

## PREDICTING MOBILE BANKING ADOPTION: AN INTEGRATION OF TAM AND TPB WITH TRUST AND PERCEIVED RISK

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### Abstract

Mobile banking has been a game changer for financial organizations in terms of remote banking services. However, many customers remain uncertain due to its security. Therefore, improving the comprehension of the customer's reasons and methods of using bank sites, including their behaviour towards e-banking, is crucial. This article discusses the matter by suggesting a technology acceptance model that integrates the theory of the planned behavior model in the classic TAM model with trust and perceived risk in order to elucidate the aspects that influence users' acceptance of mobile banking applications in Palestine. This study is designed to give both theoretical and empirical support for e-commerce adoption. We are also capable in providing particular marketing ideas for practitioners in relation to the uptake of mobile banking.

**JEL classification:** O1, O16

**Keywords:** TAM, TPB mobile banking, perceived risk, trust, Palestine

Received: 20.04.2021

Accepted: 10.08.2021

### Cite this:

Aldammagh Z., Abdeljawad R., Obaid T. (2021) Predicting mobile banking adoption: an integration of TAM and TPB with trust and perceived risk. *Financial Internet Quarterly* 17 (3), pp. 35-46.

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## INTRODUCTION

Mobile banking, as one of the avant-garde and modern technologies, is an example of an excellent breakthrough in mobile technology in the banking sector, allowing consumers to make financial transactions independently using mobile devices, smartphones, or Personal Digital Assistants (PDAs) at their preferred time and location (Ali A Alalwan, Dwivedi, Rana, & Simintiras, 2016; Karjaluoto, Püschel, Mazzon, & Hernandez, 2010).

According to Lin (2013), banks appear to be increasingly driven to incorporate mobile banking channels into their logistical systems, and significant financial and technical resources have been invested in this effort. As a result, banks worldwide have spent over \$115 billion to integrate mobile banking technology into their systems (Ali Abdallah Alalwan, Dwivedi, & Rana, 2017). This surge in mobile banking could be linked to new advancements in mobile and telecommunications technology at first. Moreover, this revolution delivers solutions that enable banks to easily service their customers with the highest quality over wide territories, especially where internet networks or the establishment of traditional branches are restricted (Wessels & Drennan, 2010).

Furthermore, by expanding the number of mobile users worldwide, the potential market for mobile banking systems will grow and captivate more clients, thus meeting the needs of both customers and banks (Ali A Alalwan, et al., 2016; Gu, Lee, & Suh, 2009; Wessels & Drennan, 2010). For instance, according to Compete, the total number of mobile banking users is predicted to extend to 1 billion (Ali Abdallah Alalwan, et al., 2017).

However, the utilization price of mobile banking services is not as high as projected, particularly in developing nations, and customers show little interest in such services (Hanafizadeh, Behboudi, Koshksaray, & Tabar, 2014; Hanafizadeh, et al., 2014; Purwanegara, Apriningsih, & Andika, 2014; Weerakkody, El-Haddadeh, Al-Sobhi, Shareef, & Dwivedi, 2013). According to a survey conducted by KPMG International in 2009, which interviewed over 4000 mobile services users in 19 countries worldwide (Cruz, Neto, Munoz-Gallego, & Laukkanen, 2010), mobile banking users accounted for 19% of all mobile phone users. Similarly, when more new banking technology emerges, Palestinian banking clients showed decreased enjoyment and enthusiasm in online banking channels in general and viewed mobile banking as a new technology (Hanafizadeh, et al., 2014).

As a result, it may be claimed that the largest hurdle for this technology's success is persuading people to utilize it as a permanent replacement for existing channels (Laukkanen, Sinkkonen, Kivijärvi, & Laukkanen, 2007). In reality, because mobile banking is still in its infancy in underdeveloped countries, like Palestine, several scholars (Khrewesh, 2011; Khodakarami & Chan, 2013; AbuShanab, Pearson, & Setterstrom, 2010; Tarhini, El-Masri, Ali, & Serrano, 2016; Jouda, Abu Jarad, Obaid, Abu Mdallah, & Awaja, 2020), have looked into the challenges surrounding this technology. They also demand more information in the Palestinian context. As a result, the gap in the literature on mobile banking may be summarized as the need to propose a theoretical model that best defines the adoption of mobile banking from the perspective of Palestinian clients. Furthermore, modern statistical tools such as structural equation modelling (SEM) should be used to analytically examine pertinent aspects influencing mobile banking intention and usage in Palestine. As a result, in order to close this gap, the purpose of this study is to empirically evaluate the most relevant elements that could affect Palestinian customers' willingness to use mobile banking.

## LITERATURE REVIEW

Evaluating and understanding client intent and the adoption of mobile banking is a focus for scholars and practitioners around the world currently, and the related literature of online banking channels has experienced a dramatic growth (Purwanegara, et al., 2014; Zhou, 2012a). Indeed, researchers are gradually attempting to explain how customers create their views, attitudes, intentions, and behavior regarding mobile banking utilizing various techniques and theoretical underpinnings (Ali A Alalwan et al., 2016, Hanafizadeh et al., 2014).

