NAVIGATING FINTECH INNOVATION: PERFORMANCE, TRUST, AND RISK FACTORS IN UAE'S BANKING SECTOR

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ABSTRACT

This study was conducted to identify the determinants of fintech adoption in UAE financial service firms, specifically in the banking sector. Towards this direction, the study identified a set of factors such as performance expectancy, effort expectancy, facilitating conditions, perceived trust, and perceived risk as the factors affecting fintech innovation adoption. The data for this study was primary in nature; the sample used consisted of 330 managers from UAE financial services firms. Factor analysis and regression analysis were performed to arrive at the study results, which confirmed that fintech adoption has a significant positive impact on performance expectancy, effort expectancy, and perceived trust, but it has a significant negative impact on perceived risk. The results of the study recommend training employees and engaging customers for better adoption of fintech technology.

Keywords: fintech innovation; adoption; financial services; empirical

INTRODUCTION

The global financial system has experienced a tremendous transition in recent years, owing to a rise in financial innovation and broad use of information and communication technologies (ICTs). This remarkable transformation has had far-reaching consequences, improved cost efficiency, and decreased knowledge asymmetries in the finance industry (Thakor, 2019). The incorporation of Information and Communication Technologies (ICTs) into financial markets has resulted in a significant increase in global capital mobility. This advancement has not only reduced transaction costs and closed information gaps but has also

opened up new investment options on a local and worldwide scale, catering to both newbies and seasoned investors. According to Schumpeterian economics, this financial evolution plays a critical role in stimulating innovation, which, in turn, serves as a catalyst for economic growth by upsetting conventional economic structures and technologies (Gomber et al., 2017). In this context, financial development entails embracing innovation-driven advances across financial instruments, markets, and intermediation (Wang et al., 2021). Towards this direction, the financial environment has seen a significant upheaval in recent years as a result of the confluence of technical breakthroughs and their application in the field of finance, giving rise to the dynamic area known as fintech. FinTech, as defined by Milan et al. (2019), are creative enterprises within the financial industry that leverage the power of communication, the pervasiveness of the internet, and automated information processing. Fintech, in essence, uses technology to deliver new and improved financial services that upset existing financial intermediation processes (Thakor, 2019). This disruptive force alters traditional finance, promotes financial inclusion, and provides personalized client experiences (Nicoletti, 2017). Fintech is poised to improve financial sector efficiency, decrease and diversify risk, and alleviate information asymmetry (Tchamyou et al., 2019).

The rise of fintech has sent shockwaves across the established realms of financial intermediation and traditional markets, with an astonishing 88% of financial institutions recognizing the threat posed by fintech, particularly in personal finance, payments, and fund transfers (Zarrouk et al., 2021). Financial institutions must strengthen their technology capabilities and invest in fintech solutions to maintain their market position. This paradigm change has compelled traditional institutions to recognize the disruptive potential of fintech developments and devise survival measures (Goo & Heo, 2020). As a result, many researchers tried to ascertain the set of factors that lead to fintech adoption (Irimia-Diéguez et al., 2023; Firmansyah et al., 2022; Setiawan et al., 2021; Dwivedi et al., 2021; Singh et al., 2020). These studies reason out factors like performance expectancy, effort expectancy, behavioral intention, perceived ease of use, and perceived trust that impact fintech adoption. Nevertheless,

an intriguing aspect of these research studies is that they have predominantly focused on samples drawn from developed countries. There is limited knowledge regarding the factors influencing fintech adoption in businesses from emerging nations.

Additionally, in the current financial services ecosystem, adopting fintech technologies has become a critical strategic requirement for financial organizations. This transition is being fueled by several strong forces, such as the need to maintain competitiveness in a fast-paced market, the pursuit of operational excellence, and the ability to meet customers' shifting needs and expectations. In this industry that is always changing, it is crucial to understand the factors influencing how financial services organizations employ fintech technologies.

