Journal of
Risk and Financial Management

MDPI

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The Moderating Effect of Perceived Risk on Users' Continuance Intention for FinTech Services

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Abstract: The study's aim is to investigate how FinTech users' perceived risk influences their continuance intention to use FinTech services. The new model, which was based on the Expectation Confirmation Model, was created to achieve the study's aim. The Partial Least Square Structural Equation Model was used to investigate the proposed model and the relationship between the adopted constructs. The sample consists of 802 individual survey responses from northern India from April to June 2022. The proposed model explains 45.4% of the variance in the continuance intention of FinTech users, which is significantly influenced by perceived usefulness and satisfaction. Furthermore, perceived risk, as a moderator, significantly moderates continuance intention through satisfaction and satisfaction through confirmation. However, perceived risk was found to have an insignificant moderating effect on the relationship between perceived usefulness and satisfaction as well as perceived usefulness and continuance intention. The findings provide insights to FinTech service providers about the factors that influence users' intent to continue using FinTech services.

Keywords: FinTech; perceived risk; continuance intention; Expectation Confirmation Model; moderator; PLS-SEM

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Citation: Jangir, Kshitiz, Vikas Sharma, Sanjay Taneja, and Ramona Rupeika-Apoga. 2023. The Moderating Effect of Perceived Risk on Users' Continuance Intention for FinTech Services. *Journal of Risk and Financial Management* 16: 21. https://doi.org/10.3390/jrfm16010021

Academic Editor: Sisira Colombage

Received: 26 November 2022
Revised: 21 December 2022
Accepted: 26 December 2022
Published: 29 December 2022

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1. Introduction

Rapid advancements in information technology have permeated almost every aspect of business. Financial services, as an important part of society, have expanded into new dimensions and ventured into new areas. Financial technology, a term that combines finance and technology, has been in use since the late twentieth century and has recently grown in popularity due to global FinTech development (Rupeika-Apoga and Thalassinos 2020). In India, the FinTech industry has expanded into numerous sub-sectors that provide services ranging from payments to wealth management to regulatory technology. Previous FinTech research has focused on the effects of factors that can influence individual FinTech adoption, such as benefits, social influence, efforts, usefulness, ease, functionality, security, and safety (Bayram et al. 2022). However, nearly a decade after the introduction of FinTech in payment systems to retailers, little thought is given to the factors that confirm the continued use of FinTech in day-to-day payment mechanisms used by individuals.

The rise in FinTech services necessitates an examination of the factors that lead to individuals' continued use of such services. The need is further highlighted in light of cutting-edge developments in the industry (Rupeika-Apoga and Wendt 2022). The mobile internet has expanded and provided this platform with a new enabling environment in which to flourish (Jumaan et al. 2020). People now use FinTech for almost all types of financial transactions, from grocery shopping to online shopping to paying legal fees, which has resulted in significant improvements in the quality of services available in FinTech (Khuong et al. 2022).

Several studies on FinTech adoption have previously been conducted in India (Izzo et al. 2022; Karim et al. 2022). Customers' perceptions of risk, whether financial, legal, security, or activity-based, influence their intent to use FinTech services (Hodula 2023).

According to previous research, risk is regarded as the most important factor influencing users' intentions to use FinTech (Dzandu et al. 2022).

Even after a decade of use, the acceptability and continuous use of FinTech by individuals remain a source of concern for FinTech stakeholders and investors (Imam et al. 2022). The COVID-19 pandemic, as well as government support and motivation, has increased payment system adoption (Banna et al. 2022), but the numbers continue to fluctuate. Facilitating conditions are required for effective FinTech adoption in countries such as India (Pizzi et al. 2021). This study, along with previous studies, attempts to investigate the factors that may influence consumers' continued use of FinTech. According to previous research, there appears to be a gap in the dimensions that can moderate users' intentions to continue using FinTech services.

Expectancy of performance and effort, social influence, and facilitating conditions all have a significant impact on adoption intention, and uncertainty avoidance has a moderating effect on facilitating conditions and user intention (Alkhwaldi et al. 2022). Electronic word of mouth is also considered to be a significant moderator in the relationship between perceived usefulness and the decision of the moderator to use FinTech (Al-Okaily et al. 2021). Trust and social influence are two other factors that influence the use of FinTech (Al Nawayseh 2020). The authors discovered that perceived risk has not been studied as a moderator in continuous intention to use FinTech in the context of this discussion.

The study's aim is to investigate how FinTech users' perceived risk influences their intentions to continue to use FinTech services. Unlike previous studies on FinTech adoption and continuance intention (Banna et al. 2022; Alkhwaldi et al. 2022; Al-Okaily et al. 2021; Al Nawayseh 2020), this study employs perceived risk (PR) as a moderator in the Expectation Confirmation Model (ECM) to determine whether perceived risk can moderate continuous use. This is more useful to FinTech service providers because they are the ones who are most concerned about the factors that can prevent fluctuations in the number of customers for a service. Some FinTech companies have invested heavily in various platforms, but the usage of such platforms is steadily declining (Langley and Leyshon 2021). Hence, the continuous intention of a customer to use FinTech services is critical to the profitability, growth, and expansion of such businesses.