Laforet and Li (2005) looked into the elements that influence online banking acceptance and usage in China. They looked into the issue of gender and discovered that the majority of internet banking users in China are men. Furthermore, security is one of the variables influencing M-banking acceptance, but risk, computing, skills required to use new technologies, and culture are barriers to M-banking adoption in that country. Hanafizadeh and Khedmatgozar (2012) tried to find out if bank customers' understanding of the services and benefits of IB is successful in minimizing the adverse influence of customers' perceived risk on their desire to embrace IB. The findings revealed that IB awareness is a factor in lowering all dimensions of per-

ceived risk (including time, financial, performance, social, security, and privacy risks). Furthermore, it is discovered that, with the exception of social risk, other variables of perceived risk have a considerable negative impact on IB adoption desire.

Sharma and Sharma (2019) looked into Saudi Arabia's embrace of online banking. The study's findings concern the internet connection's quality. The perceived usefulness and perceived ease of use of online banking are positively ruled by understanding of online banking and its benefits, social influence, and computer self-efficacy. Education, trust, and aversion to change all factor in attitudes toward the possibility of internet banking adoption in this study.

Nyeko, Moya, Kabaale, and Odongo, (2014) looked into the factors that influence internet banking adoption in Oman. The results reveal the concerns about security and data confidentiality as key impediments to internet banking adoption. Support from upper management was also a stumbling block to the deployment of electronic commerce applications. The banks in Oman were "very slow" to establish e-banking services, according to this survey. While they believe that online services cut costs greatly, a combination of client concerns, technical investment costs, and a lack of market awareness all make e-banking "unattractive." Nasri and Charfeddine (2012) conducted research into the elements that influence internet banking adoption in Tunisia. The technology acceptance model (TAM) and the theory of planned behaviour were applied (TPB). In addition to perceived usefulness, perceived ease of use, attitude, social norms, perceived behaviour control, and intention to use internet banking, their model included security and privacy, self-efficacy, government assistance, and technology assistance. The adoption of internet banking was affected for several reasons.

Karjaluoto, Riquelme, and Rios (2010) looked into the moderating effect of gender on mobile banking uptake. The research aimed to analyze what attracts present online banking users in Singapore to adopt mobile banking, with gender as an operating variable. Research revealed that utility, social norms and social risk are the three elements which are the most impactful on the desire to use mobile banking services. Female respondents are more affected by ease of use than male users, and male respondents are more affected by relative advantage in terms of perceived utility. Female respondents are more greatly affected by social norms (or the importance of others in the decision) than male respondents. Abdul-Hamid, Shaikh, Boateng, and Hinson (2019) compared internet banking practices in Malaysia and Thailand. Based on the result,

these countries differ in the basic services provided by their commercial banks. The usefulness of internet banking in both nations was further harmed by the belief that there was a lack of effort put into educating people about internet banking.

Hinson (2011) conducted research on mobile banking for the underprivileged. If the traditional financial setup does not allow the poor to access financial services such as banking, the poor could be offered banking services through mobile technology, according to this study. The study developed a Mobile Banking Model, which theorized the fundamental ways in which mobile phone technology may be leveraged to improve impoverished people's access to banking. Singh and Kaur (2012) did research to compare pre-login and post-login features of online portals from banks of choice. According to the findings, certain banks' online portals differ in terms of account information, fund transfers, online requests, and general information. Sripalawat, Thongmak, and Ngramyarn (2011) looked at the elements influencing the acceptance of M-banking, both on the adoption and barrier sides, in order to investigate the consequences of factors, to guide banks and financial firms in gaining more clients, and to compare the differences and similarities of M-banking triumph factors across countries. Findings revealed the positive factors to have a greater impact on M-banking intention than negative factors.

Cruz et al. (2010) investigated the barriers to M-banking adoption among Brazilian internet users. The data revealed that the majority of customers have never utilized these services. The primary impediments to utilizing M-banking services, according to them, are risk, expense, complexity, and little understanding about the corresponding benefits of the services. In their study, Cruz et al. (2010) also looked at the elements that influence M-banking adoption. They were looking for roadblocks. Use, value, risk, tradition, and image were among the variables considered. The study revealed that providing information and assistance by banks has a substantial impact on lowering usage barriers, image, value, and risk in M-banking, but proved no impact on lessening the tradition barriers.

Wessels and Drennan (2010) did a test on analyzing the important elements encouraging and discouraging M-banking adoption, including the effect of a user's attitude on intention to use. Research revealed that perceived usefulness, perceived risk, cost, and compatibility all affects M-banking uptake. The attitude toward M-banking was used as a moderating variable in this study. Karjaluoto, Koenig Lewis, Palmer, and Moll (2010) conducted research titled Predicting the Contin-

ued Use of M-Banking Services by Young Users in England, with the goal of investigating M-banking adoption hurdles. Compatibility, perceived utility, and risk were key factors influencing M-banking uptake, based on the research. Compatibility is recognized as the foremost important independent variable determining perceived ease of use, perceived utility, and credibility, and it had a considerable positive effect on M-banking uptake. The characteristics of trust and credibility were noted to be substantial on lowering overall perceived risk.

Zhou (2012b) looked into the impact of trust on M-banking adoption. He deduced that rudimentary assurance and quality of facts are important aspects in establishing initial trust, and that information quality and system quality have a substantial effect on perceived use. He also came to the conclusion that trusts influences perceived use, and that the two elements affect the desire to utilize M-banking. M-banking adoption among young individuals was researched by (Akturan & Tezcan, 2012). Using the TAM model and the risks associated with M-banking adoption, they discovered that perceived use, social risk, performance risk, and perceived advantages all have a straight impact on people's attitudes. Attitude has a direct impact on the desire to use.

