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Going beyond adoption: Unveiling the drivers of customer continuance intentions to use FinTech in Ethiopia

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Purpose: The purpose of this study is to explore the factors influencing customers' continuance intention to use financial technology (FinTech) by integrating the technology acceptance model (TAM) and the expectation-confirmation model (ECM).

Design/methodology/approach: A self-administered survey was distributed to 320 bank customers in Ethiopia to gather data. The research model was tested using partial least squares structural equation modelling (PLS-SEM).

Findings/results: The results indicate that both perceived usefulness and perceived ease of use have significant effects on customer satisfaction, which, in turn, significantly influences the continuance intention to use FinTech. In addition, expectation confirmation was found to significantly moderate the relationship between perceived usefulness and customer satisfaction, although it had no significant moderating effect on the relationship between perceived ease of use and customer satisfaction.

Practical implications: The study suggests that banks should focus on enhancing the perceived usefulness and ease of use of FinTech services to increase customer satisfaction and encourage continued usage. It also highlights the importance of managing customer expectations to improve their satisfaction levels and promote long-term engagement with FinTech services.

Originality/value: This study contributes to theoretical research by extending the understanding of the TAM and ECM in the context of FinTech adoption. A unique aspect of this study is its examination of the mediating role of expectation confirmation in shaping customer satisfaction and continuance intention. Furthermore, the study enriches the literature on customers' continuance intention to use FinTech, offering valuable insights for banks aiming to strengthen their relationships with FinTech users.

Keywords: FinTech**;** technology acceptance model**;** expectation-confirmation model**;** customer satisfaction**;** continuous intention

Introduction

With the development of digital technology, information and communication technology has been transformatively integrated into the financial sector, fundamentally reshaping the way financial services are provided. As a product of this integration, financial technology (FinTech) offers innovative financial products that are more efficient, user-friendly and cost-effective than traditional banking services (Jangir et al., 2023; Nasrullah & Dar, 2023; Wang et al., 2019), leading to profound changes in the financial industry. The global growth of FinTech is particularly impactful in emerging markets. The rise of FinTech has brought unprecedented development opportunities to emerging markets, and by providing low-cost, high-efficiency financial services, it helps to narrow the digital divide and promote the comprehensive development of the economy and society (Menza et al., 2024). For example, Ethiopia has seen promising developments with the launch of digital payment solutions such as TeleBirr by Ethio Telecom. However, emerging markets often face challenges, including inadequate digital infrastructure, regulatory barriers and low trust levels (Nurdin et al., 2023), which result in lower adoption rates and willingness to adopt FinTech among customers. Therefore, enhancing customer satisfaction with the use of FinTech and increasing the enthusiasm for continuous use of FinTech has become a significant challenge for countries in emerging markets.

Previous literature on the adoption of financial technology has employed various theoretical frameworks (such as the expectation confirmation [EC] model, the unified theory of acceptance

and use of technology, the technology acceptance model [TAM] and self-efficacy theory) to primarily explore the factors influencing the adoption of financial technology, including user motivation, subjective norms, perceived usefulness (PU), self-efficacy and performance expectations (Jangir et al., 2023; Jerene & Sharma, 2020; Menza et al., 2024; Nasrullah & Dar, 2023). However, most of these studies have focused on customers' adoption behaviour towards FinTech, neglecting how to promote the customers' continuous use of FinTech. Customers' continuance intention to use FinTech can more comprehensively reflect customers' long-term acceptance and loyalty to FinTech. Hence, there is a need for comprehensive research that explores post-adoption behaviours and customer retention mechanisms, especially within the context of emerging markets like Ethiopia.

Furthermore, prior research primarily utilises the TAM to explain user adoption of information technology, whereas expectation-confirmation model (ECM) has been applied to investigate consumer repurchase behaviour in FinTech services (Bhattacherjee, 2001; Brown et al., 2012; Jerene & Sharma, 2020). There are few studies investigating the synergistic effects of these two models on influencing customers' continuance intentions within the FinTech context in an emerging market. Given that FinTech combines information technology and financial services, integrating these theoretical frameworks is essential for a comprehensive understanding of customer behaviour in this sector. Because of ECM's focus on post-use confirmation, the TAM-ECM framework follows a logical sequence of 'Perception-Confirmation-Satisfaction-Repurchase'. Accordingly, our research model builds ECM upon the constructs of TAM (PU and perceived ease of use [PEOU]). Meanwhile, EC is often treated as an antecedent or outcome construct in various studies on the influence of customer satisfaction (CS) (Harnadi et al., 2024; Nguyen et al., 2024; Zhang et al., 2018). To date, no studies have explored EC as a moderator in the FinTech context.

By acknowledging these gaps in the literature on IT continuance, our study seeks to employ an integrated framework combining the TAM and ECM to investigate customer continuance intention to use FinTech in the context of Ethiopia. Our study has the following contributions: Firstly, it identifies and empirically tests the predictors of continuance intention to use FinTech within the Ethiopian context. By integrating TAM and ECM, we confirm that PU and PEOU are positively interrelated to CS, fostering continuous intention to use FinTech. Secondly, the model innovatively investigates the moderating role of EC between TAM and CS. The link between PU and EC has expanded the literature by emphasising the role of PU and EC in shaping CS. Thirdly, this study extends the TAM-ECM model to the Ethiopian FinTech sector, thereby broadening the application of these models to emerging economies. In addition, the study provides practical recommendations for bank managers and FinTech providers to design and manage their platforms effectively to enhance customer retention.

