

Investigating Factors Affecting Readiness to M-Wallet Applications¹

Dr. Nermin Gohar

Supply Chain Department
Nile University Business School
Cairo, Egypt

ngohar@nu.edu.eg

Dr. Miran Ismail

Business Information Systems Department
College of Management and Technology
Arab Academy for science, Technology
and Maritime Transport
Alexandria, Egypt

miran_ismail@aast.edu

ABSTRACT

In respect of digitalization, generally information and communication technology advancements have invaded all economic sectors and industries, M-wallet, also known as a mobile wallet, is a digital wallet that allows users to store, manage, and make transactions using their mobile devices. M-wallet seems to be the upcoming trend; it is still in its infancy especially in the banking industry. This research aims to study the effect of performance expectancy, effort expectancy, and social factors on client's readiness of m-wallet through behavioral intention while highlighting the mediating and moderating factors in the Egyptian banking sector and study Perceived COVID-19 Risk and customer readiness with the mediating role of perceived usefulness, through conducting questionnaires on 500 of banks customers. Data collected was statistically analyzed using Regression and SEM. Results showed a significant impact of all the factors under study, the readiness of m-wallet is directly affected by the level of performance expectancy, effort expectancy, and social factors within banks in Egypt considering behavioral intention.

Keywords: *M-wallet applications; Readiness; Digitalization challenges; Financial technology Banking sector and Structural Equation Modelling.*

¹ Received in 19/12 /2023, accepted in 21/1/2024.

I. INTRODUCTION

Advances in Information and Communication Technologies (ICTs) are facilitating a rapid globalization of economic activity. The digital revolution has changed society and the economy. The emergence of a linked economy, marked by widespread Internet use and the deployment of broadband networks, occurred first. A digital economy was then created as a result of an increase in the usage of digital platforms as business models for the provision of goods and services. The current trend is toward a digitalized economy, in which all economic, social, and environmental components incorporate digital technologies into production and consumption patterns (Sarika & Vasantha, 2019).

A transition is happening from a hyperconnected world to one of digitalized economies and societies as a result of the adoption and integration of advanced digital technologies, such as fifth-generation (5G) mobile networks, the Internet of things (IoT), cloud computing, artificial intelligence, big data analysis, robotics, etc. By altering how businesses operate and how services are provided, information technology and the digital economy have changed the global business landscape. Digitalization includes, but is not limited to, the transformation of business processes into digital ones through the interaction of digital technologies with actual ICT infrastructure (Yaqub & Alsabban, 2023) (El-Aziz, 2020).

Also, it is a world where the traditional economy, with its organizational, productive, and governing systems, overlaps or combines with the digital economy, with its cutting-edge elements in terms of business models, production, corporate structure, and governance. Models from both spheres interact as a result, creating increasingly complex ecosystems that are currently undergoing organizational, institutional, and regulatory transition. This creates a new, digitally intertwined system (ECLAC, 2021). Additionally, it demonstrates the impact of expanding computer and communication channel usage. The next industrial revolution will be digital, and IOT particularly in cashless payments worldwide will be its primary technology. Thus, the effectiveness of the industry's clearing mechanism has been crucial to the banking system's performance. With the development of technology, this system has undergone substantial global change. Information and communication technology (ICT)

has evolved into a tool for the global financial system's advancement. Now, many banks and financial institutions are offering ICT based financial products and services to improve their business efficiency and speed of services (Kalyani, 2016).

Accordingly, financial technology (FinTech) is an innovative technology that targets to compete with traditional financial services in the transmission of financial services (Goel et al., 2022). Like so many digital aspects of Fintech services, Electronic Wallet (E-wallet) is known as a digital wallet, mobile wallet (M-wallet), virtual cash or cashless transaction (Saraswati, 2021). It has skyrocketed since the start of the COVID-19 pandemic. It is an up-to-date technology that has seen tremendous growth in the past years. It is a structure that saves users' passwords and payment information securely for various websites and it also as a payment mechanism (Adedapo et al., 2022). According to Okonkwo et al. (2022) m-wallets just like a physical wallet, are used to store information such as credit card numbers, e-cash, the identity of the owner, contact information, shipping or billing information including customer address and other information that is used at the time of checkout on e-commerce sites.

Despite the introduction of financial service applications, organizations still struggle to maintain a reasonable pace of transformation and deliver the desired benefits. Academics have acknowledged financial services research (Kandil and Abd El Aziz, 2018) and banks have taken notice of it, particularly in poor nations (Kandil et al., 2019). However, the majority of studies focused on technology adoption in general, with little attention paid to the factors that influence banks' readiness for new applications, scant research on mediating and moderating factors, and essentially no studies focused on the Egyptian environment. Due to its large population and constant progress in adopting new technology, Egypt's banking sector is one of the oldest and most important in the region (MCIT, 2019). Consequently, the current study intends to give a complete investigation of the banking industry's readiness for mobile wallet (m-wallet) while emphasizing the mediating and moderating elements. The study aims to provide answers to the following research questions to fulfil its research goal: (1) What are the main variables influencing the banking industry's readiness for m-wallet applications? (2) What are the mediating and moderating elements influencing the banking industry's readiness for m-wallet applications?

This research is divided into eight sections as follows. The first section is the current section, which addresses the background of the study, the aim of the study, the objectives, research problems, and research questions. The second section deals with a detailed definition of the theories under study, in addition to previous studies that dealt with the relationship between performance expectancy, effort expectancy, and social factors on client's readiness of m-wallet through behavioral intention while highlighting the mediating and moderating factors in the Egyptian banking sector. The third section describes a framework and designs the hypothesis which the study aims to test and examine the significance of the relationship between performance expectancy, effort expectancy, and social factors on client's readiness of m-wallet through behavioral intention while highlighting the mediating and moderating factors in the Egyptian banking sector and study Perceived COVID-19 Risk and customer readiness with the mediating role of perceived usefulness. The fourth section presents an analytical vision based on content analysis through the SPSS program, which offers a concise analysis of the literary works being studied. Section Five, Six, Seven and eight describe the research discussion, conclusion, recommendations, and limitations. A collection of findings from the study's research are shown in the fifth section. These findings offer insightful information on the study's conclusions and advance knowledge of the topic. They also call attention to significant patterns and trends that were found during the analysis, which strengthens the conclusions made in the earlier sections.

2. LITERATURE REVIEW

2.1 FINTECH INNOVATION

The financial system, which includes banking and non-banking financial institutions, offers a wide range of digital payments to the public. The COVID-19 pandemic has significantly impacted how people use mobile payments, leading to the growth of fintech goods. Fintech is a global phenomenon that combines the application domain "Financial" and "Technology (Zhou, 2022)." Financial companies, often referred to as service providers, support firms in primary markets and have shaped a secondary market with financial service providers like mortgage brokers, commercial banks, and investment bankers (Hutapea & Wijaya, 2021).

Fintech services are increasingly embedded in everyday economic transactions, with nearly one-third of consumers in 20 markets using at least two Fintech services and 84% being aware of them. These digital payment platforms enable direct and indirect digital payments to financial institutions. Electronic Payment Systems (EPSs) are a crucial component of e-commerce, facilitating electronic transactions between buyers and sellers. EPSs can be designed for selling specific products, such as music or copyrighted online content, and use wireless mobile devices like mobile phones or personal digital assistants (PDA) (Mention, 2019) (Ernst & Young, 2017) (Kang, 2018).

Fintech services integrate current technologies, such as short messaging system (SMS), mobile web payments, quick response codes (QR), near-field communication (NFC), cloud-based m-payments, and mobile wallets (Kalakota & Whinston, 1997). Fintech innovations and start-ups are now common in both developed and developing countries, with significant breakthroughs and company development taking place in developing nations like Africa, South Korea, Kenya, Pakistan, Indonesia, and Malaysia (Kalyani, 2016) (Ribbers & Heck, 2004) (Laudon & Traver, 2002) (Ratnakanth, 2019).

The fintech revolution has led to the replacement of traditional payment methods by mobile devices with fintech capabilities, with 44% of rich countries adopting digital payments usage in 2016 compared to 12% of undeveloped countries.