To sum up, while these studies have given us a better knowledge of the main elements that influence customer intention to use mobile banking, there are still several key points that demand clarification. The current study integrates components from the technology acceptance model (TAM) and theory of planned behavior (TPB) with perceived risk to forecast mobile banking uptake in Palestine, providing a foundation for further model refinement.

## RESEARCH MODEL AND PROPOSITIONS

The advance technology acceptance model, which combines the theory of planned behavior model in the classic TAM model with perceived risk, was specifically introduced to clarify technology adoption via the consumer's perspective. TAM and TPB were frequently utilized to examine IT usage and e-service adoption throughout previous years (Shen, Huang, Chu, & Hsu, 2010). TAM and TPB, on the other hand, were not consistent in providing superior explanations or behavioral predictions (Chen, 2012). Because the two models are complementary, a growing body of research concentrated on integrating the models to investigate IT usage and e-service acceptance. The results have shown that the integration model has better exploratory power than the individual use of TAM and TPB (Glavee-Geo,

Shaikh, & Karjaluoto, 2017). Since this study focuses on mobile banking service adoption, which is an example of innovative technology acceptance that is interlaced with social systems and personal characteristics, the utilization of TAM and TPB in the research structure should be broad in order to examine consumers' intentions and acceptance of mobile banking.

TAM is a modification of Ajzen and Fishbein (1975)'s theory of reasoned action (TRA) and was created to model user adoption of information technology (Davis, 1989). Two essential components in the TAM basic model predict behavioral intention to use: perceived usefulness and perceived ease of use. Davis (1989) termed perceived usefulness as the "degree to which an individual believes that employing a given method would boost his or her performance". On the other hand, perceived ease of use means "the degree to which a person believes that utilizing a certain system would be painless". As the system gets more beneficial and simple to use, individuals will want to utilize it more frequently. Otherwise, they will select any other system that meets the user's requirements. Furthermore, when users do not have to devote as much time learning or figuring out the way to use the system, it is thought to be more useful. As a result, perceived ease of use has a positive impact on perceived usefulness. Several studies regarding literature on mobile banking (Karjaluoto, Koenig-Lewis, et al., 2010) corroborate links outlined in TAM.

The TPB that underpins the TRA endeavor was found effective in predicting and explaining human behavior using various information technologies (Ajzen, 2002). According to TPB, an individual's real actions in doing specific acts is directly controlled by his or her behavioral intention, which is in turn influenced by his or her attitude, subjective norms, and perceived behavioral controls. The degree of one's willingness to put effort into performing various activities is measured by behavioral intention. An individual's favorable or unfavorable attitude (A) explains their evaluation of the action in question. Furthermore, the strength of the conduct and perceptions about the anticipated consequence are directly influenced by a favorable or unfavorable attitude. The perceived organizational or social pressure of a person who plans to perform the action in question is expressed as a subjective norm (SN). Karjaluoto, Riquelme, et al. (2010) stated that Subjective Norms (SN) have a sizeable impact on the adoption of M-banking services, according to their recent study. Their research was further backed up after they revealed that SN is one of the essential factors in persuading people to utilize mobile banking.

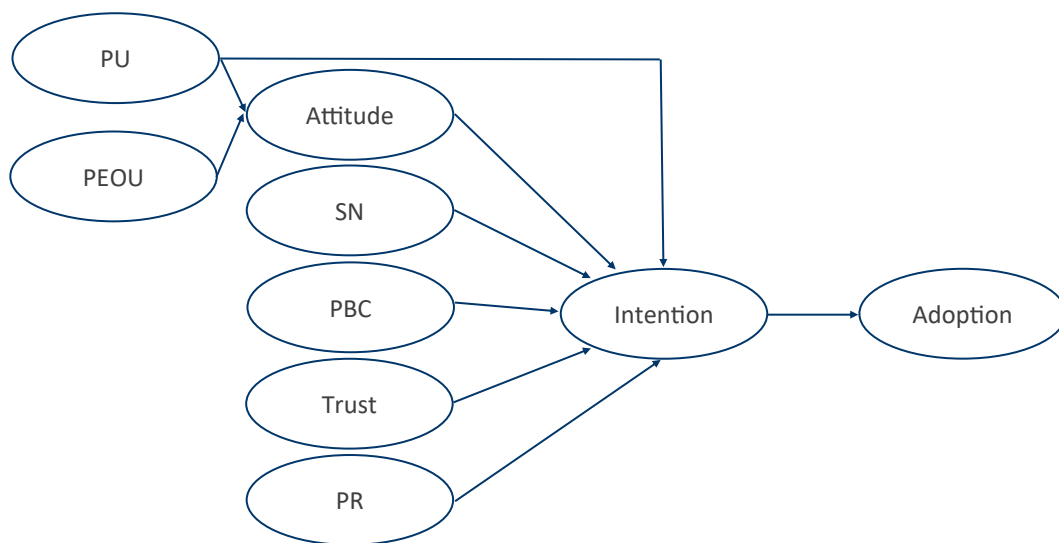
Perceived behavioral control (PBC) refers to a person's perception of how easy or difficult it is to carry out a certain behavior. It is concerned with their perceptions of the presence of control elements that could aid or hinder their behavior's performance. Furthermore, (Aboelmaged & Gebba, 2013) claimed that a user's perception of behavioral control has a direct consequence on their willingness to utilize the internet for online shopping. Furthermore, (Karjaluoto, Püschel, et al., 2010) discovered that behavioral control has a major consequence on the desire to use mobile banking.