To achieve a study aim, we modified ECM by including perceived risk as a moderator in the model. Our primary focus was on examining the moderating effect that perceived risk can play in a customer's intention to continue using FinTech services as well as their satisfaction with those services. This study is based on data from an online survey of 802 Fintech users in northern India conducted in 2022.

We discovered that perceived usefulness, satisfaction, and confirmation all have an effect on continuance intention in FinTech services. According to our proposed model, the explanatory power of continuance intention was 45.40%, indicating a strong effect of satisfaction and perceived usefulness on continuance intention. It significantly moderates the continuance intention through satisfaction and satisfaction through confirmation by intensifying the results in the extended model with perceived risk as a moderator. This study recognizes that perceived risk is not only a measure of behavioral intention or technology adoption but also a moderator of an individual's postadoption behavior.

The article is structured as follows. Section 2 contains a review of the literature, which we used to develop the theoretical framework and hypotheses, and Section 3 discusses the research methodology used. Section 4 presents the research findings. Section 5 discusses the scientific and practical implications of the study findings. Section 6 summarizes the findings and offers suggestions for future research.

2. Literature Review and Hypotheses Development

2.1. Continuance Intention for FinTech Services through the Expectation Confirmation Model Prism

FinTech is a blend of two different words, i.e., "finance" or "financial" and "technology." There is a common understanding of what the term "FinTech" means; however,

there is no universally accepted definition of the term (Varma et al. 2022). Fintech combines various technologies to solve a problem in the finance sector (Muganyi et al. 2022). It includes not only the services, products, or applications, but also the various models and processes that are used to deliver end-user solutions (Dzandu et al. 2022; Herdinata and Pranatasari 2022). FinTech refers to innovative financial services that use technology to create disruptive new trends in services or rewrite financial services to make them more valuable, reasonable, and secure. It has a positive impact on both the economy and the consumer. For the consumer, it provides an efficient and effective user experience, user-friendly designs, and improves the ability to acquire information in real time and in a simple manner (Memon et al. 2021). Previous research has found that FinTech has contributed to economic development by creating jobs and increasing GDP (Herdinata and Pranatasari 2022). In the next three to four years, it is expected that GDP in emerging economies will increase by around 6%, with the creation of more than 90 million jobs through FinTech (Lyons et al. 2022).

The rapid adoption of FinTech over the last decade demonstrates that it is here to stay and thrive. FinTech's adoption has piqued the interest of various consulting behemoths, which have conducted research in the field. Ernst and Young discovered that more than 60% of people in 27 different countries have adopted FinTech, and that adoption rates are even higher in societies where there is a high level of awareness (Ernst & Young 2019). In the MENA region, Deloitte conducted a similar study and discovered that more than 80% are ready or willing to adopt FinTech services for banking purposes (Deloitte 2020). However, adoption varies by country due to different conceptions, levels of awareness, perceptions, and facilitating conditions. Adoption rates in China and India are the highest, while advanced economies such as Japan and France have very low adoption rates of around 30% (Ernst & Young 2019). Financial demands, the absence or scarcity of basic banking services and infrastructure, funds remittance services, growth in mobile internet and payment services (Hasan et al. 2021), high service costs of existing mechanisms, persuading and supportive government regulation (Li et al. 2022) are associated factors.

According to Rupeika-Apoga and Wendt (2021), the general idea of FinTech disrupting the (traditional) finance industry, as purported in the literature and public debate, was not confirmed in their study, as study respondents supported integration and collaboration between traditional banks and FinTech companies. FinTech is seen as a driving force for innovation and modernization in the entire finance sector, rather than as a disruptive force. In order to reduce costs, improve systemic financial stability, and mitigate the negative externalities of disruption and competition, incumbent banks are interested in collaborating with FinTech firms (Varma et al. 2022). As a result, according to Varma et al. (2022), the disruptive innovation theory is not fully applicable to the development of financial markets because incumbents are interested in collaboration.

In 2021, the primary concerns of FinTech companies were the availability of qualified employees and/or experienced managers, as well as international expansion (Rupeika-Apoga and Wendt 2022). This suggests that the primary challenges for the FinTech industry are similar to those faced by the traditional financial industry (Kaur et al. 2021). The FinTech industry anticipates improved regulatory support, such as a more realistic sandbox approach and a willingness to learn about new business models from regulators, as well as more flexible and open communication (Rupeika-Apoga and Wendt 2022).

According to Bhatnagar et al. (2022), India is recognized as a strong FinTech hub, and as the Indian entrepreneurial landscape develops further, more businesses will be created and supported by more investors. The findings of their study confirm that, depending on an investor's investment horizons, the Indian FinTech market can generate high returns for risk-averse individuals.