Our study is structured as follows. The section 'Literature review' presents a thorough literature review that supports the formulation of the theoretical framework. The section 'Hypotheses development' delineates the hypotheses' development. The section 'Methodology' outlines the research methodology utilised in the study. The section 'Results' outlines the research analysis and findings, whereas the section 'Discussions and implications' explores the discussions and implications derived from these findings.

Literature review

FinTech

FinTech, characterised as the digital transformation of financial solutions (Arner et al., 2015), refers to innovative products and services delivered through new technologies (Shiau et al., 2020). It encompasses a wide range of technologies that disrupt traditional financial institutions and transform the financial sector (Mărăcine et al., 2020). Key technologies include Internet banking, mobile payments, crowdfunding, peer-to-peer lending, robotic advisory systems, artificial intelligence and online identification (Junejo et al., 2019).

FinTech provides individuals with affordable, secure and real-time access to services (Dissanayake et al., 2023). Consequently, it enhances user experience through efficiency, effectiveness and user-friendly designs while also improving access to real-time information (Memon et al., 2021).

Given the high competition in the banking sector and the homogeneity of products and services provided by commercial banks, it is advisable for financial institutions to implement customer feedback systems and assess their technology platforms against current advancements to improve customer satisfaction (Junejo et al., 2019). FinTech empowers customers by providing greater transparency, cost savings and improved access to financial information (Gupta et al., 2024). However, while FinTech can enhance the efficiency and reach of financial services, it may also undermine the franchise value of existing institutions, leading to excessive risk-taking or regulatory arbitrage (Kishor et al., 2024). Furthermore, the shifts in the financial landscape brought about by FinTech could impact monetary policy transmission and the effectiveness of macroprudential measures in stabilising financial cycles (Cevik, 2024). Targeted policy initiatives should complement FinTech development to address ongoing gender, rural and income-based financial inclusion gaps, according to recent research (Kehinde-Peters, 2024). In emerging market economies, which often have underdeveloped financial sectors and a considerable segment of the population excluded from financial services, the potential benefits of these technological advancements are substantial. However, the association between FinTech and financial inclusion is multifaceted and warrants further investigation (Salampasis & Mention, 2018).

In Ethiopia, where state-owned banks have historically monopolised financial services, the emergence of FinTech

companies has transformed the landscape by offering innovative solutions tailored to the needs of the population (Mittal & Gupta, 2023). These companies leverage mobile banking, digital payments and peer-to-peer financing to reach rural and underserved communities (Fetu, 2019). This article defines FinTech as innovative financial services that utilise advanced technological tools, such as online banking, mobile banking, digital payment platforms and e-commerce payment systems.

Technology acceptance model

Building upon the theory of reasoned action (TRA), Davis (1989) introduced TAM with the objective of elucidating the factors influencing users' acceptance of information systems (IS). According to the TAM, users' intentions significantly drive the actual utilisation of IS. Users' attitudes towards the IS shape these intentions, with two critical factors influencing them: PU and PEOU (Awad, 2020). Perceived usefulness refers to the extent to which individuals believe that using the technology will enhance their work efficiency and productivity (Ahmed et al., 2020). In contrast, PEOU relates to the assessments of technology's intrinsic characteristics, including its usability, learnability, flexibility and interface clarity (Davis, 1989). Furthermore, PEOU directly impacts PU, which in turn mediates the influence of PEOU on users' intentions (Davis, 1989).

The TAM was initially formulated to forecast users' initial acceptance of new IS. Numerous studies have validated its efficacy in predicting and elucidating users' behaviours regarding IS utilisation (Park et al., 2012). Additionally, TAM has been employed in various research to examine users' continuance intentions towards IS (Yin & Lin, 2022). The constructs of PU and PEOU have been rigorously validated as primary antecedents influencing users' continuance intentions. Given that the TAM is a highly parsimonious and versatile framework applicable to both initial and sustained IS adoption (Thong et al., 2006), we integrate PEOU into the foundational structure of the ECM to more effectively elucidate users' continuance intentions.

Expectance-confirmation model

Expectation-confirmation model, developed by Bhattacherjee (2001), draws from the expectation-confirmation theory (ECT), which is widely used in consumer behaviour research to examine aspects such as consumer satisfaction, post-purchase evaluations and service marketing. Specifically, Bhattacherjee (2001) proposed ECM to clarify individual behaviours regarding the continued use of information systems, also known as the IT continuance model (Talwar et al., 2020). The model posits that a user's initial expectations of technology and their subsequent confirmation or disconfirmation of those expectations directly influence their level of satisfaction and intention to continue using the system (Thong et al., 2006). Expectation-confirmation model, as a theoretical framework centred on the continuous use of IS, provides valuable insights into user behaviours that are not adequately addressed by initial adoption theories (Yuan et al., 2016). It also suggests that users' expectations evolve post-adoption, identifying PU as a proxy for these post-adoption expectations, thus addressing the limitations of the ECT (Thong et al., 2006).

