, 24.77% were between 25–34 years, 40.36% were in the 35–44 category, and 8.25% were above 44 years. Regarding banking behavior, 46.78% reported visiting a bank once a month, 33.94% visited two to three times, while 19.26% made four to five visits monthly. With respect to mobile banking usage, 16.51% used the service one to seven times in a day and about 49.54% of the respondents used mobile banking 11–15 times per day.

Results and Discussion

The results reveal that self-efficacy significantly influences the core UTAUT drivers, by strengthening users' confidence in mobile banking. Financial inclusion, as a contextual driver, enhances the explanatory power of UTAUT variables, confirming its significance in shaping intentions to adopt m-banking amongst underprivileged segments.

Table 1 comprises of the reliability and validity of variables, further discriminant validity is tested using Fornell-Larcker criterion and Heterotrait-Monotrait Ratio. The discriminant validity is calculated by the difference between AVE and the square root of correlation with the other constructs. It displays Cronbach's Alpha, Composite Relaibility, Average Variance Extracted (AVE) and Rho-A. The internal consistency of the analysis is within an acceptable range.The Cronbach's alpha is ≥0.70. The construction of the relaibility of the scale and its validity is an important part of the analysis as it acts as a 'gatekeeper' to ensure that the scale which has been employed for the research is both explanatory and reliable. As recommended by Fornell and Larcker (1981), PLS considers two criteria to find out the convergent validity, one is Cronbach's alpha and composite reliability while another one is Average Variance Extracted (AVE). The study employs Cronbach's Alpha coefficient to trail the internal consistency of the scale according to Pallant (2001) must be above 0.7 which is a valid measurement. Furthermore, Tabachnick and Fidell (2007) also proposed that Cronbach's alpha must be atleast 0.55 for the measurement to be reliable. Table 1 also exhibits the results for Composite Reliability (CR) which should be greater than 0.7 as suggested by Nunnally (1978) and Average Variance Explained (AVE) which should exceed 0.5 (Fornell and Larcker, 1981).

Table 2 shows discriminant validity.

The discriminant validity proposed by Fornell and Larcker (1981) is evaluated by comparing the amount of the variance measured by the construct (aveϕj) and the shared variance with other constructs (ϕij). As a result, the square root of the AVE for each construct should be higher than the squared correlation involving the constructs. The square root of AVE in the present model is significantly greater than the correlation between the two constructs. It shows the model's

discriminant validity, which implies that these variables are unrelated.

The Heterotrait-Monotrait Ratio (HTMT) ratio as suggested by Henseler et.al (2015) is less than 0.85. Thus, this benchmark is satisfied in our study. These results confirm that each factor is empirically distinct, and that mobile banking adoption serves as a key link between technology and accounting accountability, governance and ethics thereby supporting the model's conceptual soundness.

Table 3 reports variance inflation factor (VIF), both inner and outer. The presence of multicollinearity between exogenous variables is measured by these inner and outer values. Since the value of the VIF number is higher than 10, the model exhibits a significant multicollinearity issue (Kennedy, 1992; Hair et al., 1995). The acceptable thresholds for VIFs are 5 or 10 (Craney and Surles 2002). The presence of multicollinearity in the model is indicated by a VIF value more than five, while a number greater than ten denotes a major multicollinearity issue in inner as well as outer model.

