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## تأثير أبعاد جودة النظام على الثقة في تبني التجارة الالكترونية من خلال الهاتف المحمول: وجهة نظر العميل الفلسطيني

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The Impact of System Quality Dimensions on Trust  
in Mobile Commerce Adoption Intention: Palestinian Customer's Viewpoint

تأثير أبعاد جودة النظام على الثقة في تبني التجارة الإلكترونية  
من خلال الهاتف المحمول: وجهة نظر العميل الفلسطيني

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**Abstract:** Several pieces of evidence evince that system quality is closely and importantly related to the use of the system in previous empirical work and studies chiefly in the mobile commerce (M-Commerce) systems. At present, in light of the marketing needs related to services and products, M-Commerce is regarded as the major method and channel to use in this area. Yet, it is contended that as system quality's significance is unquestionable, it is a new area that still needs much exploration. Against this, this study aims at examining the system quality dimensions' impact on customer trust in M-Commerce by adapting the information systems (IS) success model. Due to the nature of the study, the quantitative method, alongside a questionnaire is employed to collect data. The findings show that the dimensions of the system quality consisting of perceived ease of use, flexibility, accessibility, visibility, and responsiveness have a great and positive contribution to the customer trust in M-Commerce while the customer trust has a great impact on the intention to use. The findings are favorably used by M-Commerce system service providers and policymakers to articulate related strategies to increase customers' trust and by academicians and researchers to develop, evaluate, and increase shreds of research and studies related to system quality and trust in M-Commerce fields in Palestine. At last, the theoretical and practical implications, findings, limitations, and recommendations for future work are also presented in the last sections of the study.

**Keywords:** System quality, information system success model, trust, mobile commerce adoption, Palestine.

**المستخلص:** تثبت العديد من الأدلة أن جودة النظام مرتبطة ارتباطاً وثيقاً وهاماً باستخدام أنظمة المعلومات في شركات الأعمال، والدراسات التجريبية السابقة تفيد كذلك بشكل رئيسي في أنظمة التجارة الإلكترونية عبر الهواتف الذكية. في الوقت الحاضر، وفي ضوء احتياجات التسويق المتعلقة بالخدمات والمنتجات، تعتبر التجارة الإلكترونية عبر الهواتف الذكية الطريقة والقناة الرئيسية لاستخدامها في هذا المجال. ومع ذلك، يُزعم أنه نظراً لأن أهمية جودة النظام لا جدال فيها، فهي تعتبر مجال جديد لا يزال بحاجة إلى الكثير من الاستكشاف والبحث. وعليه، تهدف هذه الدراسة إلى دراسة تأثير أبعاد جودة النظام على ثقة العملاء في التجارة الإلكترونية عبر الهواتف الذكية من خلال تبني نموذج نجاح أنظمة المعلومات (IS) success model. ولتحقيق هدف هذه الدراسة تم استخدام المنهج الكمي وذلك من خلال استخدام استبيان لجمع البيانات. تظهر النتائج أن أبعاد جودة النظام التي تتكون من سهولة الاستخدام المدركة والمرونة وإمكانية الوصول والرؤية والاستجابة لها مساهمة كبيرة وإيجابية في ثقة العملاء في التجارة الإلكترونية عبر الهواتف الذكية بينما يكون ثقة العميل تأثير كبير على النية للأستخدام. يتم استخدام النتائج بشكل

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إيجابي من قبل مقدمي خدمات نظام التجارة الإلكترونية عبر الهواتف الذكية وصانعي السياسات لتوضيح الاستراتيجيات ذات الصلة لزيادة ثقة العملاء، ومن قبل الأكاديميين والباحثين لتطوير وتقييم وزيادة البحوث والدراسات المتعلقة بجودة النظام والثقة في مجالات التجارة الإلكترونية في دولة فلسطين. أخيراً، يتم أيضاً تقديم الآثار النظرية والعملية والنتائج والمحددات والتوصيات للبحوث المستقبلية في نهاية الدراسة.

**الكلمات المفتاحية:** جودة النظام ، نموذج نجاح نظام المعلومات ، الثقة ، اعتماد التجارة الإلكترونية عبر الهواتف الذكية، فلسطين

## INTRODUCTION:

Of late, the processes of adoption and spread of mobile devices have rapidly surged and continuously increase the entire world (Chang, Chen, & Zhou, 2009; Lu, 2014; Yan & Abdou, 2017). The traditional manner of consumption is enormously changed by the extensive use of a smartphone (Alvi, Laila, Khan, & Hussainy, 2016; Coursaris & Hassanein, 2002; H. H. Kim & Law, 2015; Persaud & Azhar, 2012). The rise of M-Commerce as a novel business phenomenon is considered as an outcome of the mobile technologies' proliferation and the mobile devices' growing approval among communities (Sarkar, Chauhan, & Khare, 2020; Zheng, Men, Yang, & Gong, 2019). M-Commerce belongs to the commercial activities and businesses done via Internet-powered mobile devices (Ko, Kim, & Lee, 2009). Companies have perceived that the platforms of mobiles are adopted as operative communication tools to attain more prospective customers by providing the consumers with the ability to buy commercial services and products through their mobile devices (Alvi et al., 2016; Buellingen & Woerter, 2004; Jayasingh & Eze, 2012). Conversely, the Internet-enabled transactions' attainable benefits are at times faced by anxiety and fear, rising the attitudes of reluctance and unwillingness among potential buyers to adopt the style of online transactions (Jaradat, Moustafa, & Al-Mashaqba, 2018; Sarkar et al., 2020). Therefore, the amount of customer's trust in these systems is powered by the M-Commerce systems' effectiveness .