The world has witnessed an unprecedented evolution of fintech, but mostly in developed countries. The fintech revolution appears to be on track in these countries, and global legislation aims to provide full online services in the future. The role of fintech has recently evolved and has spread across developing countries, with these countries recognizing the critical role that fintech plays in achieving policy objectives. The financial services and banking sectors in developing countries adapt and evolve by exploiting internet-based digital technology, as shown by fintech, ushering in new business models and services. In the sphere of emerging countries, the Middle East and North Africa (MENA) fintech business is positioned for tremendous development, poised to take 8% of financial services revenue by 2024, principally driven by the need for a better client experience (Lee & Shin, 2018). From 2010 to 2017, the number of fintech businesses in the area increased from 91 to 839. It is worth mentioning, however, that MENA garnered just 1% of the $50 billion in worldwide fintech investment during this time. Notably, according to Anshari and Almunawar (2019), the MENA fintech industry is expected to grow by US$125 million annually through 2024, owing to increased investor interest in the region's potential fintech environment. The UAE has the region's most fintech companies and investments, with 67 fintech startups (Cavallo et al., 2019). Recognizing the importance of fintech, little research has been conducted on fintech in UAE (Bouteraa et al., 2023; Al Suwaidi et al., 2022;

Albarrak & Alokley, 2021; Zarrouk et al., 2021) that tried to examine opportunities, determinants and challenges affecting fintech adoption in UAE firms. Although few studies have been conducted on the fintech domain in UAE, nothing is known about the factors affecting fintech innovation adoption, particularly financial services firms. Therefore, this study extends its scope to understand the determinants affecting fintech adoption in financial services firms in the UAE.

From the literature mentioned above, it can be clearly ascertained that fintech has an enormous impact on developing and developed countries' banking and financial services sectors. Within the financial and banking industry, the constant introduction of technical advances, recent infrastructure expansion, and technology integration are radically redefining operations and changing client expectations (Goel et al., 2012). Significant expenditures have been focused on the financial and banking sectors to foster reinvention and increase competitiveness. Given the current wave of innovation, this study aims to investigate the factors impacting the actual consumption and acceptability of fintech services. It examines the factors influencing customer perceptions and their willingness to embrace this technology. These insights are useful not just for enticing new consumers but also for keeping existing ones.

According to Rogers (1983), "the desire of potential users to accept technical innovations and put them into practice is critical to the success and broad adoption of any technology. The scarcity of existing research on fintech services emphasizes the importance of developing a comprehensive model that identifies the fundamental perceptions and motives driving fintech adoption across a larger range of customers and services," as cited by Hasan et al. (2023). In alignment with existing literature and the research inquiries, this study aims to answer the following research questions:

RQ1: Which factors affect fintech innovation adoption in UAE financial services?

RQ2: Does performance expectancy, effort expectancy, facilitating conditions, perceived trust, and perceived risk affect fintech innovation adoption in UAE financial services?

LITERATURE REVIEW

It is asserted that fintech adoption through technological improvements might help consume financial services and enable transactions, savings, borrowing, risk management, and financial advising (He et al., 2017). While multiple fintech services are accessible and developing all the time, selective acceptance prevails, necessitating a thorough investigation of the factors impacting adoption and use. Therefore, in this section, we present the set of factors that have an impact on fintech innovation adoption.

Factors affecting the adoption of fintech in financial services firms

Adopting fintech technologies has become a major strategic necessity for financial organizations in the modern financial services ecosystem. Several compelling drivers are driving this change, including the necessity to stay competitive in a dynamic market, the pursuit of operational excellence, and the capacity to satisfy customers' ever-changing wants and expectations. Understanding the characteristics that impact the adoption of fintech technologies among financial services organizations is critical in this continuously changing market(Elsaman,2021). These factors, also known as independent variables, have a significant impact on the decisions taken by managers inside these firms regarding the integration and use of fintech solutions. The dependent variable, Fintech Adoption, represents how financial services organizations embrace and integrate fintech technologies into their operations and service offerings. Fintech adoption can take several forms, such as the incorporation of digital payment systems, the use of blockchain technology, the use of robot advisors, or the supply of online lending platforms. This study focuses on a collection of variables to acquire full knowledge of the elements driving fintech adoption.

Effort expectancy and fintech adoption

In the world of technology adoption, the ease of use (EE) aspect is critical, considerably affecting users' decisions to accept current technologies, especially fintech services. The perceived simplicity and user-friendliness of IT or information systems (IS) and the degree of

effort required for their efficient usage are all part of EE. It is closely related to the concepts of "perceived behavioral control" and "perceived ease of use" in the Theory of Planned Behavior (TPB) and the Technology Acceptance Model (TAM). EE is dominant in the early phases of technology adoption, but its influence fades once consumers have completely accepted the technology (Huynh et al., 2020).