2.2 MOBILE WALLET (M-WALLET)

The concept of an electronic wallet, originally introduced in the mobile phone payment system, has become a popular substitute payment method for both consumers and companies. The development of smart phone technology and the Internet has made it possible to use e-wallets as payment devices. M-wallets, a digital component of Fintech services, are financial-regulated payment services made via a mobile device, allowing users to conduct various transactions, including customer-to-customer, customer-to-merchant, and merchant-to-merchant transactions (Teoh Teng Tenk et al., 2020).

The goal of m-wallets is to make payments quick, simple, safe, remote, effective, and transparent. Users can charge a set amount of money in advance with any service provider using a mobile wallet application, which can then be used to pay

multiple bills. The convenience, affordability, and recordkeeping benefits of m-wallets have influenced consumers' payment preferences (Sarika & Vasantha, 2019) (Elgazouly et al., 2022) (Hidayat-ur-Rehman et al., 2022).

Businesses can also benefit from m-wallets. They can deliver useful information created by customers for payments to online firms like Google, which can enhance their marketing campaigns by integrating data from online and offline transactions (Adedapo et al., 2022). This integration can boost the effectiveness and impact of marketing campaigns while providing customers more value for their money (Patel, 2013) (Kumar et al., 2017) (Schuh and Stavins, 2015). Overall, m-wallets are a significant part of Fintech services and are gaining popularity in the mobile payment market (Grewal et al., 2017) (Savitz, 2013).

2.3 FACTORS AFFECTING ADOPTION OF E-WALLET

Mobile payments are crucial for developing nations as they provide financial services to the unbanked, promoting person-to-person transfers and providing government compensation. The simplicity of mobile wallets should be the primary justification for using these systems regularly. Studies have developed various conceptual models to understand user behavior about the adoption of digital mobile wallets (Iman, 2018).

The Information System Success Model (ISSM), Diffusion of Innovation (DOI), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and the theory of perceived risk (TPB) are the most commonly used theories for technology acceptance research (León, 2021) (Mumtaza et al., 2020). These models help explain how behavioral intention and usage patterns of digital mobile wallets are influenced by factors such as perceived usefulness, ease of use, attitude towards using the technology, trust, security, and cost.

Taiwanese consumers' intent to embrace NFC mobile payments were influenced by the majority of criteria. The UTAUT model includes four variables that affect behavioral intents to use a technology: performance expectancy (PE), effort expectancy (EE), supporting conditions (SI), and facilitating conditions. Performance expectancy is the extent to which the use of technology will provide a benefit to customers in accomplishing certain activities (Ariffin and Lim, 2020) (Ting et al., 2016) (Gupta et al., 2020).

Social influence, performance expectations, perceived technology security, compatibility, innovativeness, and perceived technology security all have a substantial direct and indirect impact on the uptake of mobile payments. Social impact has been shown to have a direct impact on behavioral intent, and user reuse of m-payments increased with their social impact (Phonthanukitithaworn et al., 2015).

In Kenyan microbusinesses, behavioral intention to use mobile payment services is related to the convenience of money transfer technology, its accessibility, cost, support, and security considerations. The theoretical underpinnings of electronic commerce were critically explored to comprehend the substructure of behavior towards intention in using digital wallets (Davis, 1989).

In 2019, (Karsen et al., 2019) conduct a thorough analysis of the major motivators for using mobile payments. They list 11 important technological, individual, and environmental aspects, including usability, perceived value, perceived risk, perceived security, social impact, effort expectation, attitude, performance expectation, and facilitating conditions. Accordingly, (Kaur et al., 2020) state that mobile wallets are made to be quick, simple to use, effective, transparent, and accessible.

Despite receiving a lot of attention in developing countries, mobile wallet use is still low and inconsistent (Kaur et al., 2020). The use of mobile wallets varies depending on factors including infrastructure, literacy levels, internet connectivity, and access to banking services (Mumtaza et al., 2020). Where mobile payment systems have been implemented, they have primarily been used for inter-person transfers but have also been used to make purchases, pay bills, and pay fees (Iman, 2018).

2.4 PERCEIVED COVID RISK AND GOVERNMENT SUPPORT

The World Health Organization (WHO) declared a pandemic in 2019 due to the rapid spread of the coronavirus (Bauer, 1960). The World Health Organization (WHO) emphasized the perceived risk of the virus, which led to the adoption of cashless and digital payment methods like mobile wallets (Karjaluo et al., 2014). This change in consumer behavior was influenced by perceived health risks, such as exercise avoidance and the fear of handling cash that could be contaminated (Amoroso et al., 2012). Government support, including policies and access speed,

significantly influenced people's perception of technology, particularly fintech and e-wallets (Guthrie et al., 2021) (Wu et al., 2017) (Alswaigh and Aloud, 2021). Government initiatives and laws encouraging cashless transactions increased consumer confidence in m-wallets, making them more valuable during the pandemic (Bae & Chang, 2021) (Sreelakshmi & Prathap, 2020) (Khozaei et al., 2021) (Wisniewski et al., 2021).

This study focused totally on the effect of fear from COVID-19 and its spread among people on the transformation to M-wallet and mentioned the role of government support as a mediator in the relationship between Perceived COVID Risk and M-wallet readiness but didn't mention the importance of Perceived Usefulness.

2.5 DEVELOPMENT OF RESEARCH HYPOTHESES

a) Performance Expectancy and Behavioral Intention

Performance expectations refer to how users thought utilizing one wallet would be more convenient, efficient, and advantageous for a transaction, as well as be finished more rapidly. (Mensah et al., 2022), (Lu et al., 2011), and (Slade et al., 2015) have found that PE strongly impacts satisfaction with past academic literature. Performance expectation, along with effort expectation, social influence, and enabling factors, is one of the UTAUT model's antecedents of behavioral intention. Previous research (Slade et al., 2015), (Wang and Yi, 2012), (Kapoor et al., 2015), (Tan et al., 2014) have indicated the good effect of PE on the adoption intention of e-wallets.

b) Effort Expectancy and Behavioral Intention

The effort expectation (EE) is "the level of ease associated with the use of the system.". Customers anticipated that using the digital wallet would be straightforward to learn, that they would be adept at using it, and that interacting with and controlling it would be simple. One the one hand, (Mensah et al., 2022), (Lu et al., 2011), and (Slade et al., 2015) found that EE significantly affected satisfaction. According to (Slade et al., 2015) research, EE has minimal influence on contentment. However, a number of research (Wang and Yi, 2012), (Kapoor et al., 2015), (Tan et al., 2014), and (Malek, 2011) have found that EE has a secondary impact on a user's propensity to utilize a digital wallet or their behavior.

c) Social Factors and Behavioral Intention

(Meng et al., 2020) incorporates social impact into its study model and attempts to understand its function in the e-commerce industry. The outcome demonstrates that social influence does have a direct impact on consumption. In addition, other earlier research (Ariff et al., 2013) have shown comparable findings, indicating that social influence has an impact on consumer behavior when it comes to the adoption of new information systems or mobile technologies. (Mohammadi, 2014) also look at the variables that determine whether users would adopt mobile payments, and their findings show that social influence is one of the most important variables. It demonstrates that social impact and consumers' propensity to adopt certain behaviors are positively correlated.

d) Perceived Covid-19 Risk and Perceived Usefulness

Perceived risk, including security and privacy risks, significantly impacts customer adoption intentions in mobile payment systems (Safeena et al., 2011). This risk has been shown to hinder the adoption of mobile payment systems. Previous research has shown that perceived risk can negatively impact the use of mobile payment, despite some refuting this claim (Yousafzai et al., 2012) (Aziz et al., 2014) (Kamal Metwally, 2013) (Kamel & Hassan, 2003). The study confirms that perceived risk is appropriate for analyzing the uptake of mobile payments, as consumers' perceptions of risk can negatively impact their behavioral intention to adopt such systems. (Lim et al., 2017) (Camilleri and Camilleri, 2019) (De Luna et al., 2019).

