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ENHANCING FININCIAL INCLUSION THROUGH MOBILE BANKING IN AFRICA: THE ROLE OF TRUST AND CUSTOMER EMPOWERMENT

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Abstract

This research explores mechanisms by which the use of mobile banking applications (M-Banking) contributes to financial inclusion in emerging economies. Specifically, we examine the mediating role of trust and the moderating effect of perceived customer empowerment. The study is based on a sample of 721 responses collected in Cameroon. Data analysis using the structural equation method (PLS-SEM) was used to test the hypothesis. The results highlight the positive influence of M-Banking use on financial inclusion along its four dimensions: access, quality, well-being and use. In addition, trust has a significant mediating effect on the relationship between M-Banking use and financial inclusion in all its dimensions. On the other hand, perceived empowerment - measured by autonomy, competence and social belonging - moderates the relationship between M-Banking use and financial inclusion, the effect being weaker among customers with low levels of empowerment. This research highlights levers for accelerating the impact of M-Banking use on financial inclusion, by integrating relational marketing perspectives and self-determination theory.

Keys words: Mobile Banking, Financial inclusion, Trust, Customer empowerment

1. Introduction

Financial technologies (Fintech) have gained in popularity in several African countries in Sub-Saharan Africa (SSA), and has contributed significantly to the growth in financial inclusion rates (Klapper et al., 2025). According to statistics, SSA has seen significant growth in financial inclusion over the last decade, rising from 34% in 2014 to 63% in 2024 (Klapper et al., 2025). This growth has been largely driven by the adoption of Mobile Money, which remains the most common payment method in Africa (Klapper et al., 2025). Mobile Money is a fintech service that uses a cell phone as a means of payment, money transfers and savings (Madise, 2019). These statistics support the findings of numerous research studies that rank Mobile Money as a key lever for financial inclusion (Klapper et al., 2025; Khera et al., 2022; Okello and Munene, 2021; Evans, 2018). Since banks play an essential role as the driving force behind financial inclusion, mobile banking (M-Banking) is emerging as an innovative lever to this end, also to win and retain customers (Shaikh and Karjaluoto, 2015). M-Banking involves the use of mobile devices for banking transactions via a wireless connection (Afshan & Sharif, 2016). Users can access various banking services, including checking account balances, transfers and bill payments (Owusu et al., 2021; Zhou, 2012). Mobile Money differs from M-Banking in that it is not necessarily linked to a bank account, nor does it require the use of the Internet for transactions.

Unlike Mobile Money, the contribution of M-Banking to financial inclusion remains weak and unevenly demonstrated in SSA (Malaquias and Hwang, 2019). A considerable part of the literature focuses on Mobile Money (Carè et al., 2024; Hornuf et al., 2025; Osabutey and Jackson, 2024; Okello, 2018). This situation deserves the attention of researchers and banks on the ability of M-Banking to improve financial inclusion. However, while previous studies provide valuable insights into the potential of Fintech in financial inclusion, they do not always take into account the specific constraints inherent in the use of different technologies. According to de Luna et al. (2018), the differences between Fintech innovations need to be taken into account in technology choices. Such a global perspective incorporates the context of uncertainty and risks associated with online transactions (Pavlou, 2003, Gefen, 2000) that surround the use of M-Banking. It also suggests that trust should be seen as a lever for mitigating these risks (Pavlou, 2003, Gefen, 2000). Similarly, Deci and Ryan's Self-Determination Theory (SDT) (2000) offers new perspectives for exploring additional motivations for M-Banking use and financial inclusion. The perceived empowerment of customers could contribute to the development of a deep bond with the technology, thus facilitating access to and long-term use of M-Banking (Spreitzer, 1995). These perspectives allow us to better understand the conditions under which the use of M-Banking stimulates financial inclusion. To fill the main gaps identified in the research, the present study examines the mechanisms by which the use of M-Banking directly and/or indirectly affects financial inclusion. In the first stage, we present the conceptual framework, then formulate the research hypotheses and propose a conceptual model. In the second stage, the methodology adopted, involving an empirical study based on 721 respondents, is detailed. Following the testing of the research hypotheses, the results of this work are presented in a third step. Finally, the theoretical and practical implications of this research are analyzed.