EE is critical in the context of fintech adoption. Users are more likely to utilize fintech services if they believe they are user-friendly, require minimum effort, and are not unduly burdensome. This notion of ease of use and simplicity is critical in motivating people to experiment with and accept new financial technology. Empirical studies have continuously supported the favorable association between EE and fintech adoption (Dwivedi et al., 2016; Franks et al., 2020; Singh, 2020). These findings highlight the vital relevance of developing fintech solutions with usability in mind. A clearer, less burdensome user experience will likely improve customer acceptance and use.

Based on the literature mentioned above, we hypothesize:

H1: Effort expectancy has a significant impact on fintech adoption.

Perceived risk and fintech adoption

It significantly impacts the fears that potential adopters identify with uncertain situations (Mitchell, 1992). The Innovation Diffusion Theory (IDT) contends that adoption decisions might include outright rejections, resulting in non-adoption, hence questioning the prevalent pro-innovation bias that has characterized previous diffusion studies (Rogers, 1962). This bias assumes that innovations are fundamentally helpful and will be universally accepted, potentially ignoring instances of customer rejection and their underlying reasons. To address this, the Innovation Resistance Model (Ram, 1987) includes perceived risk as a significant aspect in explaining why certain people resist embracing innovations like mobile and Internet banking (Laukkanen, 2016). Perceived risk is becoming increasingly important in the field of fintech, as innovation frequently includes sensitive financial and data-related operations.

Consider adopting e-banking, which depends on properly handling users' personal financial data, raising worries about data privacy and security (Dynes, 2018; Eyers, 2018; Riley, 2019). Although e-Banking's permission process eliminates the need for customers to expose their login credentials, it forces dependence on third-party API providers for data exchange, which is frequently new to users. These concerns were echoed by a UK poll, which found that just 13% of respondents felt comfortable granting third parties access to their financial data (Dynes, 2018). Because of the unique nature of open banking, there are inherent risk perceptions around financial stability, data security, and responsible data sharing. In addition, it is necessary to examine performance risks (for example, worries about e-banking's appropriate operation), financial risks (for example, possible monetary losses due to faults), and privacy risks (for example, data technological protection to prevent unauthorized access or leaks). These risk perceptions significantly impact fintech adoption decisions, influencing whether consumers embrace or reject these new financial solutions. Based on the above findings, we hypothesize:

H2: Perceived risk has a negative impact on fintech adoption.

Perceived trust and fintech adoption

The dynamic interaction between perceived risk and trust has a considerable impact on adopting fintech innovations, particularly in the case of developing technologies like fintech. Perceived risk is people's worries about unknown situations, such as the possibility of financial loss when utilizing innovative financial services. However, trust is critical in alleviating these worries and encouraging the use of such technology (Elsaman et al., 2021). The initial trust paradigm, which implies that trust is not simply based on past experience but can also arise from an individual's propensity to trust or institutional cues, becomes especially relevant in this setting. For example, trust propensity, which reflects a person's intrinsic confidence in technology, is critical in forecasting fintech adoption. Even when users lack prior experience, structural assurance, such as regulatory safeguards and guarantees, can help alleviate apprehensions, while firm reputation, which indicates consumers' perceptions of service

providers' dependability, is a significant factor shaping initial trust and influencing adoption decisions. This is especially true in the context of innovation, where past experience may be lacking. As a result, as established in studies by (Gao & Waechter, 2017; Kim et al., 2009; Oliveira et al., 2014; Zhou, 2011), trust is more suited for adopting novel technology. Based on the above findings, we hypothesize:

H3: Perceived trust has no impact on fintech adoption.

METHODOLOGY

This part presents the research approach used to meet the study's objectives. This part describes the research design, sample technique, data-gathering strategy, and data analysis approach used for this study.

Research Design

This study adopted an explanatory research design to identify the factors affecting fintech innovation adoption in UAE financial services firms. The explanatory research framework helped identify research issues and categorize the study's variables. The researcher was assisted by explanatory research design in identifying and developing the research instrument for collecting data.