e) Perceived Usefulness and Behavioral Intention

In Egypt, the adoption of Information and Broadcasting (IB) services is significantly influenced by perceived utility (Safeena et al., 2011) (Yousafzai et al., 2012) (Aziz et al., 2014) (Kamal Metwally, 2013) (Kamel & Hassan, 2003), as research indicates that trust, perceived utility, and perceived ease of use are key factors in the intention of use. In Egypt, a study found that perceived security and awareness significantly influence millennial customers' behavioral intention to utilize mobile Fintech payment services (De Luna et al., 2019) (Apanasevic et al., 2016). The study also found that the respondents' desire to use mobile Fintech payment services is significantly influenced by their understanding of the

services, perceptions of their utility, security, confirmation, and satisfaction. Therefore, the perceived utility of IB services is a key factor in influencing service adoption in Egypt (Lim et al., 2017) (Camilleri and Camilleri, 2019).

f) Behavioral Intention and Readiness Of M-Wallet

Moreover, an individual's attitude toward engaging in the goal behavior is classified as either positive or negative. Apanasevic et al. (2016) noted that some behaviors, such as attitudes toward mobile apps or mobile payments, can effectively predict attitudes (Camilleri and Camilleri, 2019). Many earlier studies on technology adoption take into account the idea of attitude, expressing positive or negative feelings about a specific behavior, as a key factor determining the desire to continue using (Aziz et al., 2014; Apanasevic et al., 2016; De Luna et al., 2019). This study defines attitude as the perceived number of positive feelings toward using an e-wallet that will, in turn, influence their happiness with e-wallet services based on such earlier research findings, this study focused only on Behavioral Intention And Readiness Of M-Wallet and didn't test the role of other variables like social factors, it also didn't specify a country to study the case in.

This study will include new relationships on the variable of government support and how it mediates the relationship between Perceived Covid-19 Risk and Behavioral Intention. It also focused on M-wallet in banking sector in Egypt, which was not studied before, the study included the mediating role of behavioral intention and its effect on readiness of M-wallet of banks customers in Egypt.

Therefore, in the next section, the methodology of this research will be explained, as well as the theoretical framework of this research and its hypotheses.

3. METHODOLOGY

Although studies are widely available on the key dimensions that influence readiness for mobile wallet apps, levels of importance remain varying across countries. Not to mention that only a few studies have focused on the banking industry. Accordingly, the literature was extensively reviewed to extract the main dimensions that influence readiness for mobile wallet applications in the Egyptian banking industry and propose a research framework; To achieve this

goal, this research uses the deductive approach, by collecting preliminary data for the research variables through a questionnaire that will be distributed in a random manner (500 valid questionnaires) to customers in banks. This data will be analyzed using Validity and Reliability and Confirmatory Factor Analysis. The model contains research variables, which have been highlighted in a variety of studies, namely: “performance expectancy,” “effort expectancy,” “social factors,” “perceived COVID-19 risk,” “government support,” and “interest.” Perception”, and “behavioral intention”, and are considered as antecedents of “willingness” for mobile wallet applications. Accordingly, the first hypotheses 1 to 8 were developed to test whether these factors still exist as key factors in the context, and to analyze these hypotheses, the Regression analysis and SEM using SPSS. Figure 1 shows the research variables and the theoretical framework that was deduced based on previous literature.

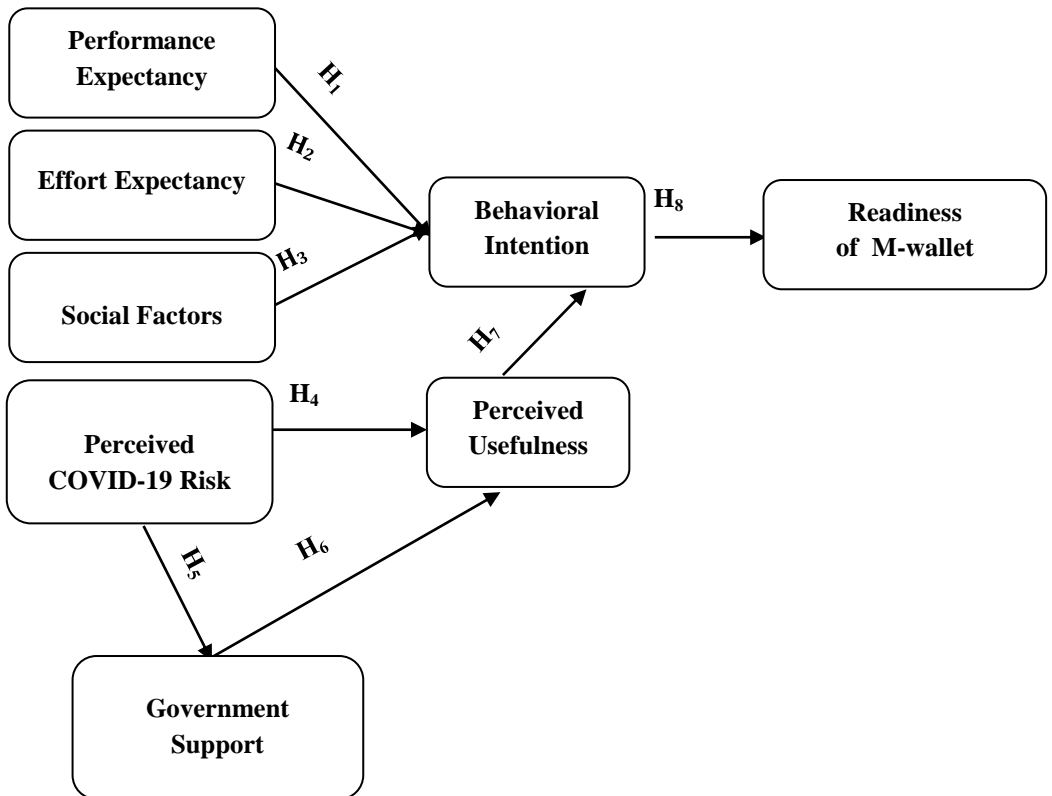


Figure 1: Conceptual Framework

Based on the framework described previously, the hypotheses can be explained as follows:

Hypothesis (1): There is a significant impact between performance expectancy and behavioral intention.

Hypothesis (2): There is a significant impact between effort expectancy and behavioral intention.

Hypothesis (3): There is a significant impact between social factors and behavioral intention.

Hypothesis (4): There is a significant impact between perceived COVID-19 risk and perceived usefulness.

Hypothesis (5): There is a significant impact between perceived COVID-19 risk and government support.

Hypothesis (6): There is a significant impact between government support and perceived usefulness.

Hypothesis (7): There is a significant impact between perceived usefulness and behavioral intention.

Hypothesis (8): There is a significant impact between behavioral intention and readiness of m-wallet.

Table 1: Research Variables Measurement using Questionnaire

Variables	Items	Sources
Performance Expectancy	<ol style="list-style-type: none"> 1. Performance expectancy is an individual's belief that a specific technology will enhance their job performance or task outcomes. 2. It is essentially the perceived usefulness of the technology. 3. High performance expectancy in individuals leads to a stronger intention to use a technology, which in turn predicts actual system use. 	Davis et al., (2003) Venkatesh et al., (2022)
Effort Expectancy	<ol style="list-style-type: none"> 1. If users perceive a technology as easy to use, they are more likely to find it useful. 2. Learning to operate internet banking is easy for users. 3. The interaction with internet banking is clear and understandable. 	Ghani et al., (2018)
Social Factors	<ol style="list-style-type: none"> 1. Social factors significantly influence consumers' attitudes and intentions towards technology adoption, such as internet banking and mobile payment. 	Thaichon et al., (2022)