Numerous studies have utilised ECM to understand customers' continued use of IS, including mobile payment (Franque et al., 2021), electronic banking (Ogedengbe & Abdul-Talib, 2020), e-learning (Limayem & Cheung, 2008) and e-commerce platforms (Chen et al., 2010). These investigations highlight the effectiveness of ECM in assessing continuance intentions within the mobile commerce context. Moreover, prior studies underscore the significance of investigating the continuance intention in the FinTech sector, driven by the rapid increase in both investments and the adoption of these technologies by users (Chan & Yao, 2020), as well as the existing gaps in the literature that present opportunities for further research (Talwar et al., 2020). Given that financial technologies remain relatively novel in many contexts, it is crucial to evaluate their success by analysing user behaviour through the lens of continuance intention. This involves assessing the factors most closely associated with users' decision-making processes regarding continuing usage (Khayer & Bao, 2019; Wang et al., 2019). Consequently, this study utilises the ECM to analyse users' intentions to continue using FinTech.

Hypotheses development

The ECM and the TAM share certain similarities, as they both consider personal perception factors and assume rational behaviour. However, the ECM model is more comprehensive compared to TAM. The technology acceptance model primarily focuses on the initial acceptance of information systems, while ECM concentrates on the continuous use of these systems. Furthermore, TAM emphasises the acceptance and cognition of information systems, while ECM places more emphasis on user experience and subsequent behaviour. When examining the continued use of FinTech services, the ECM framework is more appropriate, as it is better suited for studying users' willingness to continue using these services (Zhou & Liu, 2014). The ECM model evaluates whether a product or service is satisfactory by comparing the user's expectations with their perceived performance. Satisfaction then becomes a reference point for the user's repurchase intention. Because of ECM's focus on post-use confirmation, the TAM-ECM framework follows a logical sequence of 'Perception-Confirmation-Satisfaction-Repurchase'. Accordingly, the research model in this article builds ECM upon the constructs of PU and PEOU. The research model is illustrated in Figure 1.

The effects of perceived usefulness and perceived ease of use on customer satisfaction

Perceived usefulness is defined as a user's perception that utilising a specific system can improve their performance (Davis, 1989). It is an extrinsic drive that plays a decisive role in determining an individual's or customer's intention to use

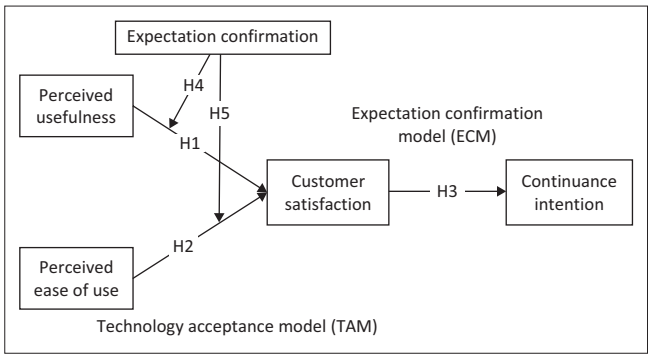


FIGURE 1: The proposed research model.

technology (Hasan et al., 2021), wherein the customer perceives that employing technology will enhance their performance. Utilising FinTech services allows customers to improve their efficiency in performing tasks such as checking bank balances, applying for loans and making payments at any time from any location (Zhou & Liu, 2014). Consequently, it is logical to infer that if FinTech users perceive the technology as valuable, they will continue utilising it (Jangir et al., 2023). Prior studies indicate that PU is positively related to satisfaction (Jangir et al., 2023; Yuan et al., 2016). Therefore, we proposed the following hypothesis:

H1: Perceived usefulness positively influences customer satisfaction.

The PEOU, which originates from TAM (Davis, 1989), is a significant benefit of FinTech services because it has emerged as a primary factor contributing to consumer satisfaction (Sampaio et al., 2017). According to Zhang et al. (2018), PEOU denotes an individual's evaluation of the effort required to execute a task utilising a new technology. It is a significant factor that enhances satisfaction (Khayer & Bao, 2019); when technologies are regarded as user-friendly, they are more likely to foster contentment, as PEOU constitutes a primary cognitive belief among users (Cheng, 2018). The positive correlation between PEOU and satisfaction with financial technologies in the banking sector has been substantiated by numerous studies (Kumar et al., 2018; Zhang et al., 2018). Thus, we proposed the following hypothesis:

H2: Perceived ease of use positively influences customer satisfaction.

The contribution of customer satisfaction to continuance intention

According to Bhattacherjee (2001), satisfaction can be previously defined as the sensitive reaction that an individual expresses in response to their experience with technology. Expectation-confirmation model states that it is an important part of continuance intentions, and earlier studies have indicated that it is also a prerequisite for continuance intentions (Gupta et al., 2024; Xia et al., 2024). Users who are satisfied with financial technologies are more likely to employ them for financial chores (Brown et al., 2012; Lin et al., 2017; Putritama, 2019). Conversely, if users are unhappy with the services or products, they may discontinue using them (Kumar et al., 2018; Thong et al., 2006). Thus, customer satisfaction can encourage long-term partnerships. Prior research indicates that satisfaction is positively associated with a continuing intention to use technology (Gupta et al., 2020; Shang & Wu, 2017; Zhou et al., 2018). Therefore, the subsequent hypothesis is posited:

H3: Customer satisfaction positively impacts customer continuity intention.