According to the findings of the Kaur et al. (2021) study, customers in India's northern region are genuinely satisfied with the quality of digital banking services. Overall, the study's findings show that 'Reliability' has a significant impact on customer satisfaction, followed by 'Tangibility' and 'Responsiveness'. While providing digital banking services, all

banks should provide accurate, reliable information, timely updates, account maintenance, and error-free transactions, according to the study (Kaur et al. 2021).

Furthermore, whether or not consumers' needs are met determines the level of technological adaptation. Are customers willing to continue using current services or purchase new ones? The expectation confirmation theory is widely used to evaluate consumer satisfaction and repurchase behavior (Dabholkar et al. 2000). The main concept of expectation confirmation theory is that consumers would confirm their pre-purchase expectation with post-purchase perceived performance to determine their level of satisfaction and then influence their repurchase intention (Tsai et al. 2020).

Bhattacherjee (2001) created the Expectation Confirmation Model (ECM) by modifying the Expectation Confirmation Theory. The resulting model is cognitive in nature and explains a cognitive process that an individual goes through when deciding whether or not to continue using information technology (Bhattacherjee 2001). The model investigates long-term factors that support individuals' decisions to use technology again and again (Alkhwaldi et al. 2022). It consists of four factors that are directly related to an individual's attitude, namely, confirmation (comparison of actual and expected performance), perceived usefulness (benefits of technology that a user receives), satisfaction (feelings towards a technology), and finally, continuance intention (users' intention to continue using technology) (Bhattacherjee 2001). Figure 1 depicts the conceptual framework of ECM.

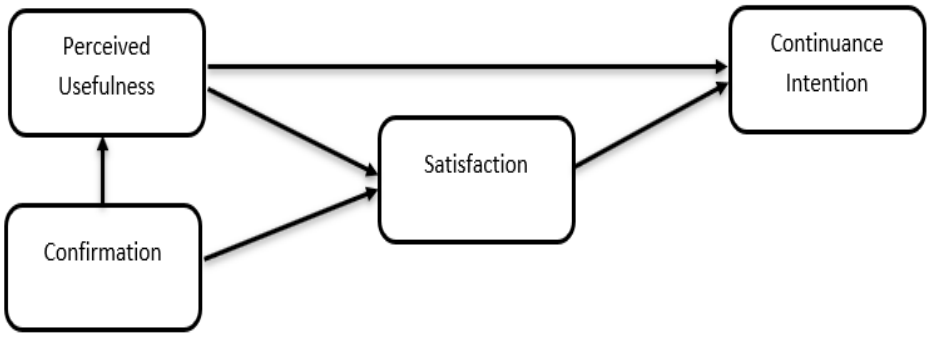

Figure 1. A framework of Expectation Confirmation Model. Source: developed by the authors based on Bhattacherjee (2001).

The ECM is used in information technology continuity research. It is considered one of the most vigorous methods and is adopted for research in various fields such as M Health (Sheng et al. 2021), M banking (Suryanto et al. 2020; Xia et al. 2022), E-Learning (Shiau et al. 2020), smartphone applications, Internet service on mobile devices (Kijkasiwat 2021; Shiau et al. 2020), online travel apps (Xiang et al. 2021) and mobile-internet sites (Shiau et al. 2020). The model is not without criticism, as it has a low predictive power (Bhattacherjee 2001) and frequently fails to explain the critical factors that are responsible for technological advancement (Li and Xu 2021; Wang et al. 2021).

Perceived risk refers to the negative thoughts or volatility that a customer experiences when purchasing an item (Ammann and Schaub 2021). It arouses negative emotions, which alter behavioral intentions (Udo et al. 2010). Failure in the system can increase perceived risk in technology-dependent services. A user may perceive various types of risks, such as personal, technical, economic, psychological, and privacy risks (Liebermann and Stashevsky 2002; Liu et al. 2020; Udo et al. 2010), which can reduce satisfaction with service quality (Zhang and Prybutok 2005). Several studies in the past have shown that perceived risk has a negative effect on an individual's behavioral intention (Pavlou 2003; Slade et al. 2015; Tran 2020). When people are unable to accommodate any vague and uncertain situation, they are more likely to avoid such situations (Hofstede 1980). When customers realize that a FinTech service can have negative or unwanted consequences, their satisfaction drops, and they avoid using FinTech services (Kaur et al. 2021).

2.2. Hypotheses

Confirmation (Co) refers to a user's perception of the similarity between two performances, i.e., the actual and expected performance of a technology (Bhattacherjee 2001). According to the ECM, an individual experiences cognitive dissonance or mental tension if his expectations prior to accepting a technology are not met, and if such expectations are met, the level of perceived usefulness and satisfaction increases. According to the study, a FinTech service user will have a higher level of usefulness if the technology can meet his expectations prior to adoption or acceptance of the technology. Previous research has shown that confirmation establishes users' motives, which in turn informs their intention to continue (Nasution et al. 2022; Shiau et al. 2020). As per the previous research and the proposed model, it is expected that perceived usefulness (PU) and satisfaction (S) are increased by confirmation (Co). Considering this, we proposed the following hypotheses:

H1a. *Confirmation (Co) positively influences Perceived Usefulness (PU).*

H1b. *Confirmation (Co) positively influences Satisfaction (S).*

Perceived Usefulness (PU) denotes how users perceive the benefits of using technology (Bhattacherjee 2001). It is extrinsic motivation that creates a user's or customer's intention to use technology (Hasan et al. 2021), in which the user or customer believes that using technology will improve their performance. As a result, this can positively affect or influence an individual's attitude toward adopting and using technology (Bhattacherjee 2001). Therefore, it is reasonable to assume that if FinTech users believe the technology is beneficial to them, they will continue to use it. According to previous research, perceived usefulness is a critical precursor for both satisfaction (S) and continuation intention (CI) (Dehnert and Schumann 2022). Hence, we propose the following hypotheses:

H2a. *Perceived Usefulness (PU) positively influences Satisfaction (S).*

H2b. *Perceived Usefulness (PU) positively influences Continuance Intention (CI).*

Satisfaction is defined as an individual's emotional reaction to their previous experience with technology (Bhattacherjee 2001). The user evaluates his or her experience based on his or her emotional reaction to the performance of a technology (Wu et al. 2022). According to ECM, it is a significant component of continuance intentions, and previous research has also suggested that it is a necessary precursor to continuance intention (Sheng et al. 2021; Xia et al. 2022). Empirical research on FinTech adoption has shown that satisfaction in the behavior of individuals after adoption or acceptance of FinTech can be predicted (Abdeldayem and Aldulaimi 2021; Setiawan et al. 2021). Based on this, the study predicts that a satisfied FinTech customer is more likely to continue using the service than a dissatisfied or unsatisfied customer. Hence, the following hypothesis is formulated:

H3. *Satisfaction positively (S) influences Continuance Intention (CI).*

When a customer, investor, or user chooses a technology, they experience indecision (Unsal and Brodmann 2021). Risk is inevitable; however, risk can easily lead to higher levels of problems, affecting user satisfaction, usefulness, and attitude toward a technology (Wu et al. 2021). Perceived risk has also been used as a moderator of the relationship between expected performance and behavioral intention (Herrmann and Masawi 2022). According to other research studies, a user's perception of risk makes them less likely to use and adopt a technology (Lu et al. 2020; Ryu 2018). However, it is regarded as an important factor that can influence user intentions regarding technology adoption (Herrmann and Masawi 2022; Mangini et al. 2021). There has been no research into whether perceived risk acts as a moderator for any of the ECM variables. The current study tested the ECM in relation to FinTech services, with perceived risk added as a moderating factor to the model. In this regard, the study proposes the following hypotheses:

H4a. *Perceived Risk (PR) moderates the relationship between Perceived Usefulness (PU) and Satisfaction (S).*

H4b. *Perceived Risk (PR) moderates the relationship between Confirmation (Co) and Satisfaction (S).*

H4c. *Perceived Risk (PR) moderates the relationship between Perceived Usefulness (PU) and Continuance Intention (CI).*

H4d. *Perceived Risk (PR) moderates the relationship between Satisfaction (S) and Continuance Intention (CI).*

The Expectation–Confirmation Model was chosen for this study to investigate the factors influencing the intention to continue to use FinTech services. Figure 2 depicts the conceptual model created with the hypotheses and variable relationships. The base ECM is kept as is, with the addition of perceived risk as a moderator, moderating the relationship between other ECM constructs. The model depicts the relationship between the constructs used and the proposed hypotheses.

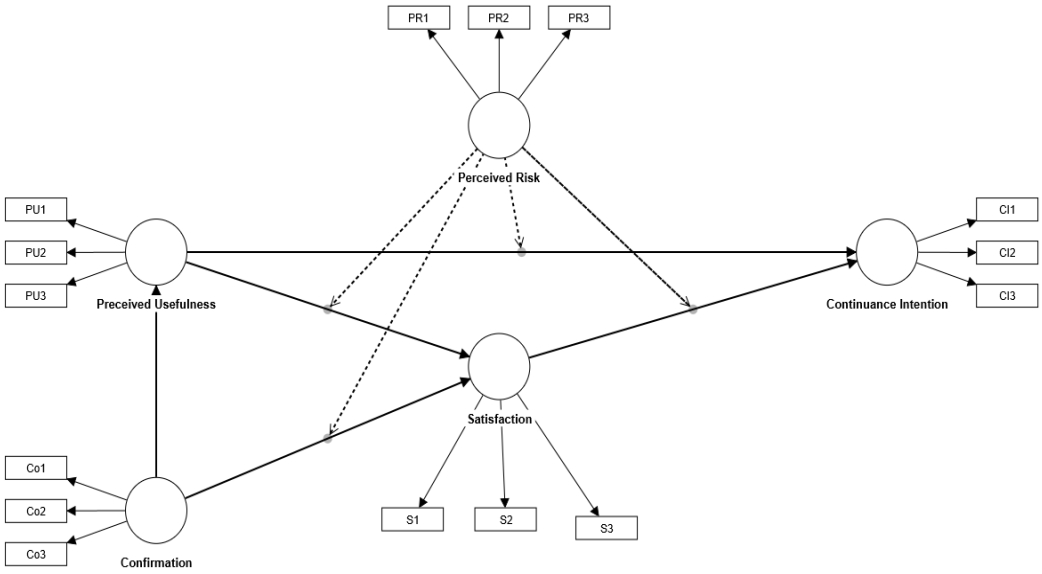

Figure 2. A framework for the moderating effect of perceived risk on Fintech via the Expectation Confirmation Model prism. Source: authors' own work.