Variables	Items	Sources
	<ol style="list-style-type: none"> Social influence positively affects the readiness of using m-wallets. Favorable social influence affects individuals' readiness to technology adoption. 	
Perceived COVID-19 Risk	<ol style="list-style-type: none"> Perceived COVID-19 Risk might positively influence the Readiness of M-Wallet. Individuals who perceive a higher risk of COVID-19 transmission through traditional payment methods may be more ready to adopt mobile wallets. The readiness to adopt M-Wallets may increase as users seek contactless payment methods to mitigate perceived health risks. 	Alqudah et al., (2022)
Government Support	<ol style="list-style-type: none"> Government Support can positively impact Behavioral Intention by providing a supportive environment for the adoption of M-Wallets through policies, incentives, or regulations. The government should establish universal biometrics connections, integrate the Internet of Things, and enhance cloud computing for improved authentication and security, while implementing favorable infrastructure policies. Governments should encourage businesses to provide their customers with digital payment options. 	Sobti (2019)
Perceived Usefulness	<ol style="list-style-type: none"> Performance Expectancy is often positively related to Perceived Usefulness. Users are likely to find a technology useful if they believe it will enhance their performance. Mobile payment applications are useful in daily life. 	Tripopsakul et al., (2021)
Behavioral Intention	<ol style="list-style-type: none"> behavioral intention is an important factor that indicates a person's readiness and willingness to embrace and use M-Wallets. Requesting information actively is a definite sign of willingness to utilize M-Wallets. Behavioral intention is a key indicator in the field of psychology and technology adoption. 	Ajzen, (1991)
Readiness Of M-Wallet	<ol style="list-style-type: none"> Individuals' perceived risk of COVID-19 exposure influences their adoption of mobile wallets. The adoption of M-Wallets involves users becoming familiar with the technology and integrating it into their daily financial activities. Mobile wallets are digital wallets that allow users to securely store and conduct financial transactions on their mobile devices. 	Venkatesh et al., (2022)

The study is applied on the customers of Banks in Egypt, and the questionnaire forms were distributed to customers of 15 Bank in Egypt including in a random manner as shown in the following Table. The sample size of the study included a diverse range of customers from different regions of Egypt. This approach ensured a representative and comprehensive analysis of customer satisfaction across various banks in the country.

Table 2: Sample for Each Bank

Banks in Egypt	Number of Customers included in survey
Banque Misr	100
National Bank of Egypt	100
Bank of Alexandria	50
Crédit Agricole Egypt	10
Suez Canal Bank	19
Banque du Caire	50
Faisal Islamic Bank of Egypt	20
QNB	15
Bank Audi	25
HSBC	15
Al Ahli Bank of Kuwait	20
Housing and Development Bank	4
Industrial Development Bank	16
Abu Dhabi Islamic Bank (ADIB)	32
Egyptian Gulf Bank	24

4. FINDINGS AND ANALYSIS

4.1 VALIDITY AND RELIABILITY ANALYSIS

Two key variables are used to assess the validity analysis; the Average Variance Extracted (AVE), which should be >0.5 and the factor loading (FL) for each statement, which should be ≥ 0.4 . Reliability analysis can be measured using Cronbach's Alpha. The coefficient of Alpha has a value between 0 and 1, with a higher value suggesting greater reliability and the coefficients ≥ 0.7 suggest adequate dependability. The researchers performed a pilot study for a sample of the study population to assess the validity and reliability of each variable used in this study. The pilot study involved a small subset of participants (40 Participants) from the study population, allowing the researchers to test the accuracy and consistency of the variables. This preliminary analysis helped ensure

that the chosen variables were suitable for measuring the intended outcomes and could be relied upon for the main study. Therefore, the pilot study proved that all the studied variables are within acceptable values regarding validity and reliability testing.

Accordingly, the results of the validity and reliability tests for the studied variables are shown in the following table. All values of KMO, AVE, Cronbach's Alpha, and Factor Loadings are found to be in the acceptable levels.

Table 3: Validity and Reliability

Variables	KMO	AVE	Cronbach's Alpha	Items	Factor Loading
Performance Expectancy	.867	87.741	.953	PEX ₁	.886
				PEX ₂	.867
				PEX ₃	.902
				PEX ₄	.854
Effort Expectancy	.731	81.897	.889	EEX ₁	.842
				EEX ₂	.853
				EEX ₃	.762
Social Factors	.761	88.238	.933	SF ₁	.857
				SF ₂	.896
				SF ₃	.895
Perceived COVID-19 Risk	.698	79.243	.867	PCR ₁	.854
				PCR ₂	.833
				PCR ₃	.690
Government Support	.863	85.485	.943	GS ₁	.808
				GS ₂	.875
				GS ₃	.897
				GS ₄	.839
Perceived Usefulness	.950	84.679	.984	PUS ₁	.846
				PUS ₂	.873
				PUS ₃	.891
				PUS ₄	.867
				PUS ₅	.870
				PUS ₆	.836
				PUS ₇	.799
				PUS ₈	.822
				PUS ₉	.837
				PUS ₁₀	.899
				PUS ₁₁	.817
				PUS ₁₂	.803

Variables	KMO	AVE	Cronbach's Alpha	Items	Factor Loading
Behavioral Intention	.815	87.495	.951	PIN ₁	.863
				PIN ₂	.890
				PIN ₃	.837
				PIN ₄	.909
Use Behavior of E-wallet	.734	84.783	.909	BEW ₁	.867
				BEW ₂	.790
				BEW ₃	.887

4.2 CONFIRMATORY FACTOR ANALYSIS

Before beginning the SEM, CFA is a necessary step to verify the factor structure the researcher has derived as a measuring scale for each dimension. To display FL for each variable and their model fit, the AMOS 24 program was utilized. The outcomes of the CFA with the covariance approach were as follows:

The chi-square divided by the degrees of freedom (CMIN/DF) value was found to be 1.486 (< 2); P-value was equal to 0.000 (> 0.05); goodness of fit (GFI) was 0.938 (> 0.80); adjusted goodness of fit index (AGFI) was 0.918 (> 0.80); the Bentler-Bonett normed fit index (NFI) was 0.972 (> 0.80) and the Tucker-Lewis index (TLI) was 0.989 (> 0.85); the comparative fit index (CFI) was 0.991 (> 0.80). Also, the root mean square residual (RMR) and root mean square of approximation (RMSEA) were both 0.014 (< 0.09) and 0.033 (< 0.10).

Table 4 shows that all FL are ≥ 0.40 , showing the adequate validity of the investigated statements. Moreover, all P-values are ≤ 0.05 , showing the significance of the statements.

Table 4: Item Loading after Confirmatory Factor Analysis

			Estimate	S.E.	C.R.	P
PEX ₄	<---	PEX	.936	.029	32.663	***
PEX ₃	<---	PEX	1.000			
PEX ₂	<---	PEX	.925	.028	33.442	***
PEX ₁	<---	PEX	.966	.027	35.363	***
EEX ₃	<---	EEX	.822	.039	20.989	***
EEX ₂	<---	EEX	.976	.037	26.030	***
EEX ₁	<---	EEX	1.000			
SF ₃	<---	SF	1.000			
SF ₂	<---	SF	.987	.030	33.289	***

			Estimate	S.E.	C.R.	P
SF ₁	<---	SF	.923	.033	28.168	***
PCR ₃	<---	PCR	1.000			
PCR ₂	<---	PCR	1.044	.068	15.390	***
GS ₄	<---	GS	.944	.031	30.184	***
GS ₃	<---	GS	.988	.029	33.961	***
GS ₂	<---	GS	1.000			
PUS ₂	<---	PUS	.974	.024	40.621	***
PUS ₃	<---	PUS	1.000			
PUS ₅	<---	PUS	.968	.024	39.959	***
PUS ₆	<---	PUS	.938	.026	36.047	***
PUS ₇	<---	PUS	.918	.028	33.068	***
PIN ₂	<---	PIN	.976	.023	42.780	***
PIN ₄	<---	PIN	1.000			
BEW ₁	<---	BEW	.955	.030	32.125	***
BEW ₂	<---	BEW	.884	.038	23.443	***
BEW ₃	<---	BEW	1.000			

4.3 DESCRIPTIVE ANALYSIS

Descriptive statistics is a methodology that provides a clear understanding of the characteristics of a certain data collection by offering concise descriptions of samples and data measuring methods. Means, standard deviations, and frequency statistics will be calculated for both the demographic information and the study variables in the section that follows. Table 5 shows the description of respondent profile. It could be observed that the age group 40- Less than 50 is the highest group with a percentage of 32.3%. Besides, the number of Female respondents is higher than Male respondent as it got 52.8%. Furthermore, master's degree has the highest number of respondent as it got 33.7% of the sampling. Furthermore, for the Average monthly household income "10,000 – less than 15,000" has the highest number of respondent as it got 35.3% of the sampling.