2. Research background and hypotheses

In this study, we draw on the theory of transaction costs (Williamson 1985) to analyze how M-Banking can reduce transaction costs, thereby promoting financial inclusion. This theory also highlights how trust acts as a key to mitigating risks in contexts of uncertainty and asymmetric information, where individuals are reluctant to commit. We also mobilize the self-determination theory formulated by Deci and Ryan (2000) to analyze the motivational

processes that lead to the use of M-Banking and contribute to financial inclusion. These theoretical frameworks seem to us relevant for analyzing the mechanisms around M-Banking use and financial inclusion in SSA contexts such as Cameroon.

2.1. M-Banking and financial inclusion: Transaction Costs Theory perspective

Financial inclusion is about increasing the number of individuals with access to formal financial services, primarily through bank accounts (Ozili, 2021; Bruhn & Love, 2014). The positive effects of M-Banking on financial inclusion are varied and reflected at several levels. Firstly, due to distances, the quality of the transport network and long queues in front of bank counters, the use of M-Banking can improve access to basic financial services by minimizing the costs associated with their provision (Demirgüç-Kunt et al. 2018). The ability to access and carry out transactions via one's account when required is an additional reason for using M-Banking. Secondly, the use of M-Banking helps to reduce the operating costs of the banking network. This reduction in costs will have an impact on the poorer sections of the population in both urban and rural areas (Osabutey & Jackson, 2024). Thirdly, M-Banking offers a convenient, user-friendly, secure platform for basic financial transactions (Afshan & Sharif, 2016; Baptista & Oliveira, 2016; Laukkanen, 2016). The quality of platforms can persuade the undecided, and lead to greater financial inclusion. Based on these developments, we formulate the following hypotheses:

H1: The use of M-Banking positively influences financial inclusion -in terms of (H1a) Access, (H1b) Quality, (H1c) Well-being- (H1d) Usage

2.2 Trust as mediation between M-Banking usage and financial inclusion

The fundamental principle of the relationship between M-Banking and financial inclusion is based on the assumption that the large mass of the population with a cell phone is likely to be able to use M-Banking with affordable Internet connectivity (World Bank, 2023). However, the online channel through which M-Banking transactions take place often creates uncertainty for consumers (Pavlou, 2003). Indeed, the open, global nature of the Internet facilitates undesirable types of opportunistic behavior, to which online customers are often exposed (Stewart et al., 2002). To this end, reliable, secure and easy-to-access M-banking applications reduce transaction costs, boost customer confidence and promote financial inclusion in terms of access, quality, well-being and usage (Zhou, 2012). The use of M-Banking relies on trust, an essential and often inconspicuous lever acting on transaction costs (Pavlou, 2003; Gefen et al., 2003). Pavlou (2003) argues that trust is perhaps the most important element in this type of transaction. Trust helps to reduce information asymmetry and reinforce a sense of security, a sine qua non for promoting acceptance of M-Banking in contexts of mistrust of online transactions (Pavlou, 2003). Trust reduces the uncertainty associated with the online retailer's actions, giving consumers a sense of control over their online transactions. These analyses suggest that trust mediates the relationship between M-banking use and financial inclusion. In conclusion, we anticipate the following hypotheses:

H2-H3: The use of M-banking positively influences trust, which in turn positively influences financial inclusion- in terms of (H3a): Access, (H3b:) Quality, (H3c): Well-being-(H3d):Usage.

H5: Customer trust mediates the relationship between M-banking usage and financial inclusion-in terms of (H5a): Access, (H5b:) Quality, (H5c): Well-being- (H5d): Usage.

2.3 Empowerment as moderator between M-banking usage and financial inclusion

According to the SDT (Deci & Ryan, 2000), three fundamental psychological needs must be met to foster individual motivation: competence, autonomy and a sense of social belonging. Customers' perceived empowerment constitutes a deeper connection with the company, creating a perception of power, defined as an individual's perceived asymmetrical ability to