Trust has always been one of the unstable concepts which are easy to lose and uneasy to gain. This is easily seen when trust is incorporated in activities related to M-Commerce. Starting from the first intention and visit reaching to the repeated act of purchases and adaptation, trust has a great impact on decisions made by the buyer at every pace of the ordering process. However, as put by (Salameh & Hassan, 2015), the development of the M-Commerce service process goes through various problems and difficulties, namely: privacy and security concerns related to transactions complete by the mobile device, insecurity in mobile e-payment, and untrustworthiness of the web merchant. Besides, the trust of consumers functions as one of the most significant factors to M-Commerce adoption and success in the upcoming M-Commerce lifestyle of the consumer (Koksal, 2016; Rana, Barnard, Baabdullah, Rees, & Roderick, 2019). Thus, due to its efficacy and ability in designing appropriate marketing approaches leading to high rates of M-Commerce adoption, the providers of the M-Commerce services are required to examine and be aware of the factors impacting the trust of consumers in M-Commerce (Liébana-Cabanillas, Marinković, & Kalinić, 2017; Sarkar et al., 2020).

Mobile terminals' controls, namely: troublesome input and small screens add more difficulties related to search for M-Commerce information faced by users. An interface featured with quick responses, effective navigation, and a clear layout is critical to adopt M-Commerce. M-Commerce systems characterized by the uneasiness of use and lowly interface design help users think that service providers are unable and

disintegrate to offer the required quality services, affecting the amount of customer trust (Gao & Waechter, 2017). In M-Commerce technologies, the trust of users is affected by system quality together with visual appeal and navigational structure as put by (Vance, Elie-Dit-Cosaque, & Straub, 2008), Moreover, Ayyash, Ahmad, and Singh (2013) maintain that in e-government, the trust of public personnel is affected by system quality. Besides, it is found that once users feel the high-quality results and performance of the system, they increase the trust's level of the system and thus spend additional time on that particular system (Gao & Waechter, 2017; Gao, Waechter, & Bai, 2015) (Hajiheydari & Ashkani, 2018; Silic & Ruf, 2018).

System quality is known as the procedures incorporated in the data processing system (DeLone & McLean, 1992). Once the system and its components are approved by the customers, they recognize the valuable sides of the system (Nistah, Sura, & Lee, 2019). With the attainment of the previous advantages of the system quality, customers perceive the benefits of M-Commerce and put it in continuous use. As a result, repurchase behaviors and customer trust are properly increased, consequently supporting services providers and suppliers to maintain a solid relationship with the client relationship and generate more profits simultaneously. Hence, much research work is required to understand the dimensions of the system quality impacting the trust of the customer in M-Commerce from the customers' viewpoint .

However, though the implications related to the trust issue are on the rise, few studies, if any; examine dimensions of system quality impacting the trust of the customer in M-Commerce in the State of Palestine. The 2018 statistics issued by the Palestinian Central Bureau of Statistics show that the internet users' percentage buying or selling via the internet is 4.5% which is equal to 80,000 publics (Abdullah & Saleh, 2019). This low percentage is resultant from more than a few factors, on top of that, absence of trust in e-commerce websites among users (Abdullah & Saleh, 2019). Besides, several technologically advanced and less-advanced countries have previously conducted studies to investigate the factors related to trust in M-Commerce. However, M-Commerce paves the way to a novel area of study, chiefly in Arab and Middle Eastern states like Palestine. According to the researchers' knowledge, the current study is regarded as the first empirical study that examines the impact of system quality dimensions on trust in mobile commerce adoption from Palestinian customer's viewpoint. Thus, this work is regarded as the first study to completely focus on recognizing the dimensions of the critical system quality affecting the trust of the Palestinian customers in adopting and using M-Commerce. Against this, this study aims at examining the impact of the dimensions of the system quality on customer's trust in M-Commerce by adopting IS success model from a Palestinian customer's viewpoint.

## **THEORETICAL FOUNDATION AND LITERATURE REVIEW:**

### **Information System Success Model:**

To measure the degree of success of an IS, DeLone and McLean (1992) have recommended an IS success model. As gleaned from Sang and Lee (2009), numerous shreds of research have validated the DeLone and McLean IS success model (Rai, Lang, & Welker, 2002; Seddon & Kiew, 1996) and adopted it to analyze the concept of consumer e-Commerce (DeLone & McLean, 2004; Molla & Licker, 2001). E-commerce is closely related to IS as it employs information and communication technology (ICT) to

simplify, implement, and develop the transactions of the customers' businesses (DeLone & McLean, 2003). Therefore, IS and IT researchers have always referred to the aforesaid IS success model in the e-Commerce research area (Nistah et al., 2019). It has been decided to update the original model so that some minor refinements to attain potential measures for each dimension of the IS success model are included to tackle the requirements of the e-Commerce environment. As such, due to the nature of the current context, the model of DeLone and McLean (2003) is adopted.

**Trust in M-Commerce:**

Several studies and literature have previously explored building trust as a concept in e-Commerce so that the confidence of a customer is reaffirmed and a durable relationship is built (Jarvenpaa, Tractinsky, & Vitale, 2000; Li & Yeh, 2010). Still, concerning M-Commerce, it is hard to gain a user's viable trust although mobile devices are appropriate for shopping transactions anywhere and anytime (Al-Khalaf & Choe, 2020; Siau, Lim, & Shen, 2001; Siau & Shen, 2003). Importantly, trust is one of the major necessities for utilizing M-Commerce since M-Commerce services require personal data from customers. Further, trust is very vital in M-Commerce services for the reason that when browsing websites related to business entities and corporations, the customer is required to furnish correct, accurate, and timely information. Trust is a concept incorporating several dimensions. Hence, M-Commerce trust is classified into two types: trust in merchant and trust in technology. Trust in M-Commerce addressed in this study means to trust in technology (E-Commerce websites' system quality).