3. Research Methodology

3.1. Sampling and Data Collection

The number of active FinTech users in India is not publicly available. Snowball sampling was used to collect data from respondents because it is commonly used when the population sample is unknown (Johnson 2014). The questionnaire was distributed via the internet, email, and social media websites. Respondents in our contacts were approached first and asked to either provide information about FinTech users or circulate the questionnaire to them. The survey was conducted between April and June of 2022. A total of 1150 people from Northern India were approached to complete the questionnaire. In total, 849 responses (73.82% response rate) were received. Following that, data validation was performed, and an additional 47 responses were discarded, leaving the analysis with 802 final responses. This number of responses is more than ten times the total number of paths in the conceptual model. The minimum number of responses required to validate a model in PLS-SEM should be at least 10 times the total number of paths in the model (Hair et al. 2019). We used the Cochran formula for unknown populations to calculate sample size. The sample size at the 95 percent level of significance was 1046, so we distributed the questionnaire to 1150 people to achieve that size through snowball sampling. Table 1 displays the descriptive statistics.

Table 1. Descriptive statistics.

Demographics	No. of Participants	Percentage
Gender		
Male	453	56.48%
Female	349	43.52%
Age (in years)		
18–25	157	19.58%
25–32	187	23.32%
33–39	257	32.04%
40–47	116	14.46%
47 and above	85	10.60%
Annual Income (in INR)		
Less than 3 lacs	311	38.78%
More than 3 lacs	491	61.22%

Source: Author Compilations.

3.2. Measures and Study Design

The study's design and variables were adapted from previous research in this field. The study design consists of five constructs that are measured by 15 measures or statements drawn from previous studies. Table 2 depicts the constructs, measures, and sources used to develop the measures. A seven-point Likert scale was used to evaluate participants' responses to each question, with 1 indicating strongly disagree and 7 indicating strongly agree. A 7-point scale, according to Dillman et al. (2014), provides greater variance among the measures and a much more comprehensive range of options. The respondents are given two moderate opinions, two extreme opinions, two intermediate opinions, and one neutral opinion on a 7-point scale. Furthermore, previous research has shown that a 7-point scale is required to ensure scale reliability and validity (Foddy 1993).

Prior to distributing the questionnaire to respondents, a pre-test was conducted to ensure its prima facie validity. A pilot study with 150 respondents was conducted, and the Cronbach alpha score for reliability was 0.892, indicating that the questionnaire was reliable. The questionnaire's face validity was tested with five faculty members and 15 students. The terms used were clear and easy to understand, according to the respondents.

PLS-SEM (Partial Least Square Structural Equation Modelling) was used to evaluate the proposed research model and hypotheses. The data were analyzed using the Smart PLS 4 software. This is the appropriate method for investigating a developed conceptual model for prediction and ensuring that key target constructs, such as "dependent variable," are clear (Hair et al. 2019).

Table 2. Measurement items.

Measures and Sources		
Construct	**Measure**	**Source**
Confirmation	My expectations were confirmed by FinTech services (Co1).	(Boakye et al. 2022)
	FinTech exceeded my expectations (Co2).	
	My FinTech experience exceeded my expectations (Co3).	
Perceived usefulness	FinTech improves my efficiency (PU1)	(Hasan et al. 2021)
	I can complete tasks quickly with the help of FinTech services (PU2).	
	FinTech enhances my productivity (PU3)	
Satisfaction	I am delighted with the FinTech Services (S1)	(Najib et al. 2021)
	I am satisfied with the FinTech services (S2)	
	I am contented with the FinTech services (S3)	
Continuance Intention	I intend to continue using FinTech services (CI1).	(Bhattacherjee 2001)
	In the future, I intend to continue using FInTech services (CI2).	
	If I could, I would continue to use FinTech services (CI3).	
Perceived Risk	I am concerned that system failure may have an impact on FinTech (PR1).	(Reith et al. 2020)
	I believe that my personal information can be disclosed to others (PR2).	
	If I use FinTech, I am concerned that others will be able to access my account (PR3).	

Source: Authors' Compilations.

4. Results

4.1. Measurement Model Assessment

The factor loadings are shown in Table 3.

Table 3. Factor loadings.

Outer Loadings					
	Continuance Intention	**Confirmation**	**Perceived Risk**	**Perceived Usefulness**	**Satisfaction**
CI1	0.891				
CI2	0.913				
CI3	0.927				
Co1		0.932			
Co2		0.924			
Co3		0.882			
PR1			0.907		
PR2			0.951		
PR3			0.939		
PU1				0.889	
PU2				0.901	
PU3				0.883	
S1					0.924
S2					0.921
S3					0.939

Source: Authors' Compilations.