influence a company's actions or outcomes (Spreitzer, 1995). In this sense, M-Banking offers consumers options to increase their decision-making autonomy. Customers are free to carry out transactions at the time and place of their choice (Li, 2016; Zhang et al., 2018). An integrated communication mechanism enables consumers to obtain consistent and complementary information from their applications, helping to reduce uncertainty and confusion (Broniarczyk and Griffin, 2014). This interaction also increases the bank's responsiveness to consumer needs, which increases credibility, a sense of mastery and competence, and subsequently the level of financial inclusion. We therefore postulate that the perceived empowerment of Mobile Banking users develops more when customers feel empowered, i.e. when they have a sense of control over the consumption process (Van, Fred, and Pruyn, 1998). M-Banking transforms the customer's posture from receiver to initiator in his relationship with the bank. The customer becomes a player, capable of co-constructing or modifying the offer via digital interfaces: access to historical data, account management, choice of products, opinions on functionalities. Customers feel valued and engaged in the relationship, and are more autonomous with less reliance on bank branches or advisors. Consequently, customers' perceived empowerment could moderate the relationship between M-Banking use and financial inclusion. On the basis of these theoretical contributions, we put forward the following hypothesis:

H4(a-l): Perceived empowerment-in terms of consumers' Autonomy, Competence, Social Belonging-moderates the relationship between M-Banking use and financial inclusion-in terms of Access, Quality, Well-being, Usage-so that the relationship will be weaker when customers' perceived empowerment is low.

Research model in appendix

3. Methodology

3.1. Data collection

Data were collected using a questionnaire tested on a sample of 50 individuals. The questionnaire was administered face-to-face by trained interviewers. Respondents were selected randomly, by interviewing them as they left the bank, their place of work or in their homes, to ensure that the sample was representative. To diversify the quality of respondents, the survey was carried out over an entire month in several of Cameroon's urban centers. The collection process resulted in a valid sample of 721 respondents, diversified in terms of socio-demographic profile (see Table 1in appendix). Analysis of usage patterns shows a high level of familiarity with banking applications. Table 1 below shows the characteristics of the sample.

3.2. Measures

Instruments for measuring constructs drawn from previous research were used, taking into account the definitions retained for each concept (Moon and Kim, 2001; Zhou, 2013; Gefen et al., 2003; Jarvenpaa et al., 2000; Spreitzer, 1995; Li, 2016; Auh et al.,2019; Gibson, 1991; Ramani and Kumar, 2008; Li, 2016; Demirguc-Kunt et al.,2018; Okello Candiya Bongomin et al., 2016; 2018). These variables were validated in our study context (Rossiter, 2002), with some items modified to suit the research objective, in line with the results of the qualitative study. The exploratory qualitative study was carried out with 24 consumers and 8 bank managers, and helped refine the variable measurement scales.

4. Results and analysis

4.1 Measurement model assessment

By following the guidelines proposed by Hair et al. (2019) for reporting the reflective measurement and confirmatory model, Table 1 presents the assessment of the measurement model. The results confirm the reliability and validity of the constructs used in this study. This evaluation demonstrates strong psychometric properties across all constructs, confirming the reliability and validity of the instrument used in this study. See table 2 in appendix.

4.2 Structural model assessment

The results presented in Table 3 (See appendix) demonstrate the model's capacity to explain and predict key endogenous constructs within the PLS-SEM framework (Sarstedt et al., 2022). The model's overall fit was assessed using the Standardized Root Mean Square Residual (SRMR) and the Normed Fit Index (NFI), as shown in Table 4 (in appendix). The SRMR value of 0.051 falls well below the recommended threshold of 0.08, indicating a good fit between the hypothesized model and the observed data (Henseler et al., 2014). Additionally, the NFI value of 0.819 suggests an acceptable level of model fit, as values above 0.70 are generally considered indicative of a satisfactory model (Bentler & Bonett, 1980). These results collectively support the adequacy of the model's structural configuration and its empirical relevance in explaining the observed relationships to determine the financial inclusion. Table 5 (see appendix) presents the effect sizes (f^2) and multicollinearity diagnostics (VIF) for the exogenous constructs in the structural model.