In the previous mobile banking literature, trust (TR) was regarded as an evaluative aspect in shaping a customer's view of and willingness to adopt such technology (Ali Abdallah Alalwan, Dwivedi, Rana, & Williams, 2016, Hanafizadeh, et al., 2014; Luo, et al., 2010; Zhou, 2011, 2012). It is possible that this matter is linked to

the unique nature of electronic banking services, which are marked by significant unpredictability, as well as the nature of financial services, which could be described as a high-risk product (Hanafizadeh et al., 2014).

In this study, perceived risk shows that feelings like worry, concern, discomfort, ambiguity, and cognitive dissonance may impact consumers' decisions during the E-payment process (Cheah, Teo, Sim, Oon, & Tan, 2011) emphasised the relevance of risk in E-payment, particularly in the financial business, where the E-PaySIM™ E-payment is likewise governed by Bank Negara guidelines. Consumers evaluate banking relationships based on their level of trust and their perception of risk, assuming that the bank is acting in their best interests (Al-alak & Alnawas, 2010). As a result, in this study, trust and perceived risk have been introduced to the Model.

**Figure 1: The proposed Research Model**



Source: Own work of Author's.

The following experimentation hypotheses were established based on the developed model. It is a requirement for us to investigate the subsequent TAM and TPB hypotheses in the context of online banking adoption as TAM and TPB are the base models. TAM is used to offer hypotheses 1, 2, 5, 6, and 7, while TPB is used to propose hypotheses 3 and 4.

### **PERCEIVED USEFULNESS (PU)**

Many factual studies discovered that perceived usefulness has a notable and good impact on the intention to use (Alavi & Ahuja, 2016; Munir & Ilyas, 2017, Priya, Gandhi, & Shaikh, 2018). According to (Tam & Oliveira, 2017), intention to use mobile banking is

also influenced by perceived usefulness. In the study, perceived usefulness was found to have a favorable effect on behavioral intention to utilize mobile banking services. Mobile banking services are used by consumers who believe they are useful. According to the findings of Sharma and Sharma (2019), perceived usefulness in relation to mobile banking had a substantial impact on the intention to use for management students. Perceived usefulness was identified as one of the most important aspects that influence the intention to adopt information technology.

H1: Perceived usefulness positively influences the intention to use mobile banking.

## ATTITUDE (AT)

Many studies in the field of e-business have found that an individual's attitude has a straightforward and considerable influence on their behavioral intention to employ a specific e-business application (Cudjoe, Anim, & Nyanyofio, 2015). For example, George (2004) discovered a favorable association connecting a person's attitude regarding online shopping and their behavioral intention. The adoption of wireless technology by users was investigated by Aboelmaged and Gebba (2013). In addition, Karjaluoto, Püschel, et al. (2010) found that attitude had a considerable influence on intent to use mobile banking.

They agreed that there is a line connecting views about adopting mobile commerce/banking and behavioral intent. As a result, the following theory is put forth:

H2: Attitude positively influences the desire to use mobile banking.

## SUBJECTIVE NORMS: (SN)

Subjective norms are eluded as an individual's "perception that the majority of key individuals in his life believe he should or should not conduct the behavior in question" (Ajzen & Fishbein, 1975). A recent study by (Karjaluoto, Koenig-Lewis, et al., 2010; Karjaluoto, Riquelme, et al., 2010) revealed that SN has notable impact on the M-banking services adoption. The study was backed up by Karjaluoto, Püschel, et al. (2010), which revealed that SN is a paramount important factor in persuading people to utilize mobile banking.

SN is defined as "perceived societal pressure toward adoption decisions," according to Ajzen (2002). Karjaluoto, Püschel, et al. (2010) went on to say that

friends, relatives, and others in the same social group were the main sources of social pressure. As a result, the study merely shows that social pressure to use m-banking services will most likely impact consumers' adoption of the services. As a result, the following theory is put forth.

H3: Subjective norm has positively influenced the intention to use mobile banking.

## PERCEIVED BEHAVIORAL CONTROL (PBC)

Perceived behavioral control is a measure of how much people perceive they have power over performing the activity of interest. Individuals are said to be more eager to participate in actions over which they have power to control and participate less in actions in which they feel powerless. Consequently, an individual who believes he is competent for a particular action will display a behavioral intention to act.

Perceived behavioral control was counted as a good indicator of usage intention in previous research on online technology adoption (Baptista & Oliveira, 2015; Aboelmaged & Gebba, 2013). A user who believes he or she is capable of utilizing an e-business application will demonstrate a behavioral intent to use that application. Luo, Li, Zhang and Shim (2010) projected that users' perceived behavioral control may impact their desire to seek online options. This study investigates the following hypothesis based on the preceding argument:

H4: The intention to use mobile banking is positively influenced by perceived behavior control.

In turn, two major aspects controlling the technology function, perceived ease of use and perceived usefulness, determine TAM attitude (Davis, 1989; Igbaria, Parasuraman, & Baroudi, 1996). Mathieson, Peacock and Chin (2001) suggested that TAM is superior to other multi-attribute models like TRA and TPB at explaining stance on using an information system. "TAM reliably explains a considerable fraction of the variance [usually approximately 40%] in usage intentions and behavior, and TAM compares favorably with competing models such as the Theory of Reasoned Action and the Theory of Planned Behavior," according to (Venkatesh & Davis, 2000). TAM claims that a person's stance on using the system is influenced by their perceived usefulness. Employees in a performance-oriented e-business context are often rewarded for good performance and perks, according to Yang, Wong, Lai and Ntoko (2009). This means that recognizing the value of

e-business tools like mobile banking in boosting operations or productivity could have a favorable result on how people feel about them. Many studies have confirmed the influence of perceived utility on attitude, including (Hanudin, Baba, & Muhammad, 2007) and (Porter & Donthu, 2006). Therefore, the following hypothesis is advised:

H5: Perceived usefulness positively influences attitudes towards the use of mobile banking.