**RESEARCH MODEL AND HYPOTHESES DEVELOPMENT:**

With that, a new model constructed on the model of IS Success is presented to elucidate the effect of system quality dimensions on the trust of the customer in M-Commerce as shown in Fig. 1 (DeLone & McLean, 2003, 2004). With high-degree dependence on the system evaluation purpose, this model's structure focuses on connecting three quality variables (system quality, information quality, and service quality) with the net benefits, uses, and amount of satisfaction of the system (Ayyash, Ahmad, & Singh, 2012). This model is adopted to pinpoint system quality determinants to study its impact on the trust of customers in M-Commerce and use as an effective predictor of the actual and real use of the system in the IS literature from the viewpoint of the customers (Chau & Hu, 2001; Venkatesh, Morris, Davis, & Davis, 2003). The relations among the three variables together with the suggested hypotheses are demonstrated in detail in the next subdivisions.

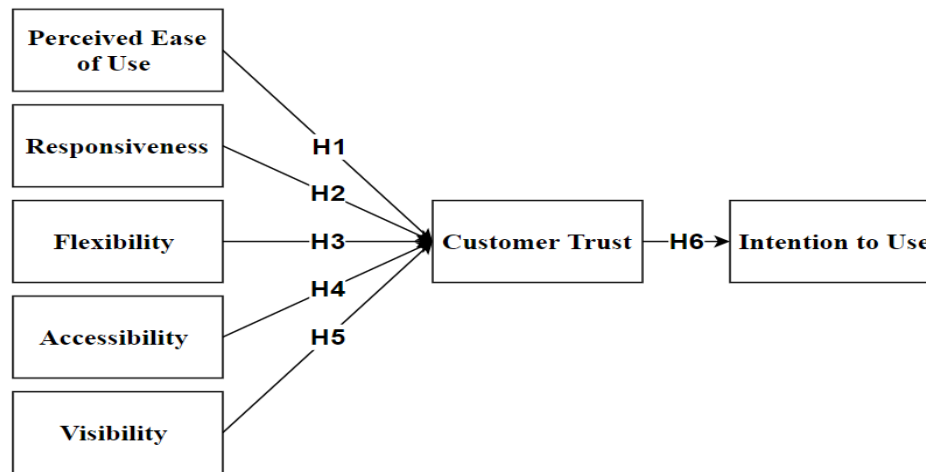


Figure 1. Research Model

Source: Researcher own work based on Literature review

#### System Quality Dimensions:

The term of trust is closely related to the dimensions of the system quality. System quality indicates the technical level that reveals the features of an e-commerce system on the website that offers data related to products and items for consumption and simplifies the website's services seen as the basis of website quality (Kuan, Bock, & Vathanophas, 2008; Nistah et al., 2019). As reported by F. D. Davis (1989), the system quality regularly measures the frequency and amount of its use. Consequently, the quality criteria of the system shall be a priority of the business entities and organizations to ensure that the customers trust the system and use it suitably. For instance, to avoid the occurrence of untrustworthiness, the M-Commerce seller's content shall always be checked and updated. Much literature and studies conducted on IS show that several instruments assist in measuring system quality. However, in respect of individual use of M-Commerce, it is found that the variables' importance is not alike. Mobile telecommunication channels and terminals such as interface are included in the M-Commerce's system environment. The system quality, therefore, may rely on the complete reliability of M-Commerce's technical architectures in promoting the experiences of the users .

In light of the model of IS success, the system quality measures the actual system's output productions. As the system quality has a pivotal role in affecting the use of commercial websites, the e-commerce applications' system performance needs to be technically well-planned and well-designed so that customers straightforwardly and appropriately handle it (Niranjnamurthy, Kavyashree, Jagannath, & Chahar, 2013). Unless the system quality is featured with high performance, the customers may face difficulties and negativity while using an M-Commerce system and thus, its apparent value falls below the highly estimated level (Bahaddad, AlGhamdi, Buhari, Alassafi, & Alzahrani, 2019). Previous studies show a variance among the system quality's dimensions. For example, S. Kim and Stoel (2004) address 11 major standard variables related to the e-commerce websites' system quality, while 5 major variables are considered by another study (Alshehri, Drew, Alhussain, & Alghamdi, 2012). Thus, quite a few variables indicated in earlier studies related to the applications of e-commerce are considered in the current study (Bahaddad et al., 2019; DeLone & McLean, 2004; Nistah et al., 2019). The following is the

dimensions adopted in this study: perceived ease of use, responsiveness, flexibility, accessibility, and visibility.

**Perceived Ease of Use:**

Perceived ease of use is known as the level where a customer considers that less or zero efforts are required to use a particular system (F. D. Davis, 1989). Many researchers argue that trust in e-vendors is positively affected by the perceived ease of use (Chiu, Lin, & Tang, 2005; Koufaris, Kambil, & LaBarbera, 2001; Pavlou, 2003). Within the framework of this study, perceived ease of use refers to the level at which M-Commerce is easily tested, learned, and used by the customers. M-Commerce system's easy use possibly increases the trust of customers in M-Commerce. Therefore, perceived ease of use is a significant determinant impacting customer trust in M-Commerce. In light of the previous insight related to perceived ease of use, the first hypothesis is as follows:

**H1:** There is a direct and positive impact for the perceived ease of use on the trust of a customer .

**Responsiveness**

Responsiveness of the system refers to the level at which M-Commerce is capable of furnishing quick and well-timed services when inquiries are made by customers. Responsiveness pays attention to the customer's inquiries, search time, and load time all at once (Cao, Zhang, & Seydel, 2005; Chen & Wang, 2017). A great amount of responsiveness, signifying a trust cue, transfers the vendor's trustworthiness in M-Commerce to customers (Corritore, Kracher, & Wiedenbeck, 2003). If people, namely: customers find that the vendor's assistance is available and ready, they will show much trust in vendors and business providers, thus trust is affected by responsiveness. In light of the previous insight related to responsiveness, the second hypothesis is as follows:

**H2:** There is a direct and positive impact for the responsiveness of M-Commerce on the trust of a customer.

**Flexibility:**

Flexibility refers to the system's ability to fine-tune its content to the customer's changing demands (Nistah et al., 2019). This indicates that the effective system shall be adaptive to changeable conditions so that the consumers' various needs are completely met (DeLone & McLean, 2004; Hariguna & Berlilana, 2017; Nelson, Todd, & Wixom, 2005). In light of the previous insight related to flexibility, the third hypothesis is as follows:

**H3:** There is a direct and positive impact for the flexibility of M-Commerce on the trust of a customer.

**Accessibility:**

Accessibility refers to the system's amount of information and data easily and relatively accessed with zero or little effort. Information access is considered one of the main pillars for system quality. It is a distinctive property to the extent that the system and its information are either accessible or inaccessible to the users, irrespective of the task required to be accomplished by the user (Nelson et al., 2005). Through logging into various networking platforms and mobile messengers, several methods help to have secure access to the user such as online websites and mobile devices at one go. In contrast, one of

the several important advantages is that the user still has the full choice and capacity not to be accessed by turning his mobile device off. In this study, accessibility is known the capability of the technical constituents of M-Commerce's support customers to access the required websites apart from the task that needs to be completed by the user. And so, an M-Commerce system that is simply accessed with few efforts is a substantial determinant of the trust of the customers. In light of the previous insight related to accessibility, the fourth hypothesis is as follows:

**H4:** There is a direct and positive impact for the accessibility of M-Commerce on the trust of a customer.

**Visibility:**

Visibility refers to the level of how proper M-Commerce is presented and given to customers. Websites capable of creating positive feelings among customers probably increases and enhances their perceived satisfaction and usefulness (Fang, Chiu, & Wang, 2011). Prompting positive feelings is closely related to the system's appearance supported by an organized and clear screen interface and layout (Chen & Wang, 2017; Nistah et al., 2019). In light of the previous insight related to visibility, the fifth hypothesis is as follows:

**H5:** There is a direct and positive impact for the visibility of M-Commerce on the trust of a customer.

**Trust in M-Commerce and Intention to use:**

Previous studies and literature define trust as a necessary part of any relationship with the existence of risk and uncertainty (Mayer, Davis, & Schoorman, 1995; Pavlou, 2003; Warkentin, Gefen, Pavlou, & Rose, 2002). In e-commerce, the significance of trust is strongly raised (Ba & Pavlou, 2002; Gefen, 2000). Trust is featured with a pivotal and effective role in creating successful transactions in an online environment (K. Kim & Prabhakar, 2000; Koufaris & Hampton-Sosa, 2004; Salo & Karjaluoto, 2007; Warkentin et al., 2002). Conversely, Pavlou (2003) maintains low levels of trust reduce the amount of participation in e-commerce. At present, M-Commerce, an emergent division of e-commerce, confronts the similar problem. In South Africa, the trust in the system strongly affects customers' intentions in adopting M-Commerce (Joubert & Van Belle, 2013). Over and over again, several researchers have highlighted the significance of trust to expect consumers' intention for using and adopting M-Commerce (Blaise, Halloran, & Muchnick, 2018). In light of the previous insight of the term of trust in M-Commerce, the sixth hypothesis is as follows:

**H6:** There is a direct and positive impact for the trust in M-Commerce on the intention to use.

**METHOD:**

**Measurement Constructs, Data Collection, and Sampling:**

The current work's constructs are measured by the use of a survey based on a five-point Likert scale consisting of "strongly agree" and "strongly disagree". The survey is designed to examine the system quality dimensions' impact on the trust of the customer in M-Commerce by adapting IS success model. To verify the validity and reliability of the study, all adopted constructs shall describe and define the generalized concepts (Ayyash, Herzallah, & Ahmad, 2020). Accordingly, the existing literature and studies



give a hand in selecting the survey items to be adopted in the context of this study as put in Table (1). Also, the survey is validated by specialists and experts in the field of e-commerce, and certain faults are amended to have a final, applicable, easy to reply, organized, and proficient survey .

The process of data collection entails the distribution of the questionnaire to a sample of Palestinian customers using M-Commerce applications. About samples’ numbers, Structural Equation Modeling (SEM) analysis has required 100 samples at least (Luthfihadi & Dhewanto, 2013). Likewise, the use of smart PLS path modeling approves that the sample size shall be from 30 to 100 cases (Luthfihadi & Dhewanto, 2013). With the 384 responses received, 146 participants are dropped during the data selection process as some have never experienced shopping activities and some have never shopped via mobile devices. Consequently, 238 respondents are adequate