As depicted in table 6 (see appendix), the evaluation of the structural model using PLS-SEM revealed strong empirical support for most of the hypothesized relationships. First, all direct effects from M-banking usage to Trust, Access, Quality, Welfare, and Usage (H1a–H1d and H2) are statistically significant ($p < 0.001$), highlighting the central role of M-banking in enhancing these key dimensions of financial inclusion. Additionally, Trust significantly influences all four dimensions (H3a–H3d), confirming its mediating importance. The significant indirect effects via Trust (H5a–H5d) further confirm its mediating role, particularly in amplifying the impact of M-banking usage on Quality, Welfare, and Access. Regarding moderation, Autonomy significantly moderates three relationships (H4b–H4d), suggesting that users' sense of Autonomy shapes how M-banking usage translates into Quality, Usage, and Welfare, though not Access. Competence moderates only the M-banking usage–usage relationship (H4g), while Relatedness only moderates the relationship with quality (H4j), with other moderation paths being non-significant. Overall, the model demonstrates robust support for the influence of M-banking usage and trust, while autonomy emerges as a more consistent moderator than competence or relatedness.

5. Discussion and implications

The aim of this study is to investigate the mechanisms structuring the direct and indirect relationships between the use of M-Banking and financial inclusion, specifically in Cameroon. On the one hand, by mobilizing transaction cost theory (Williamson, 1985), it highlights various mediating effects of trust on the relationships studied. On the other hand, through the integration of SDT (Deci & Ryan, 2000), this work establishes a significant moderation of the dimensions of perceived customer empowerment on the relationships studied. These two theories are particularly relevant in this research, as they open up new perspectives to enrich existing approaches in M-Banking and financial inclusion research. The results obtained suggest a number of theoretical and practical implications.

This work shows how the use of M-Banking affects financial inclusion in its various modalities. Based on the theory of transaction costs (Williamson, 1985), it establishes the different mechanisms by which the use of M-Banking operates on financial inclusion. The results obtained are in line with previous work highlighting the importance of M-Banking as an innovative lever for financial inclusion (World Bank, 2023; Shen et al., 2020; Aker et al.,

2016; Kishore & Sequeira, 2016). Complementing previous studies that adopt a reductionist approach (Evans., 2018), this work apprehends financial inclusion holistically and provides nuanced information of the effects of M-Banking on the different dimensions of financial inclusion. Thus, the access dimension seems most impacted (β=0.354) then well-being (β=0.277), then quality (β=0.233). Usage (β=0.199) appears to be the dimension least impacted by the use of M-Banking. These findings reaffirm the importance of a holistic approach that captures the relative performance of exogenous variables in predicting dimensions of financial inclusion. The significant indirect effects of trust confirm its mediating role, notably by amplifying the impact of M-Banking use on the dimensions of financial inclusion: usage, quality, well-being and access. This result further reaffirms the importance of trust capital in mitigating the risks generated by online transactions (Pavlou, 2003, Gefen et al., 2003). In other words, the Internet channel is indeed a structuring factor influencing M-Banking transactions in developing countries. This research therefore provides a new understanding of transaction cost theory (Williamson, 1985), presenting trust as a protection for consumers against the risk of opportunistic behavior (Williamson, 1985). Other specific variables, such as perceived customer empowerment, can significantly modify the intensity of direct relationships between M-Banking and the dimensions of financial inclusion. We note that users' perception of autonomy shapes the way in which M-Banking use affects the quality, usage and well-being dimensions of financial inclusion. The competence dimension moderates the way in which M-Banking use affects its use (H5g), while social belonging moderates the intensity of the effect of M-Banking use on the quality dimension (H5j). These results are in line with the work of Deci and Ryan (2000), who associate autonomy with increased intrinsic motivation, satisfaction and well-being. The feeling of competence reinforces the regular and varied use of M-Banking for various services.

This work comprises three main theoretical contributions. The first contribution relates to the integrative framework presented, which includes a mediator (trust) and a moderator (perceived empowerment), to explain the mechanisms that structure the relationship between M-Banking use and financial inclusion. The second contribution of this study is a reading that encourages us to consider M-banking as a tool capable of reducing transaction costs. Trust appears here as an informal governance mechanism that provides an essential complement to transaction cost theory. Thirdly, the introduction of SDT makes it possible to examine the psychological determinants of M-banking use, particularly with regard to the satisfaction of autonomy, competence and social relationship needs. By demonstrating the importance of trust and the perceived empowerment of customers as mediators and moderators, this research suggests the importance of integrating the customer as a dynamic actor in the process, as interactions at product touchpoints contribute to the enhancement of the offer (Morgan and Hunt, 1994; Vargo and Lusch, 2008).