Table 5: Respondent Profile

	Frequency	Percent	Total
Age			
Less than 30	91	20.9	436
30- Less than 40	78	17.9	
40- Less than 50	141	32.3	
50- Less than 60	101	23.2	
60 or older	25	5.7	
Gender			
Male	206	47.2	436
Female	230	52.8	
Education			
Bachelor's degree	146	33.5	436
Master's degree	147	33.7	
Doctorate's degree	42	9.6	
Other	101	23.2	
Income			
Less than 5,000	93	21.3	436
5,000 – less than 10,000	154	35.3	
10,000 – less than 15,000	80	18.3	
15,000 – less than 20,000	105	24.1	
20,000 and above	4	.9	

The descriptive analysis for the research variables is shown in the following table. The mean values of; Performance Expectancy, Effort Expectancy, Social Factors, Perceived Risk, Government Support, Perceived Usefulness, Behavioral Intention, and Use Behavior of E-wallet, are 3.4885, 3.6170, 3.4862, 3.3624, 3.5757, 3.5115, 3.5940, and 3.6950, respectively. It is also worth noting that the mean and frequencies are in the zone of agreement.

Table 6: Descriptive Analysis for the Research Variables

Research Variable	N	Mean	Std. Deviation	Frequency				
				1	2	3	4	5
Performance Expectancy	436	3.4885	1.00909	22	31	165	148	70
Effort Expectancy	436	3.6170	1.00004	15	37	132	168	84
Social Factors	436	3.4862	.99760	17	40	164	144	71
Perceived COVID-19 Risk	436	3.3624	.92070	13	56	166	162	39
Government Support	436	3.5757	.98085	12	30	179	125	90
Perceived Usefulness	436	3.5115	.91091	11	41	150	182	52
Behavioral Intention	436	3.5940	1.00704	17	28	159	143	89
Use Behavior of E-wallet	436	3.6950	.85019	6	27	127	210	66

4.4 TESTING RESEARCH HYPOTHESES

The correlation and path analyses of SEM are used in this part to test the study's hypotheses. The study's data are demonstrated to be regularly distributed; hence the Pearson correlation is applied. The correlation matrix is presented in Table 7.

Performance Expectancy is directly significant with Behavioral Intention, as the coefficient is 0.761. Effort Expectancy has a direct significant correlation with Behavioral Intention, as the coefficient is 0.756. The variable; Social Factors, is directly significant with Behavioral Intention, as the coefficient is 0.751. Perceived COVID-19 Risk has a direct significant correlation with Perceived Usefulness, as the coefficient is 0.713. The variable; Perceived COVID-19 Risk is directly significant with Government Support, as the coefficient is 0.705. Government Support is directly significant with Perceived Usefulness, as the coefficient is 0.773. Perceived Usefulness is directly significant with Behavioral Intention, as the coefficient is 0.776. Behavioral Intention is directly significant with Use Behavior of E-wallet, as the coefficient is 0.822. Finally, it is noticed that all the coefficients are statistically significant at 0.01.

Table 7: Correlation Matrix for the Research Variables

		1.	2.	3.	4.	5.	6.	7.	8.
1. Performance Expectancy	r	1							
	P-value								
	n	436							
2. Effort Expectancy	r	.783**	1						
	P-value	.000							
	n	436	436						
3. Social Factors	r	.713**	.701**	1					
	P-value	.000	.000						
	n	436	436	436					
4. Perceived COVID-19 Risk	r	.640**	.645**	.709**	1				
	P-value	.000	.000	.000					
	n	436	436	436	436				
5. Government Support	r	.726**	.689**	.756**	.705**	1			
	P-value	.000	.000	.000	.000				
	n	436	436	436	436	436			
6. Perceived Usefulness	r	.755**	.723**	.748**	.713**	.773**	1		
	P-value	.000	.000	.000	.000	.000			
	n	436	436	436	436	436	436		
7. Behavioral Intention	r	.761**	.756**	.751**	.709**	.775**	.776**	1	
	P-value	.000	.000	.000	.000	.000	.000		
	n	436	436	436	436	436	436	436	
8. Use Behavior of E-wallet	r	.772**	.738**	.750**	.726**	.784**	.796**	.822**	1
	P-value	.000	.000	.000	.000	.000	.000	.000	
	n	436	436	436	436	436	436	436	436
**. Correlation is significant at the 0.01 level (2-tailed).									

The SEM analysis is presented in Table 6, it could be observed that the first hypothesis is supported, as the P-value= 0.000, and the estimate is 0.261. The second hypothesis is supported, as the significant = 0.002, and the estimate is 0.166. The third hypothesis is supported, as the P-value =0.000, and the estimate is 0.221. The fourth hypothesis is supported, as the significance =0.000, and the estimate is 0.415. The fifth hypothesis is supported, as the P-value = 0.000, and the estimate is 0.889. The sixth hypothesis is supported, as the sig. =0.000, and the estimate is 0.491. The seventh hypothesis is supported, as the sig. equals 0.000, and the estimate is 0.272. The eighth hypothesis is supported, as the P-value equals 0.000, and the estimate is 0.892.

Table 8: SEM Analysis for the Research Variables

			Estimate	P	R ²
Government Support	<---	Perceived COVID-19 Risk	.889	***	.591
Perceived Usefulness	<---	Perceived COVID-19 Risk	.415	***	.672
Perceived Usefulness	<---	Government Support	.491	***	
Behavioral Intention	<---	Performance Expectancy	.261	***	.816
Behavioral Intention	<---	Effort Expectancy	.166	.002	
Behavioral Intention	<---	Social Factors	.221	***	
Behavioral Intention	<---	Perceived Usefulness	.272	***	
Use Behavior of E-wallet	<---	Behavioral Intention	.892	***	.853

The model fit indices are all within their acceptable levels, where CMIN/DF = 3.978, GFI = 0.886, CFI = 0.939, AGFI= 0.858, and RMSEA = 0.083. Finally, this section offered the empirical investigation of the research hypotheses by measuring variables derived from the prior literature using SPSS and AMOS. It is noticed that all the hypotheses are supported.

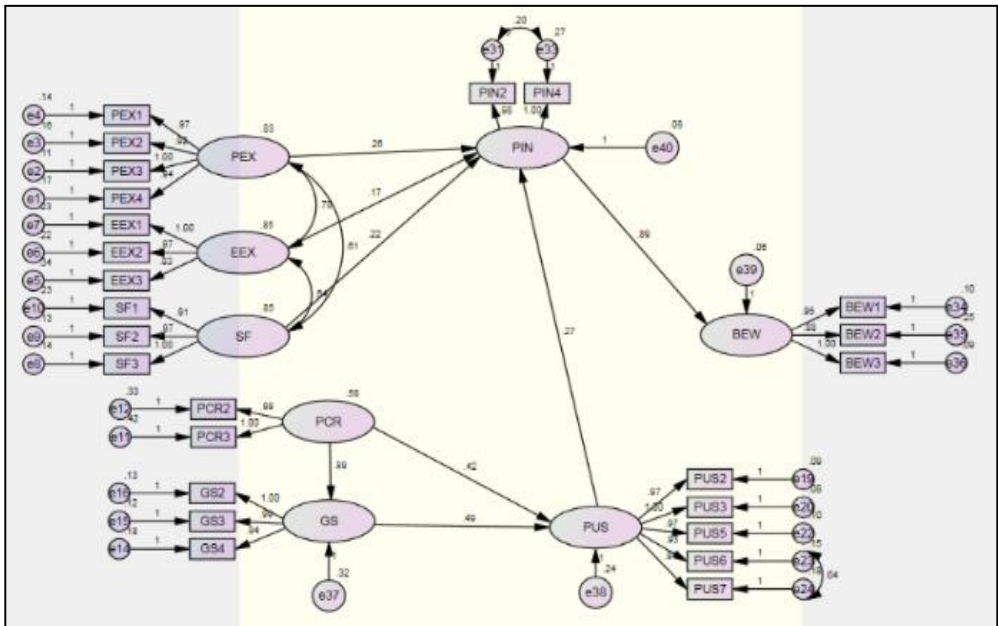


Figure 2: SEM for the Research Variables

5. DISCUSSION

After analyzing 500 questionnaires collected from bank customers in Egypt, using reliability and validity analysis, then CFA and descriptive analysis of the data. The SPSS program was used for regression analysis to study the relationship between variables, as well as the AMOS program for SEM analysis. Based on the results of these analyses, this section will discuss these results for eight hypotheses.