**Table 1: Research Instruments**

Variable	Source	Items
Perceived Ease of Use	(F. Davis, 1993)	M-Commerce system assists me in completing My transactions rapidly.
		M-Commerce system is easily used.
		M-Commerce system is flexible to deal with.
Responsiveness	(Nelson et al., 2005)	M-Commerce system requires less time to answer to my requests.
		M-Commerce system properly offers information.
		M-Commerce system rapidly provides answers to my requests.
Visibility	(Choi, Seol, Lee, Cho, & Park, 2008)	M-Commerce system information about the content needed to download is sufficient.
		M-Commerce system information is easy and well arranged to read.
		M-Commerce system pre-information and content are identical.
Accessibility	(Nelson et al., 2005)	M-Commerce system makes information ready and accessible to me.
		M-Commerce system makes information more accessible.
		M-Commerce system makes information easy to access.
Flexibility	(Nelson et al., 2005)	M-Commerce system flexibly is modifiable to new conditions and demands.
		M-Commerce is adaptable to address emerging needs.
		I prefer using the M-Commerce system as no misuse is done to my personal information.
Trust in M-Commerce	(Wangpipatwong, Chutimaskul, & Papisratorn, 2005)	I prefer using the M-Commerce system as the technologies supporting the system are continually secure.
		I prefer using the M-Commerce system as the system-based technologies are continually trustworthy.
		I prefer using the M-Commerce system as my access to the internet is continually secure.
Intention to use	(Vance et al., 2008)	I use M-Commerce as business firms are trustworthy.
		I am willing to use the M-Commerce system as an aid to assist in making decisions on which product to buy.
		I am willing to let the M-Commerce system help me in making decisions about which product to buy.
		I am willing to use the M-Commerce system as a tool recommending me various products to select.

## **DATA ANALYSIS AND RESULTS:**

The predictive nature and sample measurement of this study lead to select the estimation of the partial least squares (PLS) for evaluating the structural and measurement models. (Chin, 1998) maintains that PLS does not need normal distribution in comparison with other analysis tools. Hair, Ringle, & Sarstedt (2011) show that the PLS is considered more appropriate for the theoretical development of the study. Therefore, Smart PLS 3 has been adopted to implement the PLS estimation.

### **Participant characteristics**

Having received 384 responses, 238 usable responses have been obtained. During the data selection process, 146 participants have been dropped as some have never experienced shopping activities and some have never shopped via mobile devices. The 238 participants are classified as follows: 72 (30.2%) males and 166 (69.7%) females. More than 60% of the participants have aged 25 years or younger. The aforementioned percentages are close to the data collated by online questionnaires in November 2020.

### **Descriptive statistics of the latent constructs**

The mean value of all the latent eleven variables has ranged from 3.414 to 3.618 with a standard deviation ranging from 0.851 to 1.031 on a five-point Likert scale. However, the mean values of the entire variables are found to be above midpoint 2.50. Trust in M-Commerce has ranked the highest with a mean value of 3.618, while responsiveness has shown the lowest mean value at 3.414. The dispersion values reported through standard deviation indicate that the highest value is presented by perceived ease of use at 1.031, and the lowest value is presented by flexibility at 0.851. The results attained from the descriptive analysis are detailed in Table (2).

**Table 2: The Descriptive Analysis Results**

Source: Researcher own work

	No of Items	Mean	Std. deviation
Perceived Ease of Use	3	3.515	1.031
Responsiveness	3	3.414	0.972
Visibility	3	3.538	0.973
Accessibility	3	3.437	0.964
Flexibility	3	3.589	0.851
Trust in M-Commerce	5	3.618	0.928
Intention to use	3	3.532	0.880

### **Measurement model**

During the process of evaluation of the measurement model, the construct validity is first checked. The measurement model aims at ensuring the proper use of psychological instruments together with discriminant validity and reliability. The construct loading is also examined by Smart PLS. Table 3 shows that the entire values are above the benchmark value of 0.7. This outcome has adequately revealed that the constructs show good agreement (Hair, Ringle, & Sarstedt, 2011). Moreover, average variance extracted (AVE) and composite reliability (CR) are used to test convergent validity. Besides, Table 3 shows that the AVE scores have ranged from 0.639 to 0.802 and accordingly increasing above the benchmark value of 0.5 based on (Hair et al., 2011), while composite reliability has ranged from 0.841 to 0.941,

achieving the recommended benchmark of 0.7 for all constructs, indicating the appropriateness and internal consistency of the constructs (Henseler, Ringle, & Sinkovics, 2009; Straub, 1989).

**Table 3: Results of the Confirmatory Factor Analysis**

Source: Researcher own work (Smart PLS 3)

Constructs	Items	Loading	Composite Reliability	AVE
Perceived Ease of Use	PEOU1	0.889	0.924	0.802
	PEOU2	0.909		
	PEOU3	0.888		
Responsiveness	RES1	0.883	0.923	0.800
	RES2	0.901		
	RES3	0.900		
Visibility	VIS1	0.901	0.920	0.793
	VIS2	0.874		
	VIS3	0.897		
Accessibility	ACC1	0.909	0.916	0.785
	ACC2	0.861		
	ACC3	0.887		
Flexibility	FLX1	0.820	0.895	0.741
	FLX1	0.842		
	FLX1	0.917		
Trust in M-Commerce	TRT1	0.905	0.941	0.763
	TRT2	0.846		
	TRT3	0.870		
	TRT4	0.865		
	TRT5	0.879		
Intention to use	INTU1	0.866	0.841	0.639
	INTU2	0.732		
	INTU3	0.794		

After testing convergent validity, the discriminant validity has been tested. It has been evaluated by exploring the correlations among the measures of potentially overlapping constructs as put by (Fornell & Larcker, 1981). In this study, Table 4 shows that the square root of AVEs are greater in all cases than the off-diagonal elements in their corresponding row and column, proposing that the required discriminant validity is fulfilled. Moreover, the Heterotrait-Monotrait Ratio (HTMT) is an appraisal as regards the correlation among constructs, which is parallel with the attenuated construct score creation adopting a value of 0.90 as a path (Henseler et al., 2009). Once again, Table 5 depicts that this research has settled that there are zero indications of a decline of discriminant validity as all the constructs match the standards. Concerning common method bias assessment, Harman’s single factor test is employed by a study using SPSS, version 22. The analysis shows that the first-factor variance is less than 50%; hence, this finding shows that there is no common method bias (CMB) (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Regarding the variance inflation factor (VIF) for the constructs, the analysis shows that their values have ranged from 1.968 to 3.012, which are less than the threshold value of 5.0, so there are no collinearity issues among the constructs of the study (F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser,

2014). All in all, acceptable convergent validity and discriminant validity have been confirmed by the measurement model.