Table 1: Calculation of Internal reliability

Factors	Factor Loadings	Cronbach's Alpha	Rho-A	Composite Reliability	Average Variance Extracted
Mobile Banking Adoption	0.781				
	0.826	0.924	0.931	0.943	0.687
	0.838				
	0.841				
	0.849				
	0.823				
Financial Inclusion	0.821				
	0.832	0.889	0.902	0.924	0.701
	0.841				
	0.849				
	0.826				
Self-efficacy	0.812				
	0.826	0.884	0.895	0.918	0.682
	0.845				
	0.834				
	0.816				
Governance and Ethics	0.783				
	0.804				
	0.816	0.841	0.854	0.895	0.604
	0.791				
	0.866				
Core UTAUT Drivers	0.854				
	0.833	0.873	0.879	0.920	0.723
	0.843				
	0.867				
Accounting Accountabilit y	0.844	0.870	0.882	0.921	0.729
	0.833				
	0.843				
	0.867				

Source: Authors' Compilation via PLS-SEM

Factors ⟶ ↓	Self-Efficacy	Financial Inclusion	Governance and Ethics	Core UTAUT Drivers	Mobile banking adoption	Accounting Accountability
Self-Efficacy	0.826					
Financial Inclusion	0.601	0.838				
Governance and Ethics	0.544	0.592	0.777			
Core UTAUT Drivers	0.613	0.625	0.561	0.850		
Mobile banking adoption	0.685	0.702	0.523	0.736	0.829	
Accounting Accountability	0.566	0.591	0.511	0.641	0.692	0.854

Table 2: Discriminant Validity using Fornell-Larcker Criterion
Source: Authors' Compilation via PLS-SEM

Table 3: Outer and Inner Variance Inflation Factor

Outer Factors	VIF	Outer Factors	VIF
Mobile Banking Adoption		**Self-Efficacy**	
MA1	2.04	SE1	1.95
MA3	1.92	SE2	2.01
MA5	2.10	SE3	1.98
MA6	1.87	SE4	1.89
MA8	1.93	SE5	1.92
Financial Inclusion		**Accounting Accountability**	
FI1	1.76	AA1	1.76
FI2	1.83	AA2	1.78
FI3	1.80	AA3	1.87
Governance and Ethics		**Core UTAUT**	
GE1	1.82	Performance Expectancy	2.154
GE2	1.79	Effort Expectancy	2.206
GE3	1.75	Social Influence	1.483

Inner VIF

Self-Efficacy → Core UTAUT Drivers 1.912
Financial Inclusion → Mobile Banking Adoption 2.178
Core UTAUT Drivers → Mobile Banking Adoption 2.914
Self-Efficacy → Mobile Banking Adoption 1.893
Mobile Banking Adoption → Accounting Accountability 1.534
Accounting Accountability → Governance & Ethics 1.437

Source: Authors' Compilation via PLS-SEM

Table 4 reports the total effect of the model with path coefficients, t-statistics standard deviation and p-value. The variables namely FI, Core UTAUT constructs show the direct positive significant impact on m-banking adoption of marginalized users. All these variables are found to be significant at 1% level (P value > 0.01 and t statistics > 2.58). It means the performance and effort expectancy, facilitating conditions and social influence of m-banking as perceived by its users; build a positive attitude towards m-banking adoption. Similarly financial inclusion also shows positive association with adoption towards the m-banking showing that a good access to affordable and suitable financial services boosts willingness of users to engage and implement digital banking platforms.

The self-efficacy directly show the positive significant impact towards m-banking adoption (P value > 0.05 and t-statistics < 1.96). It shows the direct positive significant impact on core UTAUT constructs at 1% level (P value < 0.01 and t-statistics > 2.58). The percentage of variation explained by the predictors is shown by the coefficient of determination (R^2).

According to Hair et al., 2021, all the factors depict moderate to substantial explanatory power Additionally,

the effect size (f^2) including all key relationships especially: Self-Efficacy → UTAUT; Core UTAUT → MA, MA → AA, demonstrates medium to large effects, confirming theoretical robustness. Predictive Relevance (Q^2) shows all values are greater than 0, validating the model's predictive strength and reliability.