The indirect influence of expected confirmation on perceived usefulness, perceived ease of use and customer satisfaction

According to Bhattacherjee (2001), EC describes the way in which a consumer perceives the degree of similarity between two performances, specifically the real and expected performance of system technology. Consumers may have pre-purchase expectations about a product or service. This is often based on personal experiences, product advertisements or oral communications (Kim et al., 2009). Expectation-confirmation model explains that when a user's perceived performance of system technology meets or exceeds their initial expectations, they experience a confirmation of their expectations, leading to higher satisfaction and a greater probability of continuous usage (Brown et al., 2012). Conversely, if the user's perceived performance falls short of their expectations, they experience a disconfirmation, which results in lower satisfaction and a decreased intention to continue using the system (Thong et al., 2006). In the FinTech sector, confirmation pertains to consumers' perception of the congruence between their expectations and a product's overall efficacy (Nasrullah & Dar, 2023). Hence, the ECM suggests that EC positively affects PU and satisfaction with IT products and services (Bhattacherjee, 2001). Prior studies (Chiu et al., 2021; Harnadi et al., 2024; Khayer & Bao, 2019; Nguyen et al., 2024) consistently validate this argument. Moreover, the research conducted by Nasrullah and Dar (2023) enhances the literature by exploring the impact of domain-specific self-efficacy on FinTech continuing intention and integrating EC as a mediating variable. Finally, Zhou et al. (2018) find that the primary factors of TAM (PEOU and PU) positively correlate with confirmation, leading to satisfaction in using electronic finance services.

While prior research has consistently demonstrated that PU and PEOU positively influence CS, the potential moderating role of EC remains largely unexplored. In a perfectly competitive market, as consumers can make more comprehensive choices from diverse products or services, ECM plays a mediating role between TAM and satisfaction. However, in a market with a certain monopolistic nature, such as financial services, ECM is difficult to play a greater mediating role between TAM and satisfaction but rather plays a more important regulatory role between TAM and satisfaction. Hence, it is reasonable to anticipate that both PU and PEOU would enhance customer satisfaction. However, we propose that EC may negatively moderate this relationship. Specifically, as elaborated in the literature review, when users'

expectations are not met, it can lead to a decline in satisfaction, overshadowing the positive effects of PU and ease of use. This intervention makes this study unique compared to previous studies in the same area. Therefore, the following hypotheses are postulated:

H4: Expected confirmation negatively moderates the relationships between perceived usefulness and customer satisfaction.

H5: Expected confirmation negatively moderates the relationships between perceived ease of use and customer satisfaction.

Methodology

Sampling and data collection

The target population for this study consists of customers of FinTech services provided by commercial banks in Addis Ababa, Ethiopia. Specifically, the study focuses on users of the Commercial Bank of Ethiopia (CBE), Bank of Abyssinia (BOA) and Awash International Bank (AIB). These three banks were chosen for their prominence in the Ethiopian banking sector and their significant FinTech offerings, including mobile banking, Internet banking and digital payment platforms. These services are crucial for promoting financial inclusion in Ethiopia, particularly in reaching the unbanked and underserved populations. To ensure the study captures a broad and representative view of FinTech users, the sample included customers from diverse demographic backgrounds, including variations in age, gender, education level and income level. Addis Ababa, being the capital city and the financial hub of Ethiopia, presents a diverse user base in terms of both technological adoption and financial behaviour, making it an ideal location for the study. A stratified random sampling method was employed to ensure the inclusion of customers from each of the selected banks, as well as different segments of FinTech users, such as those utilising mobile banking, digital wallets and Internet banking services.

Before the administration of the survey, participants were provided with information about the study and its procedures. Informed consent was obtained verbally, as the survey was designed to collect only non-identifiable data, ensuring participants' privacy and confidentiality. The voluntary nature of participation was emphasised, and participants had the option to withdraw at any time without consequences. No minors were involved in the study, and as no sensitive or private information was collected, formal documentation of consent was not required.

Before the administration of the survey, we carefully considered the appropriate sample size. Stevens (2002) states that the sample size for social science research should exceed 15 times the number of predictors in the model. Given that our model comprises four predictors, the minimum sample size should, therefore, be greater than 60. However, the application of structural equation modelling (SEM) necessitates a larger sample size; Hoelter (1983) and Hair et al. (2019) indicate that a minimum of 200 respondents is essential for effective hypothesis testing.

Ultimately, we distributed 350 paper-based surveys at bank branches from 01 January 2024 to 31 March 2024, particularly targeting customers who are physically visiting the bank for FinTech-related services, such as assistance with mobile banking or digital payments. A total of 339 responses were collected, of which 320 were considered valid for further analysis. A total of 71.56% of respondents were male, while female respondents constituted 28.44%. Most respondents, specifically 49.38%, belong to the 18–30 age group. The majority of respondents were students, comprising 69.38% of the sample. In addition, a significant portion, 39.06%, reported having completed college or university education. A total of 38.44% of the respondents had just recently begun utilising FinTech (see Table 1).

Measures

We utilise a structured questionnaire as the primary tool for data collection. The structured questionnaire consisted of two main sections.

The first section concentrated on gathering demographic information from the respondents, encompassing details such as gender, age, educational background, occupation and years of experience using FinTech services. These demographic factors are essential for analysing how different customer segments interact with FinTech and how their characteristics may influence their continuance intentions. The second part included a series of statements related to the key constructs of TAM and ECM, including PU, PEOU, EC, CS and CI, to use FinTech services. A five-point Likert scale (1 = strongly disagree, 5 = strongly agree) was used to assess all the items. The questions were adapted from existing validated scales from prior studies to ensure reliability and validity and modified to fit the FinTech research context.

TABLE 1: Respondent's demographic profile.