**Table 4: Fornell-Larcker Criterion**  
Source: Researcher own work (Smart PLS 3)

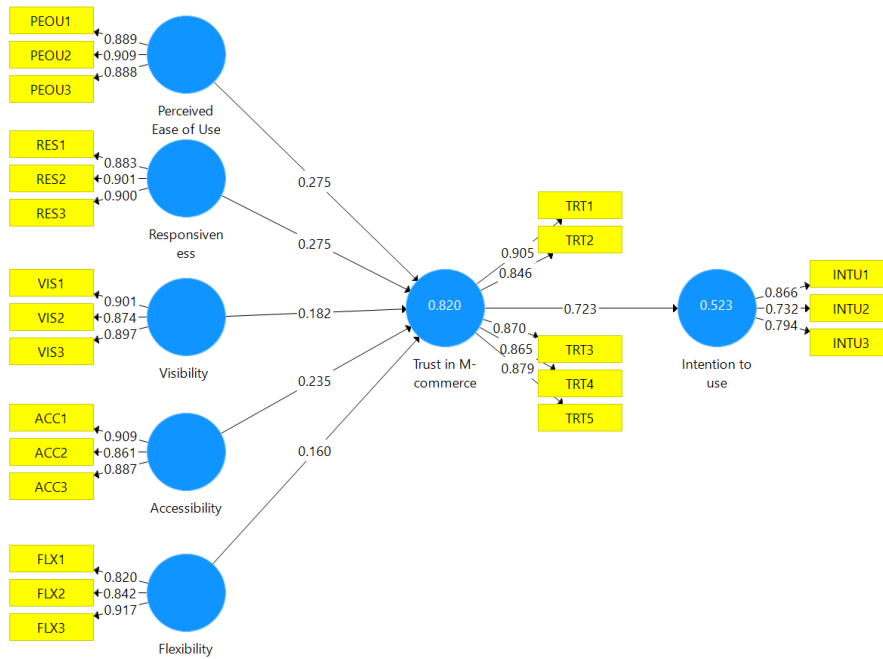
	ACC	FLX	INTU	PEOU	RES	TRT	VIS
ACC	<b>0.886</b>						
FLX	0.576	<b>0.861</b>					
INTU	0.654	0.574	<b>0.799</b>				
PEOU	0.588	0.491	0.632	<b>0.896</b>			
RES	0.535	0.435	0.632	0.576	<b>0.895</b>		
TRT	0.761	0.657	0.723	0.749	0.720	<b>0.873</b>	
VIS	0.686	0.584	0.643	0.544	0.498	0.723	<b>0.891</b>

**Table 5: Heterotrait-Monotrait Correlation Ratio**  
Source: Researcher own work (Smart PLS 3)

	ACC	FLX	INTU	PEOU	RES	TRT	VIS
ACC							
FLX	0.672						
INTU	0.758	0.674					
PEOU	0.674	0.573	0.706				
RES	0.614	0.506	0.726	0.565			
TRT	0.801	0.746	0.788	0.830	0.801		
VIS	0.790	0.684	0.766	0.622	0.567	0.804	

#### Assessment of structural model

The main evaluation criterion for the goodness of the structural model is that the  $R^2$  measures the level of significance and the coefficient of determination of the path coefficients (beta values) (Hair et al., 2011). Figure 2 shows the  $R^2$  of Trust in M-Commerce variable value is 0.820 and intention to use is 0.523. The higher the adjusted  $R^2$  value, the greater the ability of the exogenous variable can be, and is elucidated by endogenous variables to better the equation structural. The Trust in M-Commerce variable has an adjusted  $R^2$  value of 0.820 which means 82% of the Trust in M-Commerce variance is clarified by (perceived ease of use, responsiveness, flexibility, accessibility, and visibility) variables, while the rest is clarified by other variables outside the research model. Variable of intention to use has adjusted  $R^2$  value 0.523 which means 52.3% of the intention to use variance can be explained by trust in M-Commerce, while the rest is clarified by other variables outside the research model.



**Figure 2. Measurement Model**

Source: Researcher own work

The structural model’s path coefficients are measured and bootstrap analysis (resampling = 1000) has been performed to measure the statistical significance of the path coefficients as shown in Table 6. Table 6 and Figure 3 show that the results obtained from the direct research hypotheses tests are all acceptable, namely: the results of the first hypothesis (H1), which states “There is a direct and positive impact for the perceived ease of use on the trust of the customer”. This is evidenced from the survey data with the result ( $\beta = 0.275$ ,  $t = 4.385$ ,  $P\text{-value} < 0.05$ ). The second hypothesis (H2), which states “There is a direct and positive impact for the responsiveness of the M-Commerce on the trust of the customer” is also supported by the results ( $\beta = 0.275$ ,  $t=4.574$ ,  $p < 0.05$ ). Likewise, the third hypothesis (H3), which states “There is a direct and positive impact for the flexibility of the M-Commerce on the trust of the customer”, is also supported by the survey data with values ( $\beta = 0.160$ ,  $t = 2.347$ ,  $P\text{-value} < 0.05$ ). Also, the fourth hypothesis (H4), which states “There is a direct and positive impact for the accessibility of the M-Commerce on the trust of the customer” is supported by the survey data with values ( $\beta = 0.235$ ,  $t = 3.002$ ,  $P\text{-value} < 0.05$ ). Concerning the fifth hypothesis (H5) which states “There is a direct and positive impact for the visibility of the M-Commerce on the trust of the customer”, it is also supported by the results ( $\beta = 0.182$ ,  $t=2.198$ ,  $p < 0.05$ ). Lastly, as for the sixth hypothesis (H6) which states “There is a direct and positive impact for the trust in M-Commerce on the intention to use”, it is also supported by the results ( $\beta = 0.723$ ,  $t=19.399$ ,  $p < 0.05$ ).