From a managerial point of view, the results of this work suggest concrete implications for the players involved in economic policies and bank strategies. Firstly, even if M-Banking emerges as a preferred choice, it remains a niche product (Sharma and Sharma, 2019), and in an early stage of the adoption cycle (de Luna et al., 2018). Banks need to promote strategies focused on reducing costs and consolidating trust among modest-income workers who own small businesses in urban or rural areas. Secondly, to consolidate trust and reinforce customers' sense of autonomy through a seamless experience at all points of contact and interaction with M-Banking applications (secure applications, protected data, reputation of financial institutions). Integrate simple, rapid feedback, complaints and dispute resolution mechanisms to consolidate a relationship of trust with users.

The main limitation of this study lies in the fact that it was conducted in a specific African context and for a particular type of fintech service, namely M-Banking. This could limit the

generalizability of the results to other socio-cultural contexts or other types of fintech services. We therefore suggest extending the model studied to other types of financial innovation, in order to test the robustness of the relational chain: use-trust-empowerment-inclusion.

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Appendix: Figures and tables

Figure 1: Research model.

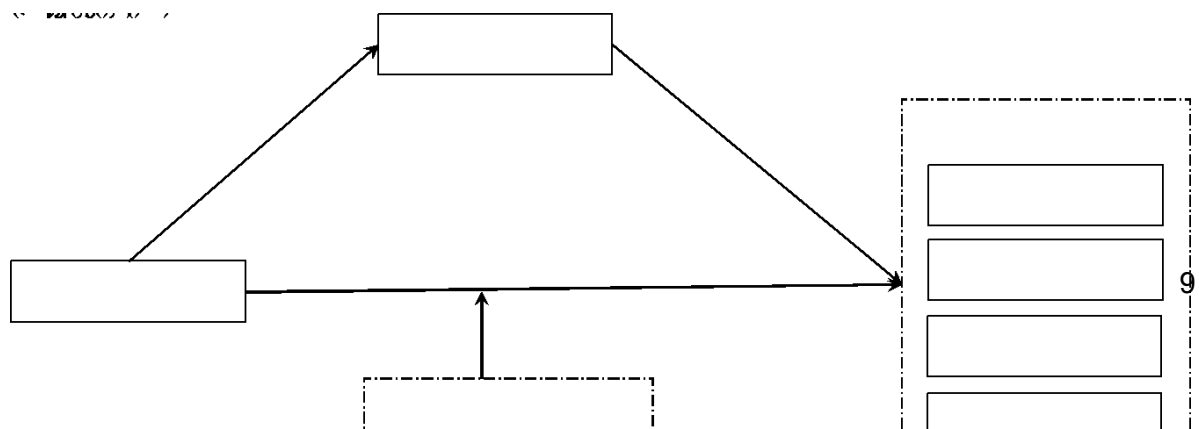


Table 1 : Caractéristiques de l'échantillon

Demographic	Categories	Sample
Age group (years)	18–35	39.1
	36–53	41.7
	54+	19.2
Highest educational level	Primary	3.7
	Secondary	32.8
	University 1st or 2nd cycle	37.6
	University 3rd cycle or higher	25.9
Monthly income (US$)	Bas (< $65)	23.4
	Moyen ($66–$700)	67.4
	Elevé (>$701)	9,3
Gender	Male	51.3
	Female	48.7