Variable	Category	Frequency	%
Gender	Male	229	71.56
	Female	91	28.44
Age (years)	18–30	40	49.38
	31–40	158	12.50
	41–50	105	32.81
	51–60	16	5.00
	> 60	1	0.31
Education	Below high school	82	25.63
	High school	70	21.88
	University and college	125	39.06
	Graduate	43	13.44
Occupation	Student	222	69.38
	Private employee	32	10.00
	Self-employed	39	12.19
	Civil servant	18	5.63
	Unemployed	9	2.81
Experience	< 3 months	110	34.38
	3–6 months	123	38.44
	6–12 months	75	23.44
	> 1 year	12	3.75

Perceived usefulness and PEOU were measured using four items each, based on the work of Davis (1989). The measurements for EC (three items), CS (four items) and CI (three items) were adapted from Bhattacherjee (2001).

Results

Data analysis

The collected data were analysed using SEM, a robust numerical technique that tested complex relationships among multiple variables. Structural equation modelling was suitable for this study because it facilitated the simultaneous examination of direct and indirect effects among the constructs of TAM and ECM. The analysis was conducted using Smart PLS software, which is widely used for partial least squares (PLS)-SEM and is particularly suited for testing hypotheses in exploratory research with latent variables.

Reliability and validity

The measurement model was evaluated to confirm that the measurements in this study were valid and reliable. We estimated the internal consistency reliability using Cronbach's α and composite reliability (Hair et al., 2013).

As shown in Table 2, both Cronbach's α (ranging from 0.799 to 0.868) and composite reliability (ranging from 0.809 to 0.871) values are more than 0.7, confirming the model's reliability (Hair et al., 2013). In addition, to ensure the reliability of our indicators, we examined their outer loadings, as recommended by Hair et al. (2019). We omitted indicator PEOU4 from further analysis because its loading fell below the required threshold of 0.7, while all other indicators demonstrated loadings above this standard.

A convergent and discriminant validity assessment is also conducted to ascertain the validity of the measurement model. The convergent validity was evaluated by estimating the average variance extraction (AVE) (Hair et al., 2011), and it must surpass 0.50 to confirm convergent validity (Henseler et al., 2015). Table 2 reveals that the AVE values of all constructs satisfied the criteria, confirming convergent validity. To carry out a discriminant validity test, we utilise a heterotrait–monotrait (HTMT) ratio of correlations approach (Hair et al., 2019). The findings reveal that all HTMT values are below the required threshold of 0.85 (Hair et al., 2019), as indicated in Table 3. Thus, the standard for discriminant validity was met.

Structural equation model

Following the examination of the study's measurement model, we proceed to assess the structural model to test the hypotheses. This article utilised the bootstrapping (10 000 resamples) approach in Smart PLS to attain a stable coefficient (Hair et al., 2013). The initial assessment focused on evaluating collinearity among the constructs. The variance inflation factor (VIF) values ranged from 1 to 2.810 (Table 2), all of which are under the established threshold of 3 (Hair et al., 2019). This suggests that collinearity was not a concern in this study. Moreover, structural model analyses evaluate the coefficient of determination (R^2), which measures the explained variance. The findings revealed that the R^2 values of customer satisfaction and continuance

TABLE 3: Heterotrait–monotrait ratio.

Constructs	CI	CS	EC	PEOU	PU	EC × PU	EC × PEOU
Continuance Intention	-	-	-	-	-	-	-
Customer Satisfaction	0.421	-	-	-	-	-	-
Expectation Confirmation	0.547	0.363	-	-	-	-	-
Perceived Ease of Use	0.583	0.474	0.531	-	-	-	-
Perceived Usefulness	0.603	0.401	0.511	0.477	-	-	-
EC × PU	0.293	0.370	0.347	0.374	0.286	-	-
EC × PEOU	0.411	0.347	0.437	0.384	0.376	0.651	-

CI, Continuance Intention; PEOU, perceived ease of use; PU, perceived usefulness; EC, expectation confirmation; CS, customer satisfaction.

TABLE 2: Evaluation of convergent validity and reliability.

Constructs	Items	VIF	Outer loadings	Cronbach's alpha	Composite reliability (rho_a)	Average variance extracted (AVE)
Perceived Usefulness (PU)	PU1	1.733	0.806	0.809	0.809	0.635
	PU2	1.722	0.806	-	-	-
	PU3	1.704	0.805	-	-	-
	PU4	1.549	0.771	-	-	-
Perceived Ease of Use (PEOU)	PEOU1	2.215	0.888	0.842	0.845	0.760
	PEOU2	1.967	0.875	-	-	-
	PEOU3	1.905	0.852	-	-	-
Expectation Confirmation (EC)	EC1	1.908	0.799	0.799	0.812	0.714
	EC2	2.550	0.914	-	-	-
	EC3	1.604	0.817	-	-	-
Customer Satisfaction (CS)	CS1	1.769	0.779	0.815	0.827	0.643
	CS2	2.088	0.863	-	-	-
	CS3	1.741	0.790	-	-	-
	CS4	1.640	0.772	-	-	-
Continuance Intention (CI)	CI1	2.284	0.889	0.868	0.871	0.792
	CI2	2.810	0.916	-	-	-
	CI3	2.083	0.864	-	-	-

VIF, variance inflation factor.

intention to use FinTech are 0.233 and 0.126, respectively. In addition, the Q^2 was assessed to determine the predictive relevance of the endogenous variables. The results indicated that the Q^2 values for customer satisfaction (0.168) and continuance intention to use FinTech (0.197) were greater than zero as of the recommended threshold, demonstrating that the proposed model possesses predictive relevance (Hair et al., 2013).