The complexity of a single system will act as an impediment to the acquisition of an invention. Rogers (1995) stated perceived ease of use as "a person's belief that using the system will be devoid of mental effort." According to TAM, a person's stance on using the system is influenced by perceived ease of use. By existing research, the simplicity of use of e business applications such as internet commerce (Van der Heijden, Verhagen, & Creemers, 2003), online banking (Guriting & Ndubisi, 2006), and mobile commerce (Luarn & Lin, 2005) is a key feature. Users would be concerned about the amount of time and effort required to utilize the program, as well as the intricacy of the procedure. Individual experiences should be positive and appealing as a result of the perceived ease of exploring, analyzing details, and conducting purchases (Porter & Donthu, 2006; Van der Heijden, et al., 2003). As a result, the following hypothesis is investigated in this study:

H6: The perceived ease of use has a beneficial impact on attitudes towards mobile banking.

According to TAM, the perceived usefulness of technology is influenced by its simplicity of use. The larger the predicted benefits from a technology in terms of performance enhancement, the easier it is to utilize. This association has also been confirmed in the context of online technologies (Gefen, Karahanna, & Straub, 2003; McCloskey, 2006; Morosan & Jeong, 2008). We suggest the following hypothesis based on these arguments:

H7: The perceived usefulness of using mobile banking is influenced by perceived ease of usage.

## TRUST (TR)

The explanation of consumer's trust in mobile banking is known as the collection of a consumer's beliefs on ethics, compassion, as well as ability that may boost a consumer's disposition to count on mobile banking to complete financial transactions (Gefen, et al., 2003). Trust has been researched on a large scale and has been found to be an essential element in de-

termining client perceptions and intentions toward mobile banking (Hanafizadeh, et al., 2014). Trust, for example, has been shown to have huge consequences on a customer's aim (Karjaluto, Koenig Lewis, et al., 2010; Luo, et al., 2010). Zhou (2012b) validated trust as a major element establishing the probability of clients using mobile banking in his study to analyze the factors predicting customers' initial trust in mobile banking. Trust and perceived credibility have been identified as significant drivers for the adoption of mobile banking by Iranian bank clients (Hanafizadeh, et al., 2014; Jouda, 2020). In relation to Gefen's, et al., 2003 research, customers' intent to utilize mobile banking are thought to be influenced directly by trust, and it could indirectly impact BI by raising the importance of relative advantage. As a result, the following theory is proposed in this study:

H8: Perceived Trust has a favorable impact on consumers' desire to use mobile banking.

## PERCEIVED RISK (PR)

The tech-influenced risks stemming from infrastructure, as well as relational risk stemming from a service provider's behavior are the two elements of perceived risk (Akturan & Tezcan, 2012). Service providers are not able operate more properly than what was expected in the matter of dependability, instead opting for opportunism by taking advantage of unpredictable transactions (Akturan & Tezcan, 2012). Furthermore, due to the security weakness connected with mobile application technology, there is always the risk of mobile applications being hacked. Users' trust in mobile banking is eroded as a result of technological and relational hazards, which reduces their intention to utilize mobile banking. Furthermore, consumers will choose to use branch banking or other traditional channels over mobile banking when the perceived risk is large. There has been various research that show a link between perceived risk and intention to use (Hanafizadeh, et al., 2014), (Chitungo & Munongo, 2013) and (Akturan & Tezcan, 2012). Thus, the following hypothesis is proposed.

H9: Risk perception has a detrimental impact on the desire to use mobile banking

## RESEARCH METHODS

### OPERATIONALIZATION OF RESEARCH VARIABLES

The data collection method for measuring the key variables was either produced by adapting existing

measures to the context of research or by transforming construct formulations into a survey form. On a five-point Likert scale, all variables were evaluated. Table 1 summarized the different research variables and their dimensions, as well as the source of measuring scales.

### RESEARCH INSTRUMENT VALIDATION

A total of 92 full-time students from two major universities in Gaza participated in a pretest of the research tool. Several items were refined as a result of the pretest. Some of the preliminary constituents were discovered to be ambiguous expressions of the research constructs, thus they were removed. A second pilot study was carried out with full-time undergradu-

ate students using an online version of the instrument. The layout and operation of the online form were the focus of this test. The validity of the measures employed for study constructs are verified using principal component analysis with varimax rotation after the final data collection.

### SAMPLE

The data from the study are to be gathered via the internet from the websites of two large banks that offer internet banking. For a few days, banner adverts will be used to elicit responses from the above web sites. We anticipate receiving 250 replies to the survey.