The evaluation of the measurement model shows that the composite reliability, consistency reliability of the internal model, and reliability coefficient (rho_A) for reflective constructs (Table 4), are in the prescribed range of 0.70–0.95 (Hair et al. 2019). Convergent validity was tested using AVE (Average Variance Extracted), and all of the reflective constructs in the current model exceed the prescribed critical value of 0.50.

Table 4. Construct validity and reliability.

	Cronbach's Alpha	Composite Reliability (rho_A)	Composite Reliability	AVE
Co	0.9	0.902	0.937	0.833
CI	0.897	0.897	0.936	0.829
PR	0.925	0.927	0.952	0.869
PU	0.871	0.876	0.92	0.794
S	0.92	0.92	0.949	0.862

Source: Authors' Compilations.

The discriminant validity of correlations was determined using the Heterotrait-Monotrait (HTMT) ratio (Table 5). To establish discriminant validity, the HTMT was also within the confidence intervals.

Table 5. Discriminant Validity (HTMT and Fornell–Lacker criterion).

	Heterotrait-Monotrait Ratio				
	Co	**CI**	**PR**	**PU**	**S**
Co					
CI	0.39				
PR	0.492	0.649			
PU	0.321	0.514	0.503		
S	0.384	0.57	0.562	0.348	
	Fornell–Lacker criterion				
	Co	**CI**	**PR**	**PU**	**S**
Co	0.913				
CI	0.449	0.91			
PR	0.351	0.591	0.932		
PU	0.286	0.455	0.451	0.891	
S	0.251	0.418	0.418	0.313	0.928

Source: Authors' Compilations.

4.2. Structural Model Assessment

The developed model was evaluated using the guidelines outlined in "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)" (Hair et al. 2019). The model results show (Table 6) that Co has a positive effect on both PU ($\beta = 0.286$, $p < 0.001$) and S ($\beta = 0.135$, $p < 0.001$), confirming the H1a and H1b hypotheses. PU has a positive effect on CI ($\beta = 0.221$, $p < 0.001$) and S ($\beta = 0.103$, $p < 0.001$), confirming the H2a and H2b hypotheses. The analysis also shows that S has a positive effect on CI ($\beta = 0.243$, $p < 0.001$), confirming H3.

Table 6. Assessment of Structural Model.

	Path	Original Sample	Sample Mean	Standard Deviation	T Statistics	*p* Values	Result
H1a	Co -> PU	0.286	0.287	0.042	6.847	0.000	Confirmed
H1b	Co -> S	0.135	0.134	0.04	3.373	0.001	Confirmed
H2a	PU -> CI	0.211	0.328	0.052	4.656	0.000	Confirmed
H2b	PU-> S	0.103	0.376	0.05	2.427	0.015	Confirmed
H3	S -> CI	0.243	0.212	0.045	5.447	0.000	Confirmed
H4a	PR x PU -> S	0.046	0.047	0.032	1.446	0.148	Not Confirmed
H4b	PR x Co -> S	−0.105	−0.104	0.039	2.672	0.008	Confirmed
H4c	PR x PU -> CI	−0.012	−0.014	0.037	0.338	0.735	Not Confirmed
H4d	PR x S -> CI	−0.109	−0.108	0.04	2.72	0.007	Confirmed

Source: Authors' Compilations.

The moderating effect of PR was discovered during the analysis of the relationship between Co and S (β = −0.105, $p < 0.01$) and the relationship between S and CI (β = −0.109, $p < 0.01$). This confirms H4b and H4d. In the preceding relationships, negative moderation is present. The hypotheses H4a and H4c were rejected because PR has no significant moderating effect on the relationship between PU and S or on the relationship between S and CI (see Figure 3).