According to the model analysis results, PU has a positive and significant influence on CS (β = 0.152, $p < 0.01$) on using FinTech, supporting H1. The effect of PEOU on CS is positive and significant (β = 0.238, $p < 0.001$), supporting H2. Consequently, CS positively and significantly influences customers' CI (β = 0.355, $p < 0.001$), supporting H3. Figure 2 displays the results of the model analysis.

We believe that EC moderates the interactions between PU and CS (H4) and PEOU and CS (H5). The analysis revealed a statistically significant moderating effect of EC on the relationship between PU and CS (β = −0.139, $p < 0.05$). This supports H4. However, the insignificant moderating effect of EC on the relationship between PEOU and CS led to the rejection of H5 (Table 4). The support of H4 indicates that the influence of EC on CS is contingent upon PU. Figure 3 illustrates that the slope of the line representing the moderating effect of EC on the relationship between PU and CS is greater for lower EC levels than for higher EC levels. Consequently, a lower EC value indicates a stronger correlation between PU and CS, and conversely, a higher EC value suggests a weaker relationship. This means PU has a greater influence on CS when EC is lower. This finding presents empirical evidence indicating a negative moderating effect of EC on the relationship between PU and CS.

TABLE 4: Hypotheses testing results.

Hypotheses	Relationships	Path coefficients (β)	*t*-statistics	*p*	Supported
H1	PU -> CS	0.152	2.609	0.009	Yes
H2	PEOU -> CS	0.238	4.502	0.000	Yes
H3	CS -> CI	0.355	6.942	0.000	Yes
H4	EC × PU -> CS	-0.139	2.328	0.020	Yes
H5	EC × PEOU -> CS	-0.041	0.758	0.449	No

CI, continuance intention; PEOU, perceived ease of use; PU, perceived usefulness; EC, expectation confirmation; CS, customer satisfaction.

Discussions and implications

Our study offers an in-depth assessment of the factors influencing customers' intentions to continue using FinTech services in the context of an emerging economy, such as Ethiopia. Integrating TAM and ECM advances our understanding of how PU, PEOU, CS and EC interact to influence customer behaviours. This study provides new insights into customer retention strategies, particularly in places where FinTech acceptance is still in its early stages, by including EC as a moderating factor between TAM, and customer satisfaction.

The study found that PU has a statistically significant impact on CS. The positive connection between PU and CS suggests that users who identify significant benefits and augmentations in their financial management because of FinTech tend to express higher satisfaction levels. This aligns with previous studies that suggest PU is a significant predictor of technology adoption and continual usage (Jangir et al., 2023; Yuan et al., 2016). The study also revealed a statistically significant positive effect of PEOU on CS,

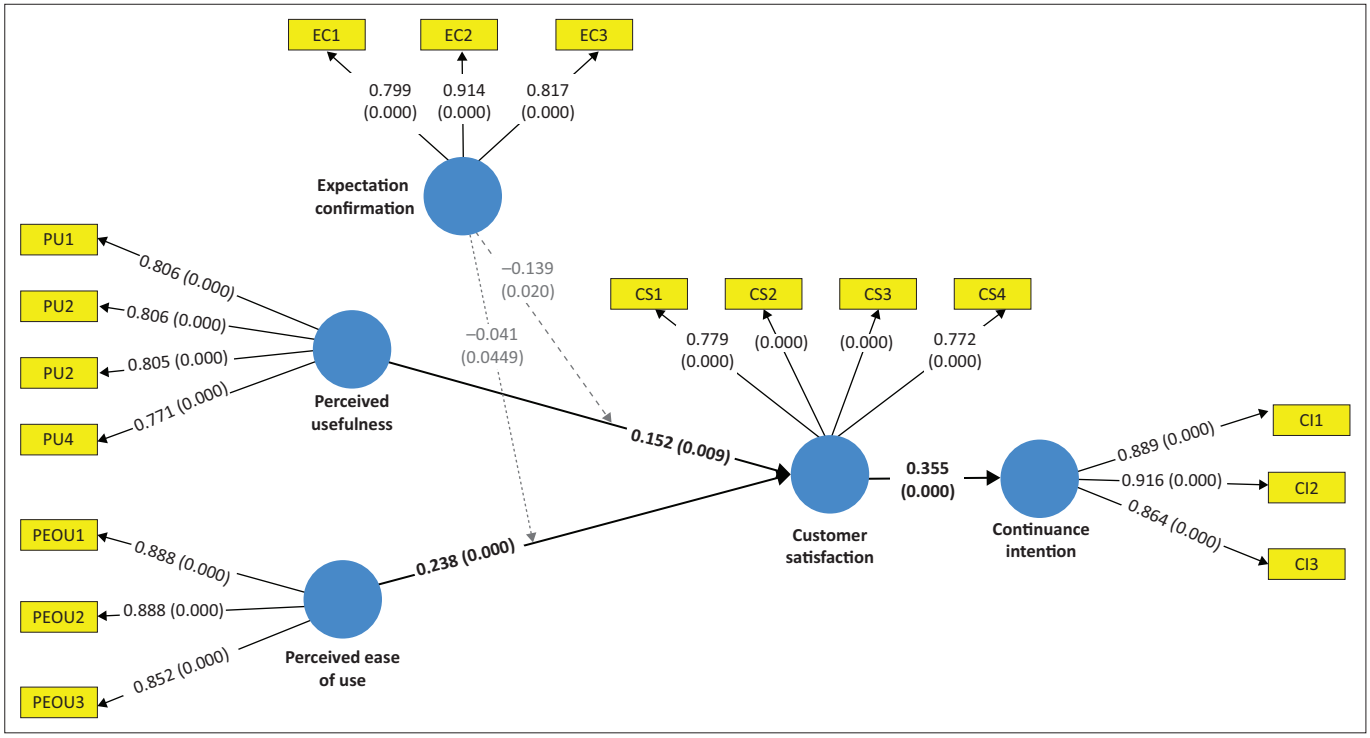
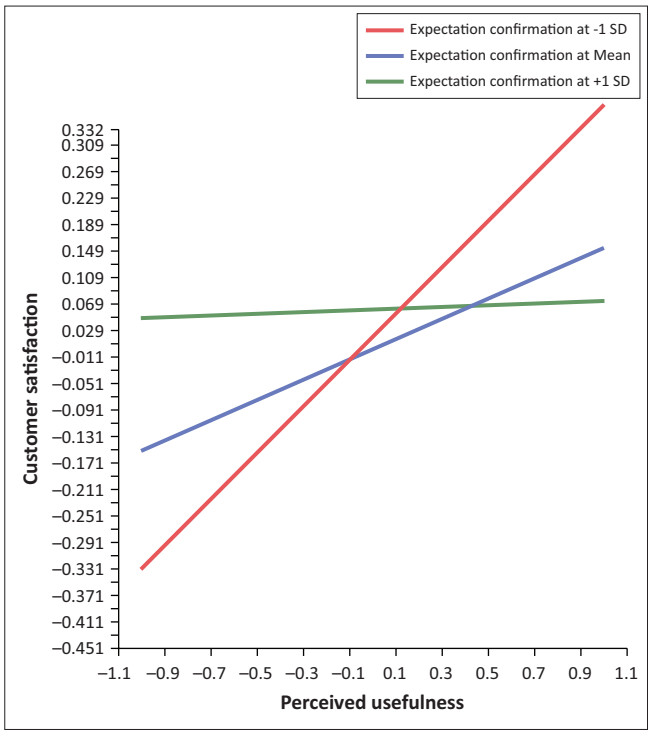