Table 2: Reliabilities, indicator loadings, and multicollinearity measurement

Constructs	**Outer loadings**	**VIF**
Autonomy (AU) reflects a sense of being the author of one's actions. It refers to the organismic desire for self-organization and activity consistent with one's integrated sense of self (Spreitzer, 1995 ; Li, 2016 ; Auh et al., 2019) α = 0.791, Rho = 0.801, CR = 0.856, AVE = 0.544		
AU_1: The application allows me to monitor my account in real-time.	0.708	1.446
AU_2: Thanks to the app, it's convenient to check my account from anywhere.	0.718	1.518
AU_3: I need to have control over my banking.	0.754	1.558
AU_5: Thanks to my banking app, I feel less dependent on bank branches.	0.780	1.513
AU_6: I have the freedom to choose how and when to use my banking app.	0.725	1.430
Competence (CP) refers to the feeling of being effective in one's actions, whereas affiliation (social relationship) corresponds to the desire to feel connected to others, to be loved, and to be cared for (Spreitzer, 1995 ; Li, 2016 ; Auh et al., 2019). α = 0.829, Rho = 0.833, CR = 0.879, AVE = 0.594		
CP_1: I am confident in my ability to utilize the features of my banking app.	0.754	1.718
CP_2: I can manage my banking transactions independently without needing assistance.	0.779	1.823
CP_4: I feel comfortable navigating the app's various features.	0.772	1.697
CP_5: I can manage most of my banking transactions without human assistance.	0.774	1.592
CP_6: I can manage my banking transactions without having to go through a banking advisor.	0.770	1.646
Access (IFA) refers to the availability and ability of individuals and businesses—especially those traditionally underserved or excluded—to use formal financial services. This includes access to banking, credit, savings, insurance, and payment systems (Demirguc-Kunt et al., 2018; Khera et al., 2022; Okello Candiya Bongomin et al., 2018). α = 0.863, Rho = 0.866, CR = 0.901, AVE = 0.646		
IFA_1: The account maintenance fees charged by the institution are affordable.	0.831	2.128

IFA_2: The minimum savings account balance required by the financial institution is affordable	0.817	2.068
IFA_3: The minimum loan amount offered by the institution is satisfactory.	0.799	1.925
IFA_4: The initial account opening fees charged by the financial institution are affordable.	0.771	1.881
IFA_5: The loan fees charged by the financial institution are affordable.	0.799	2.014
Quality (IFQ) refers to how well financial products and services match the needs of users, including their safety, convenience, range of options, transparency, and consumer protection (Demirguc-Kunt et al., 2018; Khera et al., 2022; Okello Candiya Bongomin et al., 2018).		
α = 0.892, Rho = 0.893, CR = 0.915, AVE = 0.607		
IFQ_1: The members of this household trust the financial products and services offered by the financial institution.	0.801	2.138
IFQ_2: The institution always provides its services regularly.	0.792	1.972
IFQ_3 The financial services provided by the institution are suitable for our needs.	0.776	1.976
IFQ_4: The savings product offered by the bank meets our needs.	0.770	1.936
IFQ_5 The loan product provided by the institution is suitable for our needs.	0.769	1.912
IFQ_6 The process of obtaining financial services from the financial institution is simple.	0.769	2.014
IFQ_7 The interest on the deposit services offered by the financial institution is attractive to us	0.774	1.929
Usage (IFU) refers to the regularity and duration with which financial services are used, indicating not just access, but active engagement (Demirguc-Kunt et al., 2018; Khera et al., 2022; Okello Candiya Bongomin et al., 2018).		
α = 0.772, Rho = 0.772, CR = 0.898, AVE =0.814		
IFU_2: The institution's level of service delivery is outstanding.	0.900	1.652
IFU_4: The institution's paperwork requirements are favourable.	0.905	1.652
Welfare (IFW) refers to the positive economic and social outcomes, such as improved income stability, increased savings, better health and education outcomes, reduced vulnerability to shocks, and greater economic empowerment, that individuals or households experience due to meaningful access to and use of formal financial services. (Okello Candiya Bongomin et al., 2018).		
α = 0.877, Rho = 0.878, CR = 0.915, AVE = 0.730		
IFW_1: The products and services offered by the financial institution allow us to acquire more assets/goods.	0.874	2.418
IFW_2: The products/services offered increase our income.	0.863	2.245
IFW_3: The products/services offered improve our access to various services.	0.836	2.083
IFW_4: The products and services offered by the financial institution improve our standard of living.	0.845	2.073
M-banking Usage (MU) refers to the use of mobile devices (such as smartphones or basic mobile phones) to perform financial transactions and access banking services remotely. It enables users to conduct a range of financial activities—such as checking account balances, transferring money, paying bills, saving, borrowing, and accessing financial information—without the need to visit a physical bank branch (Moon et Kim, 2001; Baabdullah et al., 2019).		
α = 0.878, Rho = 0.879, CR = 0.911, AVE = 0.673		
MU_1: Using my banking app has become a daily routine.	0.829	2.111
MU_2: I prefer using my banking app rather than going to a branch.	0.820	2.049
MU_3: I use all the banking app's features to facilitate my transactions.	0.819	2.044
MU_4: My banking app has become an essential tool in my banking transactions.	0.832	2.174
MU_5: I explore the different features offered by my banking app.	0.800	1.963
Relatedness (RE) refers to the user's perception of feeling socially connected, supported, or engaged with others (individuals, banks, or the financial community) through the use of mobile banking services (Gibson,1991; Ramani & Kumar, 2008; Li, 2016).		
α = 0.721, Rho = 0.722, CR = 0.843, AVE = 0.641		
RE_2: My bank uses my feedback to improve the app.	0.808	1.381
RE_3: I can give my opinion on improvements to the app's features.	0.800	1.443
RE_4: The app helps me develop a sense of responsibility when managing my finances.	0.794	1.422
Trust (TR) refers to a user's belief that the mobile banking system, the service provider (typically a bank or mobile network operator), and the technology itself are reliable, secure, and will act in the user's best interest (Zhou, 2012 ; Gefen et al., 2003 ; Jarvenpaa et al., 2000).		
α = 0.851, Rho = 0.854, CR = 0.893, AVE = 0.625		
TR_1: I trust my banking app to ensure the security of my transactions.	0.756	1.789
TR_2: I feel safe when using my app to make payments.	0.788	1.946
TR_3: My banking app keeps its promises.	0.812	1.869
TR_4: My banking app is trustworthy.	0.803	1.865