Based on the results of the regression analysis and SEM, hypothesis (1) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.000, so the effect of performance expectancy on behavioral intention is positive and statistically significant. In addition, hypothesis (2) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.002, so the effect of effort expectancy on behavioral intention is positive and statistically significant.

Moreover, hypothesis (3) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.000, so the effect of social factors on behavioral intention is positive and statistically significant. Furthermore, hypothesis (4) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.000, so the effect of perceived COVID-19 risk on perceived usefulness is positive and statistically significant.

In addition, hypothesis (5) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.000, so the effect of perceived COVID-19 risk on government support is positive and statistically significant. Moreover, hypothesis (6) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM

analysis, since the P-value = 0.000, so the effect of government support on perceived usefulness is positive and statistically significant.

Furthermore, hypothesis (7) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.000, so the effect of perceived usefulness and behavioral intention is positive and statistically significant. In addition, hypothesis (8) was supported, and this is because it is noticed that the coefficient is statistically significant at 0.01 for the result of the regression test and this is confirmed by the result of the SEM analysis, since the P-value = 0.000, so the effect of behavioral intention and readiness of m-wallet is positive and statistically significant.

6. CONCLUSION

The aim of the research is to study the effect of performance expectancy, effort expectancy, and social factors on the readiness of m-wallet through behavioral intention. The research also aimed to study the impact of perceived covid-19 risk on behavioral intention through perceived usefulness. Finally, the study examined the impact of perceived covid-19 risk on perceived usefulness through the Egyptian government support. The study examined this practical framework in Egypt, especially in the banking sector. Through collecting data and the results of analyzing these relationships between the variables, support for all of these relationships was reached. Accordingly, it can be said that the readiness of m-wallet is directly affected by the level of performance expectancy, effort expectancy, and social factors within banks in Egypt in light of behavioral intention. These findings suggest that individuals in Egypt are more likely to adopt m-wallet technology if they perceive it as useful and if they receive support from the government. The study also highlights the importance of considering social factors within banks, as they play a significant role in shaping individuals' behavioral intentions towards using m-wallets. Overall, this research provides valuable insights for both policymakers and banking institutions to enhance the adoption and utilization of m-wallets in Egypt. Therefore, it is concluded that in the Egyptian Banking sector, the perceived usefulness of m-wallet technology and government support are key factors in influencing individuals' adoption of this technology. Additionally, the study emphasizes the need for banks to consider social factors when designing strategies to promote m-wallet usage. By

addressing these factors, policymakers and banking institutions can effectively enhance the adoption and utilization of m-wallets in Egypt, ultimately leading to a more widespread use of this technology among the population.

7. RECOMMENDATION

Following the findings and results of this study, the researchers believe that mobile service providers in Egypt should improve their marketing plans with a focus on increasing community awareness about the quality of this service. In addition, decision makers within banks must pay attention to providing reports on the performance of M-wallet that they expect, with the aim of comparing it with the actual performance to improve it. They must also measure service effort levels and the services they provide to customers. Moreover, M-wallet providers should also take care of customers' privacy concerns by either improving it or promoting how secure it is. The results also demonstrated the importance of government support in M-wallet adoption levels, so the study provides a recommendation to governments and government agencies in Egypt to support banks in promoting the use of M-wallet within them and increasing customers' awareness of it. Furthermore, the research believes that more research should be conducted using the ATUAT₂ module that studies user behavior as well as intention to use the service. This additional research would provide a more comprehensive understanding of the factors influencing M-wallet adoption and help in developing targeted strategies to increase its usage. Additionally, it would be beneficial to explore the potential barriers and challenges faced by different demographic groups in adopting M-wallets, as this could inform the development of tailored marketing campaigns and initiatives.

8. LIMITATION AND FUTURE RESEARCH

This study has some limitations that can be considered in future investigations. Although the scope of the current research reached moderation and mediation analysis with the integration of two previously researched models, the moderation analysis mostly focused on the categorical variables in the study. However, it may be useful to examine the moderating effect of underlying factors, such as satisfaction, on the relationship between expectation confirmation and continuation intentions. Secondly, the study relied only on quantitative data. I believe that if future research also uses qualitative data

(interviews or focus groups), good factors affecting the readiness of m-wallet that have not been discussed in previous literature can be discovered. The third limitation is that this research was conducted in Egypt only, so future researchers can adopt this theoretical framework in developing and developed countries and form a comparative study between countries. Finally, the research targeted a specific sector in the study, so future researchers can study this framework in different sectors and compare the results of the analysis of the relationship of variables.

REFERENCES

- Adedapo Oluwaseyi Ojo, Olawole Fawehinmi, Oluwayomi Toyin Ojo, Chris Arasanmi & Christine Nya-Ling Tan (2022). *Consumer usage intention of electronic wallets during the COVID-19 pandemic in Malaysia*, Cogent Business & Management, 9(1), 1 – 15.
- Ajzen, I. (2011). Design and evaluation guided by the theory of planned behavior. *Soc psychol Eval, Guilford Publications*, 74-100.
- Al-Qudah, A. A., Al-Okaily, M., Alqudah, G., & Ghazlat, A. (2022). Mobile payment adoption in the time of the COVID-19 pandemic. *Electronic Commerce Research*, 1-25.
- Alswaigh, N.Y. & Aloud, M.E. (2021). Factors affecting user adoption of E-payment services available in mobile wallets in Saudi Arabia. *International Journal of Computer Science and Network Security*, (21), 222-230.
- Amoroso, D. L., & Magnier-Watanabe, R. (2012). Building a research model for mobile wallet consumer adoption: The case of mobile Suica in Japan. *Journal of Theoretical and Applied Electronic Commerce Research*, 7(1), 94–116. <https://doi.org/10.4067/S0718-18762012000100008>.
- Apanasevic, T., Markendahl, J., & Arvidsson, N. (2016). Stakeholders' expectations of mobile payment in retail: lessons from Sweden. *International Journal of Bank Marketing*, 34(1), 37-61.
- Ariff, M.S.M., Min, Y.S., Zakuan, N., Ishak, N. & Ismail, K. (2013). The impact of computer self efficacy and technology acceptance model on behavioral intention in internet banking system. *Review of Integrative Business and Economics Research*, 2(2), 587.