FIGURE 2: The results of the research model.



SD, standard deviation.

FIGURE 3: Moderating effects of expectation confirmation on the relationship between perceived usefulness and customer satisfaction.

suggesting that as FinTech becomes easier to use, customer satisfaction increases. The findings align with existing literature, indicating that PEOU is a significant predictor of satisfaction, especially in emerging markets where technological barriers may impede user adoption (Kumar et al., 2018; Zhang et al., 2018).

Moreover, our study found a positive and significant impact of CS on the intention to continue using FinTech. This means satisfied customers are more likely to continue using these financial technologies. The results support the idea that customer satisfaction is a crucial factor in users' intentions to continue using technology, which is consistent with prior studies (Gupta et al., 2020).

A key contribution of our study is the exploration of EC as a moderating factor in the relationship between TAM and CS. Our findings demonstrate the regulatory function of ECM on TAM, showing that EC significantly moderates the relationship between PU and CS. Even when customers perceive FinTech as highly useful, unmet expectations can reduce satisfaction, indicating that ECM regulates the impact of unmet expectations on satisfaction levels. This finding suggests that the management of customer expectations is essential for maximising satisfaction within Ethiopia's FinTech sector, which has characteristics of a monopolistic market.

In contrast to our expectations, we found no significant moderating influence from EC on the link between PEOU and CS. This suggests that when customers use FinTech, PU comes first and PEOU comes second. This implies that PU largely dictates the necessity for customers to use it, while PEOU only greatly affects customer satisfaction. In the meantime, PEOU has a direct correlation with satisfaction, regardless of the user's prior expectations; this could also be because PEOU is an easily identifiable element of a service, allowing consumers to judge the platform's complexity or simplicity from the start. Perceived ease of use, unlike PU, is a tangible aspect of the user interface and experience, less susceptible to expectations. Previous research (Zhang et al., 2018) has found that PEOU is a crucial factor in determining satisfaction with technology adoption.

Theoretical contributions

Our study integrates the TAM and the ECM to examine the continuance intention to use FinTech in Ethiopia, an emerging economy and provides three important theoretical contributions: Firstly, our study validates the well-established TAM and ECM framework (Bhattacherjee, 2001; Davis, 1989) and confirms that PU and PEOU positively and significantly affect CS. This finding is consistent with prior studies that have revealed the importance of these factors in technology adoption and continuance literature (Jangir et al., 2023; Zhang et al., 2018). The positive correlation between CS and CI also aligns with previous research in other technological domains, which suggests that satisfied customers are more inclined to use FinTech (Gupta et al., 2020). The findings confirm all hypotheses of the model; however, they do not support the moderation effect of EC between PEOU and CS in using FinTech. The validated research model of this study offers a theoretical foundation for predicting the customer's intention to continue using FinTech.