TR_5: My banking app takes customers' interests into account.	0.793	1.802

Table 3: Variance explanation and prediction relevance

Endogenous Variables	R-square	Q^2predict	RMSE	MAE
Access	0.463	0.428	0.759	0.542
Quality	0.616	0.584	0.648	0.485
Trust	0.520	0.518	0.697	0.522
Usage	0.504	0.479	0.724	0.558
Welfare	0.544	0.498	0.711	0.503

Table 4: GoF measurement

Goodness of Fit (GoF) Analysis	Values
SRMR	0.051
NFI	0.819

Table 5: Construct effect size and measurement of multicollinearity among predictor constructs

Exogenous constructs	f-square	VIF
Autonomy -> Access	0.000	2.908
Autonomy -> Quality	0.003	2.908
Autonomy -> Usage	0.000	2.908
Autonomy -> Welfare	0.016	2.908
Competence -> Access	0.001	3.265
Competence -> Quality	0.006	3.265
Competence -> Usage	0.018	3.265
Competence -> Welfare	0.013	3.265
M-banking Usage -> Access	0.077	3.039
M-banking Usage -> Quality	0.046	3.039
M-banking Usage -> Trust	1.085	1.000
M-banking Usage -> Usage	0.026	3.039
M-banking Usage -> Welfare	0.055	3.039
Relatedness -> Access	0.045	2.796
Relatedness -> Quality	0.109	2.796
Relatedness -> Usage	0.063	2.796
Relatedness -> Welfare	0.102	2.796
Trust -> Access	0.013	2.708
Trust -> Quality	0.031	2.708
Trust -> Usage	0.015	2.708
Trust -> Welfare	0.039	2.708