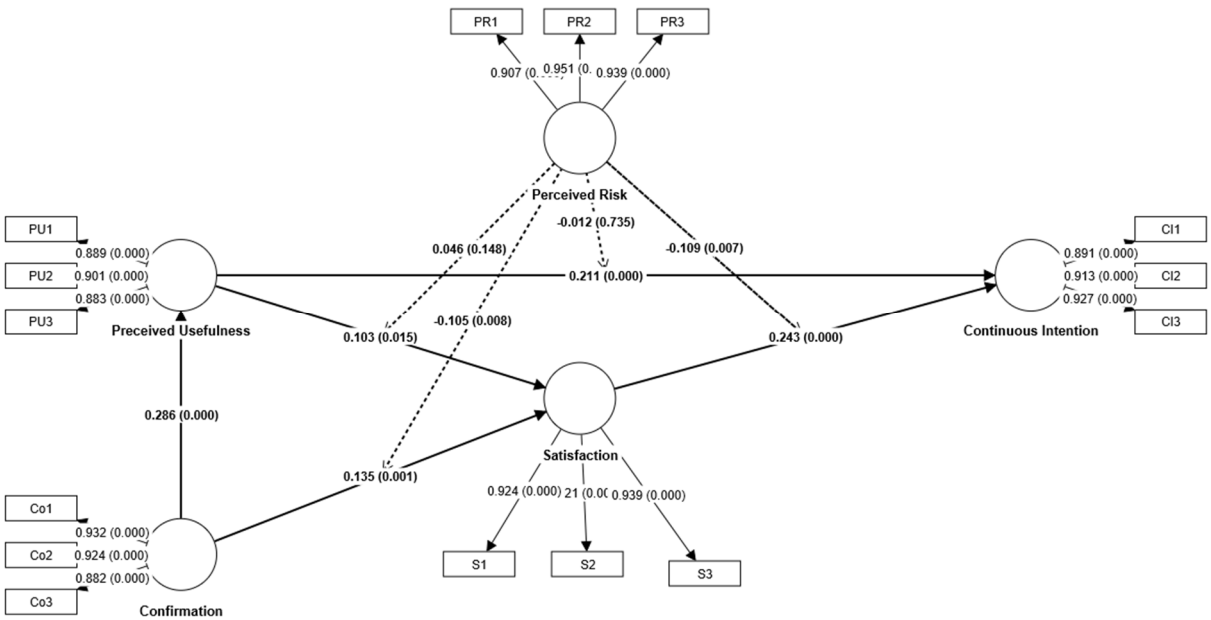

Figure 3. Structural model results. Source: Authors' Compilations.

5. Discussion

Although the Expectation Confirmation model or theory has been extensively used in the analysis of factors leading to a user's intention to continue to use a technology, the moderating effect of perceived risk has not been studied by applying ECM. Our study confirms that users' intention to continue to use FinTech services is moderated by perceived risk. The study has several scientific and practical implications for the FinTech industry.

Confirmation (Co) has a significant positive effect on perceived usefulness (PU) and satisfaction (S) from FinTech use. If an individual's expectations prior to accepting a technology are not met, he/she experiences cognitive dissonance or mental tension; if

such expectations are met, the level of perceived usefulness and satisfaction increases. According to the study, a FinTech service user will find the technology more useful if it can meet his/her expectations prior to adoption or acceptance. Previous research has found that confirmation establishes users' motivations, which form their intention to continue (Nasution et al. 2022; Shiau et al. 2020). Confirmation (C) has a significant impact on satisfaction (S).

The user's perception of the benefits of using a technology is referred to as perceived usefulness (PU). Because it is extrinsic in nature, it creates a user's or customer's intention to use technology, which the user believes will improve his/her performance (Hasan et al. 2021). As a result, perceived usefulness (PU) can influence or positively affect an individual's attitude toward adopting and using technology (Bhattacherjee 2001). The model's results are consistent with previous research, namely that PU influences both satisfaction (S) and continuance intention (CI) (Dehnert and Schumann 2022).

The user evaluates his or her experience based on his or her emotional reaction to the performance of a technology (Wu et al. 2022). This reaction is measured in this study by satisfaction (S). It is a significant component of continuance intentions, according to ECM, and previous research has also suggested the same intention (Sheng et al. 2021; Xia et al. 2022). According to earlier research (Abdeldayem and Aldulaimi 2021; Setiawan et al. 2021) and the model used for the study, satisfaction (S) has a significant impact on continuance intention (CI).

Furthermore, as an extension to the model and as a moderator, an additional construct of perceived risk (PR) was used. Risk is an uncertainty that can lead to higher levels of problems, which can easily harm users' satisfaction, perception of usefulness, and attitude to a technology. According to the findings, perceived risk moderated the relationship between confirmation and satisfaction, as well as the relationship between satisfaction and continuance intention. However, it was discovered to have a negligible moderating effect on the relationship between perceived usefulness and satisfaction, as well as perceived usefulness and intention to continue. A user with a predetermined goal and ambition may disregard the element of risk present in the technology; however, a user who has already confirmed the use of a technology may become dissatisfied if risk arises in a future course of action (Johnson 2022).

5.1. Scientific Implications

In this study, an extended version of the ECM was used, with perceived risk acting as a moderator. We attempt to provide a casual but underutilized dimension of perceived risk that can moderate a FinTech user's satisfaction level and continuance intention. To begin, we discovered that perceived usefulness, satisfaction, and confirmation all have an effect on continuance intention in FinTech services. The central variable in Bhattacherjee's (2001) Information Systems Expectation Confirmation model is satisfaction. Perceived usefulness, confirmation, and satisfaction are important determinants of technology-related continuance intention (Lee et al. 2019; Ryu 2018; Stewart and Jürjens 2018; Wu et al. 2022), particularly in finance-related technology (Coffie et al. 2022). The Dağhan and Akkoyunlu (2016) study found that confirmation has the strongest predictive effect on satisfaction and satisfaction has the strongest predictive effect on continuance intention toward online learning environments.