**Table 1: Constructs of the Research Model**

Construct	Reference	Items
Intention to use mobile banking	(Luarn & Lin, 2005)	My overall desire to use mobile banking is strong. In the near future I plan to increase my use of mobile banking.
Perceived usefulness	(Luarn & Lin, 2005)	Using mobile banking to make banking operations would boost my efficiency It would be easier for me to execute banking transactions if I used mobile banking. I'd want to use mobile banking to conduct my banking operations.
Perceived ease of use	(Luarn & Lin, 2005)	For me, learning how to use mobile banking is simple. It would be simple for me to learn how to use mobile banking. Mobile banking would be simple for me to utilize. Using mobile banking is inconvenient since I have to remember the access code each time I want to conduct another banking activity.
Perceived risk	(Luarn & Lin, 2005)	Mobile banking companies, in my opinion, are reliable. I am certain that my transactions with mobile banking companies will be secure. My personal information would not be disclosed if I used mobile banking. In doing my banking transactions, I would find mobile banking to be secure.
Subjective norms	(Yang et al., 2009)	People who are significant to me are in favor of my using mobile banking services. People that have sway over my decisions want me to use mobile banking instead of any other option. People who I respect have recommended that I use mobile banking services.
Perceived Behavioral Control	(George, 2004)	I know how to use mobile banking. I have complete control over how I use mobile banking. I have the knowledge and competence to use mobile banking, as well as the resources (e.g., references, user's handbook, etc.).

Trust	(Hanafizadeh & Khedmatgozar, 2012)	I'd put my trust in my bank to provide safe mobile banking. I would trust my phone manufacturer to deliver a phone that is suitable for mobile banking. I'd put my faith in my telecommunications provider to offer safe data connections for mobile banking.
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Source: Own work of Author's.

## EXPECTED CONTRIBUTION

The results of this study are supposed to reveal that trust in the e-channel and trust in the bank have a reverberation on mobile banking uptake. We are able to acknowledge the factors of these two variables on adoption behavior one step ahead if we separate the effects of trust from those of perceived risks. The findings of this study are anticipated to give both conceptual and factual confirmations of the distinctions connecting mobile banking adopters and non-adopters. In addition, we are capable of providing precise marketing strategy advice for practitioners to help speed up the validation of mobile banking, which will benefit bank clients.

## CONCLUSION AND RECOMMENDATIONS

This study plans to analyze the elements that influence consumers' intentions to use mobile banking in the Palestinian banking sector. To do so, the researcher employs the DTPB (ATT, PBC, SNS) and extends the DTPB by including a new determinant called perceived Trust (PT), which was derived from previous research.

According to the results of the experiments, the PT has a significant favorable impact on consumer intentions. According to these findings, banks should devote their full attention to enabling new customers to be confident that the services provided are trustworthy by including a trademark, and come up with a better security proof on the mobile application and the bank's website in order to obtain and improve service quality, resulting in the acquisition of new clients and the retaining of existing ones. Furthermore, the study found that SN had detrimental consequences on consumers' willingness to utilize mobile banking services. This demonstrates that Palestinian customers have their own culture and are unaffected by the opinions of others. The current study also suggests that subsequent analysis may concentrate on this characteristic and disclose the elements that influence it. Because the current study's findings are limited to the Palestinian banking sector, the study includes recommendations and advice for future researchers to continue these studies and conduct more analysis on the effect of trust on consumer's intent in various sectors and countries in order to generalize the findings.

## REFERENCES

- Abdul-Hamid, I.K., Shaikh, A.A., Boateng, H., Hinson, R.E. (2019). Customers' Perceived Risk and Trust in Using Mobile Money Services—an Empirical Study of Ghana. *International Journal of E-Business Research (IJEER)*, 15(1), 1-19.
- Aboelmaged, M., Gebba, T. R. (2013). Mobile Banking Adoption: an Examination of technology Acceptance Model and theory of planned behavior. *International Journal of Business Research and Development*, 2(1), 35-50.
- AbuShanab, E., Pearson, J.M., Setterstrom, A.J. (2010). Internet Banking and Customers' Acceptance in Jordan: the Unified Model's Perspective. *Communications of the Association for information systems*, 26(1), 23.
- Ajzen, I. (2002). Perceived Behavioral Control, Self-efficacy, Locus of Control, and the Theory of Planned Behavior 1. *Journal of applied social psychology*, 32(4), 665-683.
- Ajzen, I., Fishbein, M. (1975). A Bayesian Analysis of Attribution Processes. *Psychological bulletin*, 82(2), 261.
- Akturan, U., Tezcan, N. (2012). Mobile Banking Adoption of the Youth Market. *Marketing Intelligence & Planning*, Vol. 30 Iss: 4 pp. 4 - 4.