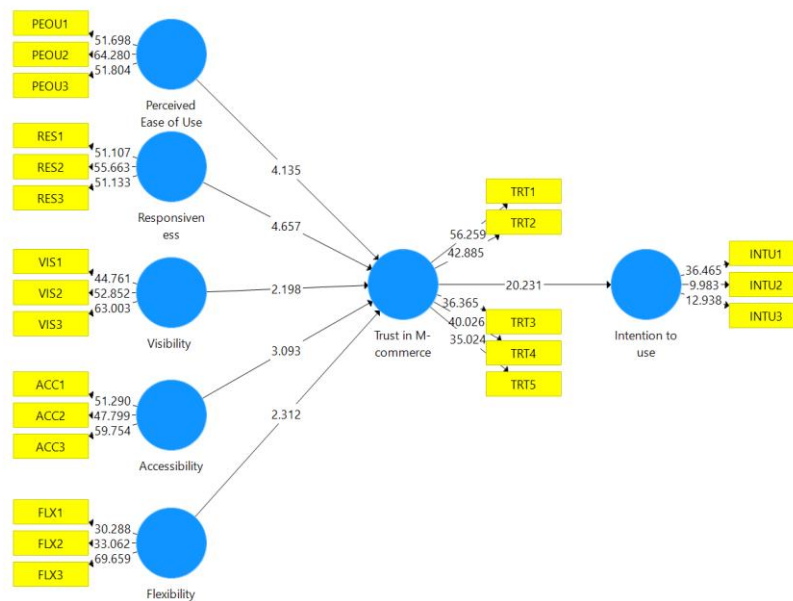
**Table 6: The results of structural model**

Source: Researcher own work

H	Relationship	Beta	SE	t-Value	Decision
H1	Perceived Ease of Use-> Trust in M-Commerce	0.275	0.063	4.385	Supported
H2	Responsiveness-> Trust in M-Commerce	0.275	0.060	4.575	Supported
H3	Flexibility-> Trust in M-Commerce	0.160	0.068	2.347	Supported

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H4	Accessibility-> Trust in M-Commerce	0.235	0.078	3.002	Supported
H5	Visibility-> Trust in M-Commerce	0.182	0.083	2.198	Supported
H6	Trust in M-Commerce-> Intention to Use	0.723	0.037	19.399	Supported



**Fig. 3 Structural Model**

Source: Researcher own work

## DISCUSSION AND IMPLICATIONS

The study aims at examining the impact of system quality dimensions on customer's trust in M-Commerce by adapting IS success model from Palestinian customer's viewpoint in Palestine. The findings show that perceived ease of use, responsiveness, visibility, accessibility, and flexibility are significant determinants of trust in M-Commerce. The results also show the significant role of perceived ease of use, mainly when the considerable benefits of M-Commerce are recognized by the Palestinian customers. This result is consistent with previous studies that show that trust in e-vendors is positively affected by the perceived ease of use (Chiu et al., 2005; Koufaris et al., 2001; Pavlou, 2003). Besides, this finding is in agreement with a recent study by (Kaushik, Mohan, & Kumar, 2020) indicating that the trust of customers toward mobile retail applications in India is significantly and positively affected by the perceived ease of use. Second, there is a direct and positive impact for the responsiveness of M-Commerce on the trust of the customer (H2). In the context of M-Commerce, the system's responsiveness is related to appropriate and quick responses to requests for transactions and information required by the customers. This result is also in harmony with the results of a study by (Khairani & Rajagukguk, 2019) indicating that the trust of customers using the services provided by the Go-Life system is positively related to responsiveness. As a consequence, higher M-Commerce system responsiveness is closely related to higher customer trust levels.

Third, as for flexibility, there is a direct and positive impact for the flexibility of M-Commerce on the trust of the customer (H3). This result is compatible with the results of a study by Huang, Ba, and Lu (2014) indicating that flexibility as a process connects the online trust behavior of the customers with the system design of the platform of e-commerce. A hassle-free technical constant improvisation and backend

support in M-Commerce applications strongly support users to experience this phenomenon without any hassle, leading to better quality and improved user-friendliness toward technology adoption. Flexibility is strongly required to attain a whole adoption process of new technology as well as mobile computing (Chhonker, Verma, Kar, & Grover, 2018). Of the main enablers of using the flexible approach are the attitudinal and technological changes toward these M-Commerce applications. Out of the many applicable examples is mobile shopping that creates a flexible and free flow environment of a mobile service. Fourth, concerning accessibility, there is a direct and positive impact for the accessibility of M-Commerce on the trust of the customer (H4). There shall be clear and on-going communications and strong partnership efforts between mobile vendors and customers so that information asymmetry is reduced (Siau & Shen, 2003). Accessibility in the M-Commerce environment speaks of the system's availability, i.e. it is the ability of the customers to make various commercial transactions anywhere and anytime without technical difficulties. Reliable speedy online access is strongly required to successfully gain the prospective benefits of using an M-Commerce system as customers suppose that the M-Commerce services are always available when needed. The fifth aspect is that there is a direct and positive impact on the visibility of M-Commerce on the trust of the customer (H5). Visibility speaks of the practicable structure and organization of the screen so that it is visually appealing and eye-catching because the trust of customers in an M-Commerce application is strongly affected by the first impression. Thus, the minute the process of designing an M-Commerce application begins, a business shall be creative and able to represent their information to use the unlimited features of the M-Commerce application.