Secondly, our study's novel theoretical contribution is exploring EC as a moderating factor. Unlike prior studies, which typically focus on the mediating role of ECM between TAM and satisfaction (Akhter et al., 2022), our findings reveal that in monopolistic environments, such as Ethiopia's banking sector, ECM plays a more significant regulatory role between TAM and satisfaction, particularly in moderating the relationship between PU and CS. Previous TAM-ECM research has not explored this moderating role, highlighting that even when customers perceive FinTech services as useful, unmet expectations can reduce satisfaction.

Thirdly, our study extends the TAM-ECM model to the Ethiopian FinTech sector, thereby broadening the application of these models to emerging economies characterised by limited digital infrastructure and technological literacy. This contribution addresses a gap in the literature concerning the adoption and retention of FinTech services in the banking sector in developing countries, establishing a foundation for future research in similar contexts.

Managerial implications

The results of our study offer practical insights for banking managers and FinTech providers, particularly in emerging

economies such as Ethiopia, where the adoption of digital financial services is growing but still faces significant barriers.

Firstly, the substantial influence of PEOU on CS highlights the need to design intuitive and user-friendly FinTech platforms. Managers should focus on simplifying the user interface and making the system accessible to customers of various levels of digital literacy. User-friendly designs can boost satisfaction and foster long-term involvement, especially in sectors where sophisticated technologies may prevent widespread adoption.

Secondly, as PU drives customer satisfaction, FinTech providers should communicate their services' tangible benefits. Showing how FinTech solutions make payments, transactions and loan administration quicker, faster and more convenient can boost customer satisfaction and encourage continuing use. Marketing and customer education can highlight these practical benefits to show users how FinTech may improve their daily financial transactions.

Thirdly, the results demonstrate that EC moderates the correlation between PU and customer satisfaction. This indicates that even if customers regard the service as beneficial, unmet expectations might reduce satisfaction. Managers must meticulously regulate customer expectations by delivering clear and honest information regarding the capabilities and limitations of FinTech services. Exaggerating promises or establishing unattainable expectations may result in dissatisfaction, even if the service performs well.

Fourthly, the positive association between customer satisfaction and continuance intention suggests that satisfied customers are more likely to remain loyal to FinTech platforms. To keep customers satisfied, FinTech companies should consistently improve the quality and reliability of their services. Regular updates, proactive customer service and addressing user feedback can all help to ensure long-term satisfaction and retention. Additionally, as an emerging country, Ethiopian banking authorities must actively support and promote FinTech by developing policies and guidelines that ensure the implementation of solid safety measures. A secure regulatory environment will be created, allowing FinTech providers and clients to confidently use the service.

Limitations and future research

Our study presents certain limitations that must be considered in future research. Firstly, while the study integrated the TAM and ECM frameworks, it primarily examined PU, ease of use, EC and customer satisfaction based on the prior literature. Studies in the future can include additional factors such as trust, perceived risk and financial literacy to offer a more wide-ranging understanding of users' continued FinTech usage. Secondly, this study solely examines FinTech usage among bank customers in Ethiopia, an African developing country. While the findings offer valuable insights into contexts similar to Ethiopia, they may not be applicable to more developed economies because of differences in digital infrastructure and user behaviour. To improve the findings' generalisability, future research should investigate FinTech adoption in developed countries. Furthermore, comparative evaluations of nations with varying levels of FinTech development could provide a thorough understanding of global FinTech trends and their implications for different market conditions.

Conclusion

The primary objective of this study was to examine the crucial factors influencing customers' continued intention to use FinTech in the Ethiopian banking sector, employing an integrated model that merges TAM and ECM. The study intended to fill a research gap by investigating how customer satisfaction, PU, PEOU and EC influence the continuing usage of FinTech. The findings reveal that PU and PEOU significantly enhance customer satisfaction, which is a primary determinant of continuance intention. Particularly, the study identifies a unique regulatory role of EC, which moderates the relationship between PU and satisfaction. This highlights the importance of managing user expectations in monopolistic markets, where unmet expectations can diminish satisfaction despite high PU. This insight is critical for FinTech providers aiming to enhance user retention by aligning service performance with realistic expectations.

These findings contribute to the current literature on technology adoption, particularly in emerging economies such as Ethiopia, where digital infrastructure and market dynamics differ meaningfully from those in more industrialised markets. This insight broadens the theoretical application of ECM by providing a deeper understanding of user behaviour in markets with limited competition and fewer customer alternatives while also offering significant managerial implications. FinTech providers should prioritise user-friendly design to improve ease of use while also emphasising the practical benefits of their services to increase PU. Furthermore, clear communication of service capabilities is essential to managing customer expectations, preventing dissatisfaction and ensuring customer satisfaction. Consistently enhancing service quality, informed by client feedback, is essential for cultivating long-term user retention in the FinTech industry. Therefore, as the FinTech industry continues to grow in emerging economies, these insights will be valuable for both academic research and practical application in shaping the future of digital financial services in Ethiopia, Africa and worldwide.

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Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

A.A.S. and S.W. conceptualised the study and methodology, collected and analysed the data and wrote the original and

revised manuscripts. N.Z. performed the statistical analysis, curated the data and supervised the study. L.W. designed the study, conducted the data analysis and interpretation and wrote the original and revised manuscripts. All authors have read and approved the final version of the manuscript.

Ethical considerations

Ethical clearance to conduct this study was obtained from the Beijing Jiaotong University School of Economic and Management.

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Data availability

The data that support the findings of this study are available from the corresponding author, A.A.S., upon reasonable request.

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