Table 4: Path Coefficients of Model (Mean, STDEV, t-values, p-values)

Hypotheses	Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	p values
H1	Core UTAUT drivers M-Banking Adoption	0.532	0.528	0.086	6.186	0.000*
H2	Financial Inclusion M-Banking Adoption	0.287	0.290	0.071	4.042	0.000*
H3a	Self-Efficacy M-banking adoption	0.163	0.166	0.066	2.470	0.014*
H3b	Self-Efficacy Core UTAUT drivers M-Banking Adoption	0.438	0.435	0.078	5.615	0.000*
H3c	Self-Efficacy M- Banking Adoption Accounting Accountability	0.854	0.855	0.019	44.257	0.000*
H4	M-Banking Adoption Accounting Accountability	0.514	0.511	0.061	8.426	0.000*
H5	Accounting Accountability	0.329	0.332	0.083	3.964	0.000*
		R Square		Adjusted R Square		
	Mobile Banking Adoption	0.757		0.748		
	Core UTAUT Drivers	0.703		0.695		
	Accounting Accountability	0.652		0.649		
	Governance and Ethics	0.515		0.509		

*P value<0.01Source: Authors Calculations

The above Table 4 also demonstrates an integrated structural model with significant description across behavioral, inclusion, and governance dimensions. Specifically, m-banking adoption (R^2=0.757) exhibits the strongest explained variance, followed by Core UTAUT Drivers (R^2=0.703) and accounting accountability (R^2=0.652). Additionally, the ethical governance (R^2= 0.515) demonstrates a substantial degree of variance explained by accounting accountability, indicating that ethical governance results are strongly influenced by accountable financial procedures. Further these results show that the model effectively integrates the psychological, institutional and behavioural theories. Moreover, it also shows that how the adoption of digital finance functions as a behavioral system that encourages ethical responsibility, accounting transparency, and good governance, especially among the vegetables and other street vendors.

The core UTAUT Drivers (β =0.532, p < 0.001) stands out to be the most significant predictor of mobile banking adoption, thereby validating the behavioral foundation of user acceptance within the extended UTAUT framework. Financial Inclusion (β = 0.287, p<0.001) and Self-Efficacy (β=0.163, p<0.05) both illustrate significant relationships, reflecting that access and confidence improves the adoption rate among BoP users. The analysis depicts the impact of self-efficacy on adoption of m- banking through the core UTAUT factors (β = 0.438). This shows that users' confidence in using technology encourages adoption because it shapes how easy and useful they believe mobile banking to be.

The link between m-banking adoption and accounting accountability (β = 0.514) suggests that when the users actively use these services, their financial activities become more organized and transparent. Likewise, the relationship between Accounting Accountability and Governance & Ethics (β = 0.329) indicates that stronger accountability practices support better ethical and governance outcomes.