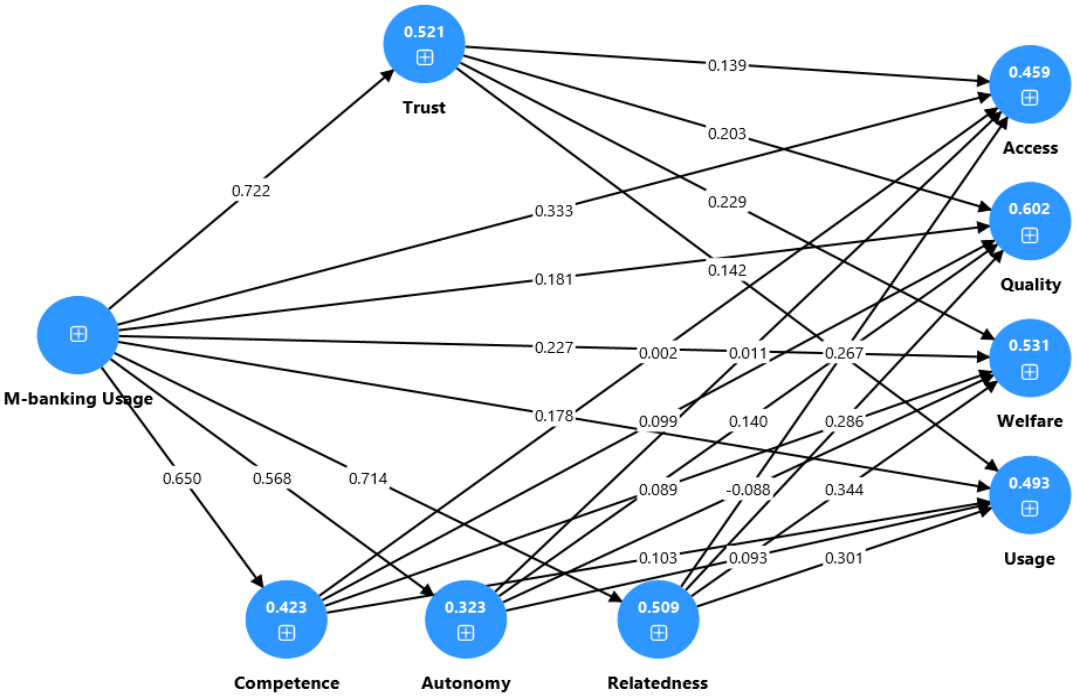
Table 6: Evaluation of the hypotheses

Hypotheses	Original sample (O)	P values	Significant ?
H_{1a}: M-banking Usage -> Access	0.354	0.000	***Yes
H_{1b}: M-banking Usage -> Quality	0.233	0.000	***Yes

H_{1c}: M-banking Usage -> Welfare	0.277	0.000	***Yes
$H1_{d}$: M-banking Usage -> Usage	0.199	0.000	***Yes
H_{2}: M-banking Usage -> Trust	0.721	0.000	***Yes
H_{3a}: Trust -> Access	0.139	0.011	*Yes
H_{3b}: Trust -> Quality	0.179	0.000	***Yes
H_{3c}: Trust -> Welfare	0.219	0.000	***Yes
H_{3d}: Trust -> Usage	0.142	0.011	*Yes
Moderations			
H_{4a}: Autonomy x M-banking Usage -> Access	-0.025	0.585	N.S
H_{4b}: Autonomy x M-banking Usage -> Quality	-0.105	0.005	**Yes
H_{4c}: Autonomy x M-banking Usage -> Usage	-0.120	0.001	**Yes
H_{4d}: Autonomy x M-banking Usage -> Welfare	-0.083	0.046	*Yes
H_{4e}: Competence x M-banking Usage -> Access	0.070	0.150	N.S
H_{4f}: Competence x M-banking Usage -> Quality	-0.006	0.910	N.S
H_{4g}: Competence x M-banking Usage -> Usage	0.116	0.007	**Yes
H_{4h}: Competence x M-banking Usage -> Welfare	0.093	0.069	N.S
H_{4i}: Relatedness x M-banking Usage -> Access	0.013	0.771	N.S
H_{4j}: Relatedness x M-banking Usage -> Quality	0.105	0.024	*Yes
H_{4k}: Relatedness x M-banking Usage -> Usage	0.001	0.979	N.S
H_{4l}: Relatedness x M-banking Usage -> Welfare	0.064	0.209	N.S
Indirect effects			
H_{5a}: M-banking Usage -> Trust -> Quality	0.129	0.000	***Yes
H_{5b}: M-banking Usage -> Trust -> Usage	0.103	0.011	*Yes
H_{5c}: M-banking Usage -> Trust -> Welfare	0.158	0.000	***Yes
H_{5d}: M-banking Usage -> Trust -> Access	0.101	0.011	*Yes

* p<0.05; **p<0.01; *** p<0.001 (Hair et al., 2019); n.s. =not significant.

Figure :


0.521
Trust
0.459
Access
0.602
Quality
0.531
Welfare
0.493
Usage
0.423
Competence
0.323
Autonomy
0.509
Relatedness
M-banking Usage
0.722
0.139
0.203
0.229
0.333
0.181
0.142
0.227
0.002
0.011
0.267
0.178
0.099
0.140
0.286
0.650
0.568
0.714
0.089
-0.088
0.344
0.103
0.093
0.301