- Al-alak, B.A., Alnawas, I. (2010). Evaluating the Effect of Marketing Activities on Relationship Quality in the Banking Sector: The Case of Private Commercial Banks in Jordan. *International Journal of Marketing Studies*, 2(1), 78-91.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N.P. (2017). Factors Influencing Adoption of Mobile Banking by Jordanian Bank Customers: Extending UTAUT2 with Trust. *International Journal of Information Management*, 37(3), 99-110.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N.P., Simintiras, A.C. (2016). Jordanian Consumers' Adoption of Telebanking. *International Journal of Bank Marketing*, 34(5), 690-709.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N. P., & Williams, M. D. (2016). Consumer Adoption of Mobile Banking in Jordan. *Journal of Enterprise Information Management*, 20(2), 145-157.
- Alavi, S., Ahuja, V. (2016). An Empirical Segmentation of users of Mobile Banking Apps. *Journal of Internet Commerce*, 15(4), 390-407.
- Baptista, G., Oliveira, T. (2015). Understanding Mobile Banking: The Unified Theory of Acceptance and Use of Technology Combined with Cultural Moderators. *Computers in Human Behavior*, 50, 418-430.
- Cheah, C.M., Teo, A.C., Sim, J.J., Oon, K.H., Tan, B.I. (2011). Factors Affecting Malaysian Mobile Banking Adoption: An Empirical Analysis. *International Journal of Network and Mobile Technologies*, 2(3), 149-160.
- Chen, S.C. (2012). To Use or Not to Use: Understanding the Factors Affecting Continuance Intention of Mobile Banking. *International Journal of Mobile Communications*, 10(5), 490-507.
- Chitungo, S.K., Munongo, S. (2013). Extending the Technology Acceptance Model to Mobile Banking Adoption in Rural Zimbabwe. *Journal of Business Administration and Education*, 3(1), 57-79.
- Cruz, P., Neto, L.B.F., Munoz-Gallego, P., Laukkanen, T. (2010). Mobile Banking Rollout in Emerging Markets: Evidence from Brazil. *The International Journal of Bank Marketing*, 28(5), 342-371.
- Cudjoe, A.G., Anim, P.A., Nyanyofio, J.G.N.T. (2015). Determinants of Mobile Banking Adoption in the Ghanaian Banking Industry: a Case of Access Bank Ghana Limited. *Journal of Computer and Communications*, 3(02), 1.
- Davis, F.D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS quarterly*, 319-340.
- De Leon, M.V. (2019). Factors Influencing Behavioural Intention to Use Mobile Banking Among Retail Banking Clients. *Jurnal Studi Komunikasi*, 3(2), 118-137.
- Gefen, D., Karahanna, E., Straub, D.W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, 27(1), 51-90.
- George, J.F. (2004). The Theory of Planned Behavior and Internet Purchasing. *Internet Research*. Vol. 14(3), 198-212.
- Glavee-Geo, R., Shaikh, A.A., Karjaluto, H. (2017). Mobile Banking Services Adoption in Pakistan: are there Gender Differences? *International Journal of Bank Marketing*, 35(7), 1088-1112.
- Gu, J.-C., Lee, S.-C., Suh, Y.-H. (2009). Determinants of Behavioral Intention to Mobile Banking. *Expert Systems with Applications*, 36(9), 11605-11616.
- Guriting, P., Ndubisi, N.O. (2006). Borneo Online Banking: Evaluating Customer Perceptions and Behavioural Intention. *Management Research News*, 29(1/2), 6-15. <https://doi.org/10.1108/01409170610645402>.
- Hanafizadeh, P., Behboudi, M., Koshksaray, A.A., Tabar, M.J.S. (2014). Mobile-banking Adoption by Iranian Bank Clients. *Telematics and Informatics*, 31(1), 62-78.
- Hanafizadeh, P., Khedmatgozar, H.R. (2012). The Mediating Role of the Dimensions of the Perceived Risk in the Effect of Customers' Awareness on the Adoption of Internet Banking in Iran. *Electronic Commerce Research*, 12(2), 151-175.
- Hanudin, A., Baba, R., Muhammad, M.Z. (2007). An Analysis of Mobile Banking Acceptance by Malaysian Customers. *Sunway Academic Journal*, 4, 1-12.

- Hinson, R.E. (2011). Banking the Poor: The Role of Mobiles. *Journal of Financial Services Marketing*, 15(4), 320-333.
- Igbaria, M., Parasuraman, S., Baroudi, J.J. (1996). A Motivational Model of Microcomputer Usage. *Journal of Management Information Systems*, 13(1), 127-143.
- Jouda, H. (2020). Expanding TAM and Investigating the Factors that Effect Consumer Intention to Adopt Mobile Banking in Palestine. *Financial Internet Quarterly*, 16(3), 29-50.
- Jouda, H., Abu Jarad, A., Obaid, T., Abu Mdallalah, S., Awaja, A. (2020). Mobile Banking Adoption: Decomposed Theory of Planned Behavior with Perceived Trust. Available at SSRN 3660403.
- Karjaluoto, H., Koenig-Lewis, N., Palmer, A., Moll, A. (2010). Predicting Young Consumers' Take up of Mobile Banking Services. *International Journal of Bank Marketing*, 28(5), 410-432.
- Karjaluoto, H., Püschel, J., Mazzon, J.A., Hernandez, J.M.C. (2010). Mobile Banking: Proposition of an Integrated Adoption Intention Framework. *International Journal of Bank Marketing*, 28, 389-409.
- Karjaluoto, H., Riquelme, H.E., Rios, R.E. (2010). The Moderating Effect of Gender in the Adoption of Mobile Banking. *International Journal of Bank Marketing*, 28, 328-341.
- Khodakarami, F., Chan, Y.E. (2013). An Investigation of Factors Affecting Marketing Information Systems' Use. *Journal of Marketing Development and Competitiveness*, 7(2), 115-121.
- Khrewesh, A.H. (2011). *E-banking Adoption Model in Palestine*. Master Thesis, Retrieved from: [https://staff-old.najah.edu/sites/default/files/e\\_banking\\_adoption\\_model\\_in\\_palestine.pdf](https://staff-old.najah.edu/sites/default/files/e_banking_adoption_model_in_palestine.pdf).
- Laforet, S., Li, X. (2005). Consumers' Attitudes Towards Online and Mobile Banking in China. *International Journal of Bank Marketing*, 23, 362-380.
- Laukkanen, P., Sinkkonen, S., Kivijärvi, M., Laukkanen, T. (2007). *Consumer Resistance and Intention to use Internet banking service*. Paper presented at the Proceedings of the EBRF Conference, Jyväskylä, Finland.
- Lin, H.-F. (2013). Determining the Relative Importance of mobile Banking Quality Factors. *Computer Standards & Interfaces*, 35(2), 195-204.
- Luarn, P., Lin, H.-H. (2005). Toward an Understanding of the Behavioral Intention to Use Mobile Banking. *Computers in Human Behavior*, 21(6), 873-891.
- Luo, X., Li, H., Zhang, J., Shim, J.P. (2010). Examining Multi-dimensional Trust and Multi-faceted Risk in Initial Acceptance of Emerging Technologies: An Empirical Study of Mobile Banking Services. *Decision support systems*, 49(2), 222-234.
- Mathieson, K., Peacock, E., Chin, W.W. (2001). Extending the Technology Acceptance Model: the Influence of Perceived User Resources. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 32(3), 86-112.
- McCloskey, D.W. (2006). The Importance of Ease of Use, Usefulness, and Trust to Online Consumers: An Examination of the Technology Acceptance Model with Older Customers. *Journal of Organizational and End User Computing (JOEUC)*, 18(3), 47-65.
- Morosan, C., Jeong, M. (2008). Users' Perceptions of Two Types of Hotel Reservation Web Sites. *International Journal of Hospitality Management*, 27(2), 284-292.
- Munir, A.R., Iyas, G.B. (2017). Extending the Technology Acceptance Model to Predict the Acceptance of Customer Toward Mobile Banking Service in Sulawesi Selatan. *International Journal of Economic Research*, 14(4), 365-375.
- Nasri, W., Charfeddine, L. (2012). Factors Affecting the Adoption of Internet Banking in Tunisia: An Integration Theory of Acceptance Model and Theory of Planned Behavior. *The Journal of High Technology Management Research*, 23(1), 1-14.