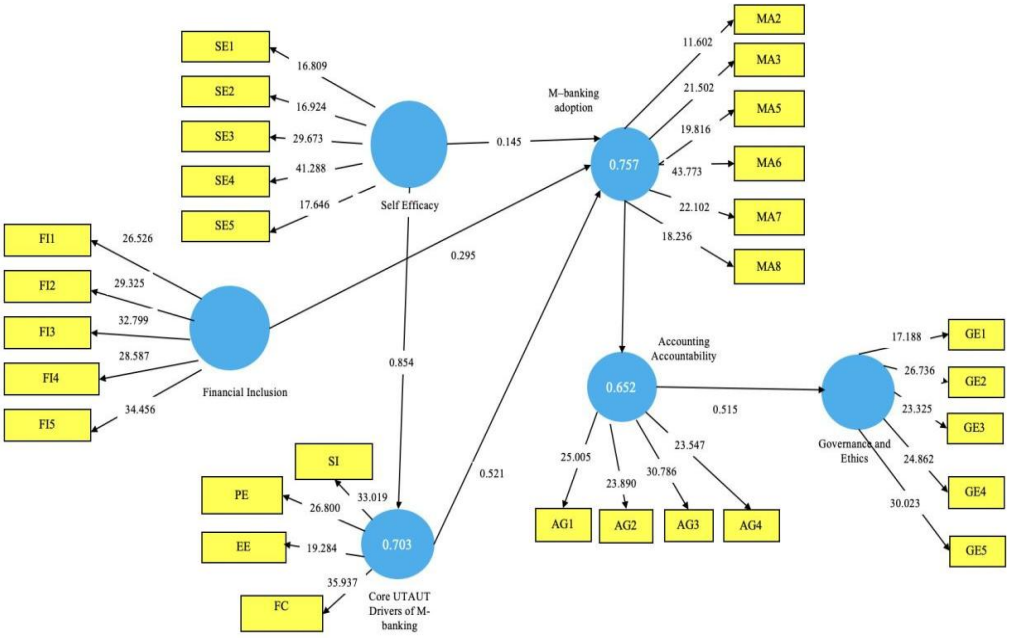

Figure 1: T-Statistic Model

Figure 1 depicts the results of bootstrapping. It shows that t-statistics of outer model and inner model. In the case of inner model (using governance and ethics as a dependent variable) the associated t-statistics of factors are greater than 2.58 which are better than critical value at 1% level of significance. Similarly, the associated t-statistics of the constructs used as mediator is also greater than 2.58. Moreover, the t- statistics of sub variables of five different latent variables are also greater than 2.58 respectively.

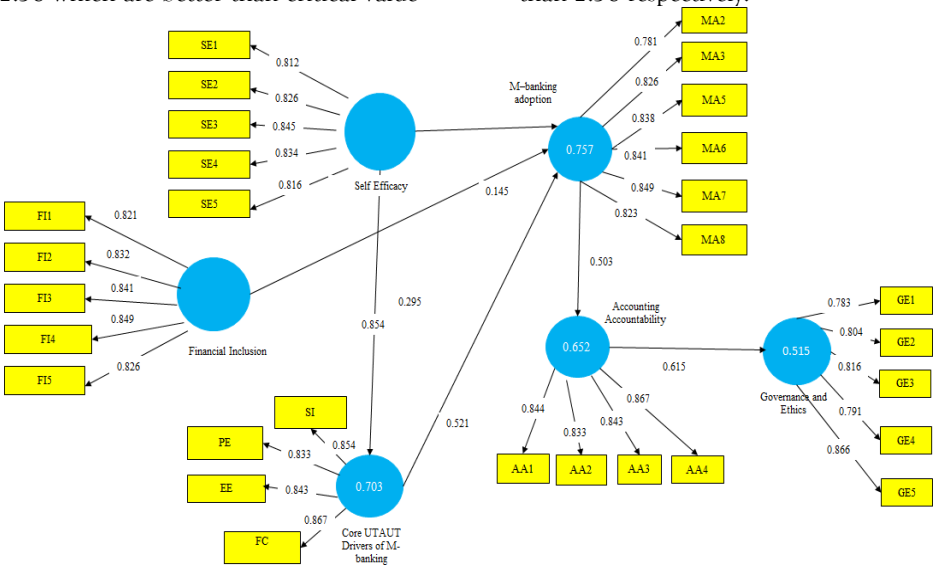

Figure 2: PLS-SEM Model

The figure 2 measures the indicators attached to each construct, showing how well the variables represent their respective latent variables. Overall, the figure provides a clear description of how the factors interact within the structural framework by highlighting the paths supported by the analysis.

The outcomes of this study offer insightful information about how mobile banking is used by these underprivileged segments. The findings support the idea that personal confidence plays a significant role in determining ease of use and usefulness by supporting that self-efficacy strongly influences the adoption of technology (Bandura, 1997; Venkatesh et al., 2003). This aligns with prior studies that highlight how higher levels of self-efficacy improve users' ability to overcome technological challenges and facilitate adoption (Dwivedi et al., 2019).