The context of this study has raised several implications needed by the market practitioners. First, the vendors of M-Commerce need to understand how trust is built, strengthened, and improved. While incorporating their online services, it is constantly needed to return to the fundamental perception that customers are the focus and center of the business, as improving their trust leads to a greater base of customers. Second, since system quality dimensions (perceived ease of use, responsiveness, flexibility, accessibility, and visibility) are validated as methods to develop and increase the trust of the customer in business transactions, vendors on the M-Commerce shall secure an interactive link and relationship with customers, particularly for their first-time transactions and uses. The M-Commerce vendors shall be always updated, quick, and responsive to attain customers' interest to continually use M-Commerce before they getting uninterested. In the meantime, brand managers are required to think tactically about their brand as strategic planning is an uneasy task before a successful brand helps in creating the trust of the customer as put by (Hankinson & Hankinson, 1999). Third, one of the requirements of M-Commerce is to get service feedback. Vendors shall be ready for providing quick responses when customers face problems during the use of transactions in M-Commerce. Last of all, of the important predictors of trust, is system quality dimensions. This finding entails that the M-Commerce system needs to be closely related to customers' desires and needs. The constraints and interface design of the mobile technology are of specific significance to all levels of customers.

The study presents several useful implications such as the analysis of recommended system quality dimensions furnishes the academic researchers with perceptions about the trust's antecedents. Besides, the empirical results of the model show that a higher level of customer trust is produced by a better M-

Commerce system quality level. The results also reveal that among the most important predictors of customer trust are the system quality dimensions. This clarifies why there is a statistically significant effect of the combined system quality dimensions on trust. An additional important academic implication is that the proposed system quality dimensions in M-Commerce are an effective tool to study the formation of customer trust in the broader mobile environment. Importantly, this study presents a significant model to study the dimensions of the system quality that promote customer trust in M-Commerce based on the IS success model. More importantly, this is the first study done to examine how the dimensions of the system quality have an impact on customer's trust in M-Commerce in Palestine. Therefore, another significant contribution added by this study is that the system quality dimensions strongly affect the trust of a customer of M-Commerce in Palestine. The providers and practitioners of the M-Commerce service, therefore, use the study's findings as a reference to recognize the required dimensions to develop the customer's trust in M-Commerce intention to use.

## **LIMITATIONS**

Although there are various practical and theoretical contributions of the present study, certain limitations still exist, that need to be addressed. Firstly, though the study has used an enormous number of identified dimensions in the research model, the determination of these dimensions is considered a main limitation of the study. New possible dimensions of system quality influencing trust such as accuracy of the system can be studied by future studies. Secondly, the suggested model in this study is an articulate and applicable model that can be employed and extended to different contexts by further empirical studies in the related context. This model may be considered by future studies to assist other countries, particularly developing countries in the Arab World to use a qualitative method in preference to a quantitative one to add thorough information and knowledge on the related issues. More efforts to conduct the study based on novel theories or different settings are valuable to realize customer trust. Thirdly, the study sample adopted only represents Palestinian customers using M-Commerce. Thus, other M-Commerce customers in other Arab and developing countries may not be satisfactorily represented by this sample. Therefore, this study is not generalizable for all Arab and developing countries as most customers in these countries do not share the equal demographic features as Palestine and are unable to offer the same amount degree and level of services to their customers as they are easily available in Palestine. Accordingly, additional studies can be easily done in other countries to verify and strengthen the findings of this study.

## **CONCLUSION**

In a nutshell, this study aims at examining the impact of system quality dimensions on customer's trust in M-Commerce by adapting IS success model from a Palestinian customer's viewpoint. The understanding of the formation of customer trust is strongly enhanced by the proposed model. Also, the impact of system quality dimensions on customers' trust in M-Commerce has been verified. In agreement with the previous studies, it is shown that there is a direct and positive effect of all system quality dimensions on customer's trust in M-Commerce. Furthermore, the system quality dimensions of trust are validated paving the way for a thorough and in-depth exploration of how to develop customer trust. The



study also shows that trust in M-Commerce is closely related to perceived system quality. Besides, this study has proved that M-Commerce system featured with a high level of perceived system quality develops the trust of Palestinian customers in M-Commerce. In the same vein, perceived system quality makes it difficult to affectedly increase customer trust in M-Commerce. The study also shows that there are several methods to improve perceived system quality such as making the user interface of the M-Commerce system eye-catching, easy to use, and attractive. Therefore, the outputs of the system are designed in a manner so that better-quality services are provided to the customers and customers' trust in the M-Commerce system is strongly increased as well. Likewise, the dynamic and varying nature of system quality dimensions shall be understood by evaluators and decision-makers to be in touch with all novel technology dimensions. Importantly, as more business activities are done by customers via online websites and mobile devices, the demand for mobile services grows more and more. The questions raised such as how to preserve current customers and attain new customers have become one of the important issues for vendors and service providers. At last, the results of this study recommend paying attention and developing the dimensions of the M-Commerce system quality dimensions helps in properly enhancing customer trust so that M-Commerce vendors can preserve the current customers and attract new customers at once.

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