- Nyeko, J.S., Moya, M., Kabaale, E., Odongo, J. (2014). Factors Influencing the Short Message Service (SMS) Mobile Banking adoption: A Users Perspective in the West Nile Region in Uganda. *European Journal of Business and Management*, 6(5), 34-45.
- Porter, C.E., Donthu, N. (2006). Using the Technology Acceptance Model to Explain How Attitudes Determine Internet Usage: The role of Perceived Access Barriers and Demographics. *Journal of Business Research*, 59(9), 999-1007.
- Priya, R., Gandhi, A. V., & Shaikh, A. (2018). Mobile Banking Adoption in an Emerging Economy. *Benchmarking: An International Journal*. Vol. 19, 2019, 79-101.
- Purwanegara, M., Apriningsih, A., Andika, F. (2014). Snapshot on Indonesia Regulation in Mobile Internet Banking Users Attitudes. *Procedia-Social and Behavioral Sciences*, 115, 147-155.
- Rogers, E.M. (1995). Diffusion of Innovations: Modifications of a Model for Telecommunications *Die Diffusion von Innovationen in der Telekommunikation* (pp. 25-38): Springer.
- Sharma, S.K., Sharma, M. (2019). Examining the Role of Trust and Quality Dimensions in the Actual Usage of Mobile Banking Services: An Empirical Investigation. *International Journal of Information Management*, 44, 65-75.
- Shen, Y.-C., Huang, C.-Y., Chu, C.-H., & Hsu, C.-T. (2010). A benefit–cost perspective of the consumer adoption of the mobile banking system. *Behaviour & information technology*, 29(5), 497-511.
- Singh, T., Kaur, M. (2012). Internet banking: Content Analysis of Selected Indian Public and Private Sector Banks' Online Portals. *Journal of Internet Banking and Commerce*, 17(1), 35-53.
- Sripalawat, J., Thongmak, M., Ngramyarn, A. (2011). m-Banking in Metropolitan Bangkok and a Comparison with Other Countries. *Journal of Computer Information Systems*, 51(3), 67-76.
- Tam, C., Oliveira, T. (2017). Understanding Mobile Banking Individual Performance. *Internet Research*, 27(3), 538-562.
- Tarhini, A., El-Masri, M., Ali, M., Serrano, A. (2016). Extending the UTAUT Model to Understand the Customers' Acceptance and Use of Internet Banking in Lebanon. *Information Technology & People*, 29(4), 830-849.
- Van der Heijden, H., Verhagen, T., Creemers, M. (2003). Understanding Online Purchase Intentions: Contributions from Technology and Trust Perspectives. *European Journal of Information Systems*, 12(1), 41-48.
- Venkatesh, V., Davis, F.D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management science*, 46(2), 186-204.
- Weerakkody, V., El-Haddadeh, R., Al-Sobhi, F., Shareef, M.A., Dwivedi, Y.K. (2013). Examining the Influence of Intermediaries in Facilitating e-Government Adoption: An Empirical Investigation. *International Journal of Information Management*, 33(5), 716-725.
- Wessels, L., Drennan, J. (2010). An Investigation of Consumer Acceptance of M-banking. *International Journal of bank marketing*. 28(7), 547-568.
- Yang, J., Wong, C.W., Lai, K.-H., Ntoko, A.N. (2009). The Antecedents of Dyadic Quality Performance and its Effect on Buyer–supplier Relationship Improvement. *International Journal of Production Economics*, 120(1), 243-251.
- Zhou, T. (2012a). Examining Mobile Banking user Adoption from the Perspectives of Trust and Flow Experience. *Information Technology and Management*, 13(1), 27-37.
- Zhou, T. (2012b). Understanding Users' Initial Trust in Mobile Banking: An Elaboration Likelihood Perspective. *Computers in human behavior*, 28(4), 1518-1525.