The validity, reliability and other fit indices were within the well-established range suggested by Hair et al. (2010). There is a positive and significant influence of PU on users' adoption towards m- banking. The influence of friends and family positively and strongly affect the user's attitude towards and intention to adopt m-banking service, also there is a positive and significant impact of SN on m- banking user's attitude (Liang 2016;

Barki and Hartwich 1994).

In the economically challenged communities, where highly risky and volatile environment exists, the trust on social signals becomes difficult for the people to try out new technologies. Moreover, FI served as a contextual driver, emphasizing the analytical power of UTAUT constructs. This indicates that access to inclusive financial offerings strengthen the users' motivation and intention to engage with m-banking (Demirgic-Kunt et al., 2022). Such outcomes echo earlier studies that argue that inclusive financial ecosystems are necessary to sustain digital financial adoption, particularly among marginalized groups (Ozili, 2020; Arora & Chhabra, 2023).

Implications

This study extends Accounting Accountability Theory in examining m-banking behaviours by integrating it with technology adoption models, financial inclusion and self-efficacy among BoP users. Accountability theory has emphasized the importance of transparent reporting and accountability of financial systems. By connecting this with digital self-efficacy and governance ethics, the study expands its focus to include technical accountability, where digital financial systems promote transparent and responsible financial actions. This study emphasizes how m-banking systems can facilitate accounting transparency for low-income groups. The automated record keeping of digital transactions improves traceability and reporting, which is in line with RegTech and agreement frameworks (such KYC/AML).

Financial institution may use these outcomes to create an inclusive, secure, and auditable financial system and need to create mobile banking applications that facilitate the record keeping and classifications of these BoP groupings' recording, classification, and keep an eye on their financial inputs and outflows.

By adhering to the basic accounting, receipt development, and analytical features available in mobile applications, financial institutions might increase user engagement and encourage transparent and verifiable financial behaviour. The results additionally encourage the development of policy-driven digital audit trails and real-time monitoring dashboards, which improve financial governance in the microfinance and rural banking sectors. This study shows the significance of transparent, unbiased and trustworthy accounting records and digital transactions. This allows BoP users to engage more in the financial system and helps to create trust among them. Adoption of m-banking should be considered as a tool for tax integration, compliance, and auditing transparency by the government In emerging nations like India, encouraging collaborations between fintech firms and bank networks helps to conceptualize financial flows and enhance revenue systems.

Conclusion

This study modified the UTAUT model to examine post-adoption outcomes among BoP segments and tested the causes of m-banking adoption. The findings indicate that the adoption of mobile banking by lower-income users is significantly impacted by PE, EE, SI, and FC. The investigation emphasizes the relationship between digital finance, accounting, and regulatory frameworks in addition to technological adoption. Individual behavioural drivers and institutional financial responsibility are connected through the integration of UTAUT concepts and self-efficacy with accountability theory. As a result, digital adoption promotes ethical financial practices, improves transaction accountability, and helps comply with laws in addition to enhancing financial inclusion.

Statements of Declaration

Authors' Contribution

The first author conceived and designed the research, conducted data collection and analysis, drafted the manuscript and interpreted the data. The second author significantly contributed to the research design, provided intellectual input and assisted in data interpretation. The third author along with providing intellectual inputs, conducted literature reviews and played a key role in revision. All the authors approved for the final version of manuscript for submission.

Competing Interest

The authors declare no competing interests. All the authors have approved the paper and agree with its submission.

Ethical Approval

The procedures used in this study adhere to the principles of Declaration of Helsinki. The corresponding author obtained permission to conduct the study. The research was carried out in accordance with the Helsinki Declaration guidelines and has been reviewed by the Ethical Committee of the institute. Informed consents were obtained from participants prior to the survey to ensure respondents had a good understanding of the study objectives.

Data availability

The datasets generated during the current study are not publicly available to preserve the privacy of participants but are available from the corresponding author on reasonable request.

Compliance with ethics guidelines

This paper does not contain any studies with human or animal subjects performed by any of the authors

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