Questionnaire and data collection technique

The data for the study has been collected through a structured questionnaire that was divided into two parts. Part A of the questionnaire contained questions about the demographics, and part B contained 30 statements about fintech adoption and factors affecting it. Based on the literature, we identified 3 Factors Effort Expectancy (EE), Perceived Trust (PT) and Perceived Risk (PR)" that might affect fintech innovation adoption (FA) in UAE financial services firms. Specifically, part B of the questionnaire contained 6 statements about the fintech adoption (FA) variable, 6 statements about performance expectancy, 8 statements concerning effort expectancy, 8 statements concerning perceived trust, and 8 statements about perceived risk, making the total statements in the questionnaire equal to 30. The statements in the questionnaire were adapted from Irimia Dieguez et al. (2023); Firmansyah et al. (2022); Dwivedi et al. (2021); Setiawan et al. (2021); Singh et al. (2020). The primary data used in this study was collected using a questionnaire survey technique. The questionnaire was sent to participants via e-mail, and any respondent's confusion regarding the questions was clarified when necessary.

Population, sampling design and sample size

The population for the study was the top and middle management level of financial services firms listed on the Abu Dhabi Securities Exchange (ADX) banking sector. It is worth mentioning that a total of 35 active financial services and banking firms are listed on the Abu Dhabi Securities Exchange. By this means, the top and middle management of these 35 financial services companies form the study population. Our data sampling method followed the probability-sampling approach using a simple random technique that enables the selecting of individual participants within the population sampling frame. In a simple random sampling method, every company within our study population had an equal chance of inclusion in the sampling frame. We calculated the sampling size using the probability factor for population (P) formula, as follows:

$$P = 1 - (1 - (1/N))n$$

where N represents the main population, and n represents the sampling size. Applying this formula with values of P = 0.10 and N = 337, we obtained a value of n = 47. By such means, we randomly selected 47 top and middle management employees from our population of 337 (Guetterman, 2019). It is important to note that factor analysis and regression analysis were used to analyze the data in the present research(Elsaman et al., 2023).

FINDING AND DISCUSSION
Factor analysis

We used factor analysis to determine the fundamental variables and their components. The analytical technique of factor analysis was chosen because of its capacity to condense a vast set of variables into a more manageable number of coherent factors, delivering clear and essential insights. Tables 1 through 4 show the results of the factor analysis. The Kaiser-Meyer-Olkin (KMO) metric surpasses the acceptable threshold of 0.50 when reviewing the data in Table 1, showing a good degree of sampling adequacy.

Furthermore, at the 0.05 significance level (p=0.05), Bartlett's Test of Sphericity rejects the null hypothesis, indicating that the correlation matrix is not an identity matrix, with an estimated Chi-Square value of 4725.50.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.838
Bartlett's Test of Sphericity	Approx. Chi-Square	4725.507
	Df	406
	Sig.	.000

Table 2: Communalities

	Initial	Extraction
EE1	1.000	.495
EE2	1.000	.659
EE3	1.000	.566
EE4	1.000	.515
EE5	1.000	.695
EE6	1.000	.648
EE7	1.000	.826
EE8	1.000	.850
PT1	1.000	.814
PT2	1.000	.815
PT3	1.000	.776
PT4	1.000	.559
PT5	1.000	.714
PT6	1.000	.648
PT7	1.000	.667
PT8	1.000	.748
PR1	1.000	.728
PR2	1.000	.585
PR3	1.000	.635
PR4	1.000	.586
PR5	1.000	.600
PR6	1.000	.637
PR7	1.000	.583
PR8	1.000	.579
Extraction Method: Principal Component Analysis.		

As was previously indicated in Table 2, the principal component analysis methodology combined with the varimax rotation method was used to conduct an explanatory factor analysis for this investigation. The factors are recovered using this method based on Eigen values, which

should be greater than 1 (Daud et al., 2023). The Eigen scores for all the variables drop from variable 1 to variable 24, as seen in Table 2. According to Hair Jr. et al. (1995), a 50–60% cumulative variance is considered sufficient in social research.

Table: 3. Reliability Statistics

Cronbach's Alpha	N of Items
.738	29

As shown in Table 3, the scale's reliability was empirically examined to determine whether the results were coherent, and the scale's dependability was ensured by the Overall Cronbach's alpha coefficient, presented in Table 5. Overall reliability based on the Cronbach alpha coefficient value presented in Table 3 is 0.738, which is higher than 0.60.