- Ariffin, S.K. & Lim, K.T. (2020). Investigating factors affecting intention to use mobile payment among young professionals in Malaysia, Paper presented at the First ASEAN Business, *Environment, and Technology Symposium* (ABEATS 2019), 1st-4th December 2019, Atlantis Press.
- Aziz, R. A. E., ElBadrawy, R., & Hussien, M. I. (2014). ATM, internet banking and mobile banking services in a digital environment: the Egyptian banking industry. *International Journal of Computer Applications*, 90(8), 45-52.
- Bae, S. Y., & Chang, P. J. (2021). *The effect of coronavirus disease-19 (COVID-19) risk perception on behavioural intention towards 'untact'tourism in South Korea during the first wave of the pandemic* (March 2020). *Current Issues in Tourism*, 24(7), 1017-1035.
- Bauer, R. A. (1960). Consumer behavior as risk taking. In Hancock, R. S., Ed., *Dynamic Marketing for a Changing World*, Proceedings of the 43rd. *Conference of the American Marketing Association*, 389-398.
- Camilleri, M. A., & Camilleri, A. C. (2019). *The students' readiness to engage with mobile learning apps*. *Interactive Technology and Smart Education*, 17(1), 28-38.
- Davis, F. D. (1989). *Perceived usefulness, perceived ease of use, and user acceptance of information technology*, *MIS Quarterly*, 3(13), 318-340.
- De Luna, I. R., Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2019). *Mobile payment is not all the same: The adoption of mobile payment systems depending on the technology applied*. *Technological Forecasting and Social Change*, 146, 931-944.
- El-Aziz, R., El-Gamal, S., & Ismail, M. (2020). Mediating and Moderating Factors Affecting Readiness to IoT Applications: The Banking Sector Context. *International Journal of Managing Information Technology (IJMIT)*, 12(4), 1-26.
- Elgazouly, M. Y., AbdelAziz, G. S., & Abdelgawad, D. F. (2022). Toward a cashless economy: Exploring Drivers of Mobile Wallets Adoption from Consumers' and Service Providers' Perspectives. *The Academic Journal of Contemporary Commercial Research*, 2(3), 75-98.

- Ernst & Young (2017). EY FinTech Adoption Index: Fintech Services Poised for Mainstream Adoption in the US With 1 in 3 Digitally Active Consumers Using Fintech. Press release, June 28. <https://www.ey.com/us/en/newsroom/news-releases/news-ey-fintech-adoption-index> [Google Scholar]
- Goel, P., Kulsrestha, S., & Maurya, S. K. (2022). *Fintech Unfolding: Financial Revolution in India*. Thailand and The World Economy, 40(2), 41-51.
- Goyal, S., Venkatesh, V., & Shi, X. (2022). *Role of users' status quo on continuance intentions*. Information & Management, 59 (8), 103686.
- Grewal, D., A. L. Roggeveen, & J. Nordfält (2017). *The Future of Retailing*. *Journal of Retailing*, 93(1), 1–6. doi:10.1016/j.jretai.2016.12.008.
- Gupta, A., Yousaf, A. & Mishra, A. (2020). How pre-adoption expectancies shape post- adoption continuance intentions: an extended expectation-confirmation model, *International Journal of Information Management*, (52), 102094.
- Guthrie, C., Fosso-Wamba, S. and Arnaud, J.B. (2021). Online consumer resilience during a pandemic: an exploratory study of e-commerce behavior before, during and after a COVID-19 lockdown. *Journal of Retailing and Consumer Services*, (61), 102570.
- Hidayat-ur-Rehman, I., Alzahrani, S., Rehman, M. Z., & Akhter, F. (2022). *Determining the factors of m-wallets adoption. A twofold SEM-ANN approach*. Plos one, 17(1), e0262954.
- Hutapea, R. S., & Wijaya, E. (2021, November). Perceived Risk, Trust, and Intention to Use Fintech Service During the Covid-19 Pandemic. In *2nd International Seminar of Science and Applied Technology (ISSAT 2021)*. (656-661). Atlantis Press.
- Iman, N. (2018). *Is mobile payment still relevant in the fintech era?* *Electronic Commerce Research and Applications*, 30, 72-82.

- Kalakota, R., & Whinston, A. B. (1997). *Electronic commerce: a manager's guide*. Addison-Wesley Professional.
- Kalyani, P. (2016). An empirical study about the awareness of paperless E-currency transaction like E-wallet using ICT in the youth of India. *Journal of management engineering and information technology*, 3(3), 18-41.
- Kamal Metwally, E. (2013). An assessment of users' acceptance of Internet banking: An empirical case of Egypt. *American Academic & Scholarly Research Journal*, 5(5).
- Kamel, S., & Hassan, A. (2006). *Assessing the introduction of electronic banking in Egypt using the technology acceptance model*. In Cases on electronic commerce technologies and applications (296-320). IGI Global.
- Kandil, O., Abd El Aziz, R., Rosillo, R., & De la Fuente, D. (2019). Investigating the Impact of Internet of Things on the Educational Business Process, *In Proceedings of the 13th International Conference on Industrial Engineering and Industrial Management*, 11-12 July 2019, Gijón, Spain.
- Kandil, O. & Abd El Aziz, R. (2018). Evaluating the Supply Chain information flow in Egyptian SMEs using Six Sigma: A Case Study. *International Journal of Lean Six Sigma*, 9(4), Emerald, DOI 10.1108/IJLSS-10-2016-0066.
- Kang, J. (2018). Mobile payment in Fintech environment: trends, security challenges, and services. *Human-Centric Computing and Information Sciences*, 8(32). <https://doi.org/10.1186/s13673-018-0155-4>
- Kapoor, K. K., Dwivedi, Y. K., & Williams, M. D. (2015). *Examining the role of three sets of innovation attributes for determining adoption of the interbank mobile payment service*. *Information Systems Frontiers*, 17, 1039-1056.
- Karjaluoto, H., Töllinen, A., Pirttiniemi, J., & Jayawardhena, C. (2014). Intention to use mobile customer relationship management systems. *Industrial Management & Data Systems*, 114(6), 966-978. <https://doi.org/10.1108/IMDS-11-2013-0480>.
- Karsen, M., Chandra, Y. U., & Juwitasary, H. (2019). *Technological factors of mobile payment: A systematic literature review*. *Procedia Computer Science*, 157, 489-498.

- Kaur, P., Dhir, A., Bodhi, R., Singh, T., & Almotairi, M. (2020). Why do people use and recommend m-wallets?. *Journal of Retailing and Consumer Services*, 56, 102091.
- Khozaei, F., Kim, M. J., Nematipour, N., & Ali, A. (2021). The impact of perceived risk and disease prevention efficiency on outdoor activities and avoidance behaviors in the urban parks during COVID 19 pandemic. (2021). *Journal of Facilities Management*, 19(5), 553–568. available at: <https://doi.org/10.1108/JFM-09-2020-0065>
- Kumar, V., A. Anand, and H. Song (2017). “Future of Retailer Profitability: An Organizing Framework. *Journal of Retailing*, 93(1), 96–119. doi:10.1016/j.jretai.2016.11.003..
- Laudon, K.C. & Traver, C.G. (2002). *E-commerce: business, technology, society*. London: Addison Wesley.
- León, C. (2021). The adoption of a mobile payment system: the user perspective. *Latin American Journal of Central Banking*, 2(4), 100042.
- Lim, S. H., Lee, S., & Kim, D. J. (2017). *Is online consumers’ impulsive buying beneficial for e-commerce companies? An empirical investigation of online consumers’ past impulsive buying behaviors*. *Information Systems Management*, 34(1), 85-100.
- Lu, Yang, Chau, & Cao. (2011). *Dynamics between the trust transfer process and intention to use mobile payment services: A cross-environment perspective*. *Information & Management*, 48(8), 393-403.
- Malek, A. L. (2011). Modeling the antecedents of internet banking service adoption (IBSA) in Jordan: A Structural Equation Modeling (SEM) approach. *Journal of internet banking and commerce*, 16(1), 1.
- MCIT (2019). ICT Indicators in Brief, official report for the Egyptian Ministry of Communication and Information Technology, available at: http://www.mcit.gov.eg/Upcont/Documents/Publications_912020000 ICT_Indicators_in_Brief_November_2019.pdf(accessed January 18, 2020).
- Meng, L., Hua, F., & Bian, Z. (2020). Coronavirus disease 2019 (COVID-19): Emerging and future challenges for dental and oral medicine. *Journal of Dental Research*, 99(5), 481–487. <https://doi.org/10.1177/0022034520914246>