According to the designed model, the explanatory power of continuance intention was 45.40%, indicating that satisfaction and perceived usefulness had a strong effect on continuance intention. Our findings are consistent with those of Jumaan et al. (2020), who discovered that factors such as perceived usefulness, satisfaction, and cognitive absorption have a significant impact on mobile Internet users' intentions to continue using the service. This means that if a user's expectations are met with the actual results of post-adoption technology use, it will increase satisfaction, which will lead to continued use of technology. A narrow gap between actual and expected performance increases the usefulness of a technology for an individual, strengthening his intention to continue using the technology.

Second, it significantly moderates the continuance intention through satisfaction and satisfaction through confirmation by intensifying the results in the extended model with perceived risk as a moderator. This study recognizes that perceived risk is not only a measure of behavioral intention or technology adoption but also a moderator of an individual's postadoption behavior. Although the effect of moderation was not strong, it was significant to show that moderation exists. Further, the moderation was negative, implying that perceived risk may result in a decrease in satisfaction and the intention of an individual to continue to use a FinTech service. This indicates that FinTech users may stop using the financial services when perceived risk rises due to the involvement of other factors and expansion of FinTech. Hence, the research confirms that perceived risk can affect the level of satisfaction and attitude of individuals towards the adoption and continued use of a technology. This is consistent with the Kurniawan (2021) study, which found that one of the factors influencing online lending platform services in Indonesia is familiarity; the clearer the procedures and user interface are, the more likely the customer is to use the services.

Third, perceived risk was discovered to have a negligible moderating effect on the relationship between perceived usefulness and satisfaction, as well as perceived usefulness and intention to continue. One possible explanation is that a user with a predetermined goal to use a technology may temporarily disregard the risk element. A lack of other options, such as development mechanisms, lack of awareness, and limited substitutes may also result in a user ignoring system or technology risks. As in the case of e-learning, perceived usefulness is critical to the production of experience about technology performance (Johnson 2022). This could be attributed to the amount of disagreement among users when using technology in a specific context. When compared to the usefulness of technology or the utility it can provide, risks may be of secondary concern to users in countries where FinTech has resulted in a more robust financial system (Suryanto et al. 2020).

The findings are consistent with previous research, confirming that confirmation leads to satisfaction and perceived usefulness, which in turn explain the user's continuance intention (Alkhwaldi et al. 2022; Fernando et al. 2019).

5.2. Practical Implications

According to the findings of the study, FinTech service providers should strive to provide quality services while focusing on mitigating or eliminating risk for users. Users may be more satisfied and continue to use a service as a result of such a strategy. It was discovered that perceived risk has a significant impact on satisfaction and continuance intention. A thorough examination of the various threats that a user perceives in the use of technology, as well as their elimination by the service provider, can result in the technology's smooth adoption and continued use. This could easily be accomplished by implementing methods such as informing users about the potential risks of the service and raising awareness about risk management.

The study has a number of practical implications for academics and professionals in the diaspora. FinTech is becoming more popular in many countries, and more and more countries are embracing it. This entails expanding the existing sector and tapping into numerous opportunities ranging from increased employment to increased monetary transactions. The advancement of technologies such as FinTech paves the way for various professions, with engineering and finance being the two most important (Fülöp et al. 2022). Satisfaction plays a significant role in defining FinTech service users' intention to continue using the service. FinTech service providers should capitalize on their users' satisfaction to ensure continued use. Users' levels of satisfaction could be assessed repeatedly by service providers. This would result in the fulfillment of subscribers' needs and, possibly, long-term upgrades to services. This will increase subscriber satisfaction and retention.

6. Conclusions

The study was carried out to determine whether perceived risk can moderate the intention to continue to use FinTech services. The expectation confirmation model was modified in the study, with perceived risk added as a moderator, to investigate the factors that lead to a user's continuance intention to use a technology.

We discovered that perceived usefulness, satisfaction, and confirmation all have a statistically significant positive effect on the intention to continue using FinTech services. Perceived risk, as a moderator, is found to negatively moderate the effect of satisfaction on continuance intention and confirmation on satisfaction. However, perceived risk was discovered to have an insignificant moderating effect on the relationship between perceived usefulness and satisfaction, as well as perceived usefulness and continuance intention.

Our study is not without limitations. The theoretical framework of this study is based on a modified ECM for analyzing the continuation intentions of FinTech users. Alternatives such as cognitive absorption, control, curiosity, focused immersion, and so on may be investigated in the future. Furthermore, it would be beneficial for moderators to delve deeper into gender, income, and other demographic factors. Furthermore, more research on a national scale can be conducted to gain a better understanding of user intent. In addition, future research can be directed toward understanding how the unseen disparity between FinTech users defines their decision to continue using a technology.

Author Contributions: Conceptualization, K.J., V.S., S.T. and R.R.-A.; methodology, K.J., V.S. and S.T.; validation, K.J., V.S. and S.T.; formal analysis, K.J., V.S. and S.T.; data curation, K.J., V.S. and S.T.; writing—original draft preparation, K.J., V.S., S.T. and R.R.-A.; writing—review and editing, K.J., V.S., S.T. and R.R.-A. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Data are available from the authors upon reasonable request.

Conflicts of Interest: The authors declare no conflict of interest.

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