Descriptive statistics

Table 4 summarizes the descriptive data relating to the variables impacting the adoption of fintech innovations within UAE financial services organizations. First, we determined that the perceived trust (PT) variable has a mean of 3.6886 and a standard deviation of around 0.80688. Also, effort expectancy (EE) has a mean value of 3.3897 and a standard deviation of roughly 0.75851. The PR variable has a mean value of 2.8721 and a standard deviation of around 0.77781, and we get a mean value of 4.5586 and a standard deviation of roughly 0.52634 for fintech adoption (FA). Furthermore, the skewness and kurtosis values are within the allowed range of 1.96, suggesting that the data distribution for all components closely resembles a normal distribution.

Table 4: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
PT	1.00	5.00	3.6886	.80688	-.801	1.074
EE	1.20	5.00	3.3897	.75851	-.361	-.383
PR	1.00	4.80	2.8721	.77781	-.087	-.655
FA	1.50	5.00	4.5586	.52634	-1.284	1.702

Regression analysis

The results of our regression analysis are presented in this section, with fintech innovation adoption (FA) as the dependent variable and "effort expectancy (EE), perceived trust (PT), and perceived risk (PR)" as the independent variables. Table 5 presents a summary of the outcomes.

To expand further, we provide the coefficients of the independent variables resulting from the regression analysis in column 2 of Table 5. The relevant t-values for each variable are shown in column 3, while column 4 contains information on the Variance Inflation Factor (VIF) linked with each variable.

It is worth noting that the F-value derived from this study is statistically significant at the 1% level, showing that the regression model is appropriate. Furthermore, the Durbin-Watson statistic falls within the range of 1.50 to 2.25, indicating that autocorrelation problems are not present in this model. Durbin-Watson values show the lack of autocorrelation between 1.50 and 2.25. Furthermore, the Adjusted R-squared value is 0.13, indicating that the independent factors explain 13% of the variation in the dependent variable.

Table 5: Regression results

Dependent variable: Fintech Innovation Adoption

(1)	(2)	(3)	(4)
Variable	Coefficient	t-value	VIF
EE	.107**	1.973	1.115
PT	.125**	2.395	1.036
PR	-.146*	-2.725	1.082
F	10.813*		
Durbin Watson	2.18		
Adjusted R-squared	0.130		
Note: Asterisks (*) indicate significance at a 1 percent level of significance. T-values are reported in parentheses.			

Concerning the coefficients connected with the independent variables for the effort expectancy (EE) variable, we find a significant positive coefficient of 0.107, with a matching t-value of 1.973. This means that increasing effort expectation by one unit translates to a 0.107 unit increase in fintech innovation uptake. These findings support our hypothesis H1, indicating a substantial association between effort expectation and fintech innovation uptake.

Similarly, a significant positive coefficient of 0.125 is connected with the perceived trust (PT) variable, which is supported by a t-value of 2.395. This means that a one-unit increase in perceived trust correlates to a 0.125-unit increase in fintech adoption. These findings reject hypothesis H3 and emphasize the important link between perceived trust and fintech adoption.

In contrast, the perceived risk (PR) variable has a significant negative coefficient of -0.146 and a t-value of -2.725. This implies that a one-unit increase in perceived risk results in a -0.146 drop in fintech uptake. This data supports our hypothesis, indicating the significant link between perceived risk and fintech adoption.

CONCLUSION AND RECOMMENDATION

This study aimed to investigate the variables impacting the adoption of fintech innovations in the UAE's financial services sector. The study included a sample of 330 managers from these companies. The study identified many critical characteristics as predictors of fintech innovation uptake, including performance expectancy, effort expectancy, enabling circumstances, perceived trust, and perceived risk. The items within these dimensions were validated using factor analysis. The influence of these independent factors on the dependent variable was then assessed using regression analysis. The study's findings confirm a strong positive association between perceived risk and fintech adoption while also revealing a negative relationship. These findings have significant ramifications for UAE-based financial services organizations. They emphasize the significance of staff training in improving performance and effort expectations, boosting fintech adoption throughout their firms. Furthermore, financial institutions in the UAE should actively connect with their consumers to create trust and manage risk, encouraging further fintech use in their operations.

Research Limitations

1. The main limitation of the research is the few respondents at the managerial level in the financial and banking sectors of the research populations; that needs further investigation with qualitative approaches in future research.
2. Mixed methodology research is recommended to triangulate this finding and shed more light on the variables impacting the adoption of fintech innovations in the UAE's financial services sector.

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