- Mensah, I. K., Adams, S., & Luo, C. (2022). Understanding the Moderating Impact of Context Awareness and Ubiquity on Mobile Government Service Adoption. *International Journal of Information Systems in the Service Sector (IJISSS)*, 14(1), 1-15.
- Mention, A. L. (2019). The future of fintech. *Research-Technology Management*, 62(4), 59-63.
- Mohammadi, H. (2014). *The moderating role of individual and social factors in Internet banking loyalty: an exploratory study*. Transforming Government: People, Process and Policy, 8(3), 420-446.
- Okonkwo, C. W., Amusa, L. B., Twinomurizi, H., & Wamba, S. F. (2022). *Mobile wallets in cash-based economies during COVID-19*. Industrial Management & Data Systems, 123(2), 653-671.
- Patel, P. (2013). Mobile Wallet Technologies: Global Markets. *BCC Research Reports*, BCC Research, Wellesley, MA.
- Phonthanakitithaworn, C., Sellitto, C. and Fong, M. (2015). User intentions to adopt mobile payment services: a study of early adopters in Thailand, *The Journal of Internet Banking and Commerce*, 1(20), 1-29.
- Puriwat, W., & Tripopsakul, S. (2021). Explaining an adoption and continuance intention to use contactless payment technologies: during the COVID-19 pandemic. *Emerging Science Journal*, 5(1), 85-95.
- Q. M. H. Mumtaza, S. I. Nabillah, S. Amaliya, Y. Rosabella and J. A. Hammad (2020). *Worldwide mobile wallet: A futuristic cashless system*, Bulletin of Social Informatics Theory and Application, 2(4), 70-75.
- Rahi, S., Ghani, M., Alnaser, F., & Ngah, A. (2018). Investigating the role of unified theory of acceptance and use of technology (UTAUT) in internet banking adoption context. *Management Science Letters*, 8(3), 173-186.
- Ratnakanth, B. (2019). Secure Authentication Based E-Payment with Intermediate Entities. *International Journal of Computer Science and Information Technologies*, 10(3), 15-20.

- Ribbers, P.M.A. & Heck, E. V. (2004). Introducing electronic auction systems in the Dutch flower industry - a comparison of two initiatives. *Wirtschaftsinformatik*, 4(3), 223-231.
- Safeena, R., Date, H., & Kammani, A. (2011). *Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective*. *Int. Arab. J. e Technol.*, 2(1), 56-64.
- Saraswati, D. A., Desvi, P. S., Putra, N. S., & Hendriana, E. (2021). Examination of the Extended UTAUT Model in Mobile Wallet Continuous Usage Intention during the COVID-19 Outbreak. *Turkish Online Journal of Qualitative Inquiry*, 12(6).
- Sarika, P., & Vasantha, S. (2019). Impact of mobile wallets on cashless transaction. *Int. J. Recent Technol. Eng*, 7(6), 1164-1171.
- Savitz, E. (2013). *Paying with Your Data: The Real Promise of Mobile Wallets*.
- Schuh, S., & Stavins, J. (2016). *How Do Speed and Security Influence Consumers' payment Behavior?*. *Contemporary Economic Policy*, 34(4), 595-613.
- Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). *Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: extending UTAUT with innovativeness, risk, and trust*. *Psychology & marketing*, 32(8), 860-873.
- Sobti, N. (2019). Impact of demonetization on diffusion of mobile payment service in India: Antecedents of behavioral intention and adoption using extended UTAUT model. *Journal of Advances in Management Research*, 16(4), 472-497.
- Sreelakshmi, C. C., & Prathap, S. K. (2020). Continuance adoption of mobile-based payments in Covid-19 context: An integrated framework of health belief model and expectation confirmation model. *International Journal of Pervasive Computing and Communications*, 16(4), 351-369. <https://doi.org/10.1108/IJPCC-06-2020-0069>

- Tan, G. W. H., Ooi, K. B., Chong, S. C., & Hew, T. S. (2014). *NFC mobile credit card: the next frontier of mobile payment?*. *Telematics and Informatics*, 31(2), 292-307.
- Teoh Teng Tenk, M., Yew, H. C., & Heang, L. T. (2020). E-Wallet Adoption: A Case in Malaysia. *International Journal of Research in Commerce and Management Studies*, 2(2), 216-233.
- Thaichon, P., Quach, S., & Ngo, L. V. (2022). Emerging research trends in marketing: A review of Australasian marketing journal. *Australasian Marketing Journal*, 30(3), 214-227.
- Ting, O.S., Ariff, M.S.M., Zakuan, N., Sulaiman, Z. and Saman, M.Z.M. (2016). *E-service quality, E-SAT and E-loyalty of online shoppers in business to consumer market; evidence form Malaysia*, IOP Conference Series: Materials Science and Engineering, 1(131).
- Venkatesh V., Morris M. G. (2000). *Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior*. *MIS Quarterly*, 24(1), 115-139.
- Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. doi: 10.2307/30036540.
- Venkatesh, V., Thong, J., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 1(36), 157-178. doi: 10.2307/41410412.
- Wang, L. and Yi, Y. (2012). *The impact of use context on mobile payment acceptance: An empirical study in China*. In *Advances in computer science and education* (293-299). Springer Berlin Heidelberg.
- Wisniewski, T. P., Polasik, M., Kotkowski, R., & Moro, A. (2021). Switching from Cash to Cashless Payments during the COVID-19 Pandemic and Beyond. NBP Working Papers 337, Narodowy Bank Polski, Economic Research Department. available at. <https://doi.org/10.2139/ssrn.3794790>
- Wu, J., Liu, L. & Huang, L. (2017). *Consumer acceptance of mobile payment across time: Antecedents and moderating role of diffusion stages*, *Industrial Management and Data Systems*, 8(117), 1761-1776.

- Yaqub, M. Z., & Alsabban, A.(2023). *Industry- 4.0- Enabled Digital Transformation: Prospects, Instruments, Challenges, and Implications for Business Strategies. Sustainability, 15(11), 8553.*
- Yousafzai, S., & Yani-de-Soriano, M. (2012). Understanding customer-specific factors underpinning internet banking adoption. *International Journal of bank marketing, 30(1), 60-81.*
- Zhou, R. (2022). Sustainable Economic Development, Digital Payment, and Consumer Demand: Evidence from China. *International Journal of Environmental Research and Public Health, 19(14), 8819.*

دراسة ميدانية للعوامل التجهيزية المؤثرة على تطبيقات المحفظة المحمولة

د. ميران إسماعيل

د. نرمين جوهر

ملخص البحث باللغة العربية

فيما يتعلق بالرقمنة، غزت التطورات في تكنولوجيا المعلومات والاتصالات بشكل عام جميع القطاعات والصناعات الاقتصادية، ومحفظة الهاتف المحمول، هي محفظة رقمية تسمح للمستخدمين بتخزين وإدارة وإجراء المعاملات باستخدام أجهزتهم المحمولة. يبدو أن محفظة الهاتف المحمول هي الاتجاه القادم؛ وهي لا تزال في مهدها ولا سيما في الصناعة المصرفية. ويهدف هذا البحث إلى دراسة تأثير متوسط الأداء المتوقع، ومتوسط الجهد المتوقع، والعوامل الاجتماعية على استعداد العميل لمحفظة الهاتف المحمول من خلال النية السلوكية مع تسليط الضوء على عوامل الوساطة والاعتدال في القطاع المصرفي المصري ودراسة كوفيد-19 واستعداد العملاء مع دور الوساطة للفائدة المتصورة من خلال إجراء 500 استبيان على البنوك. وقد تم تحليل البيانات التي تم جمعها إحصائياً باستخدام نمذجة الانحدار والمعادلة الهيكلية. أظهرت النتائج تأثيراً كبيراً لجميع العوامل قيد الدراسة، ويتأثر استعداد محفظة الهاتف المحمول بشكل مباشر بمستوى الأداء المتوقع، ومتوسط الجهد المتوقع، والعوامل الاجتماعية داخل البنوك في مصر في ضوء النية السلوكية.

الكلمات الدالة: تطبيقات محفظة الهاتف المحمول؛ الاستعداد؛ تحديات الرقمنة؛ القطاع المصرفي للتكنولوجيا المالية ونمذجة المعادلة الهيكلية.

Suggested Citation according to the APA Style

Gohar, N., Ismail, M. (2024). Investigating Factors Affecting Readiness to M-Wallet Applications. *Journal of Alexandria University for Administrative Sciences*, 61(2), 163- 196.

All rights reserved © 2024