



Proposing a Service Quality Framework for Mobile Commerce

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Abstract. Customer satisfaction influences the profitability of organizations and can keep competitive advantages. One of the critical factors in customer satisfaction is the availability of a quality scale that measures the service. The service quality aims to ensure that the service delivered meets customer expectations. However, with the popularity of using mobile devices, there are many electronic businesses shifted to mobile platforms. Mobile platforms have unique features that differ from Personal computers, such as mobility, portable, wireless. Mobile business is a category of business development refers to new business platforms that enabled by using the technology of wireless and mobile devices. In this case, measuring of service quality of the mobile business is necessary nowadays to ensure the delivered services with the best quality. Due to the lack of a comprehensive framework to evaluate service quality at the mobile business, the business sector uses electronic service quality measurement to evaluate mobile business services, which results in difficulties in identifying accurate results. Using the theoretical base model of offline service quality “SERVQUAL” and the online service quality model “E-S-QUAL,” the researchers were able to propose a framework of service quality to evaluate the services provided through mobile commerce. The proposed service quality framework is consisting of six dimensions that are application design, reliability, responsiveness, trust, efficiency, and system availability. The proposed service quality framework helps business providers for better development of business strategies and leads for best customers’ expectations due to the compatibility of the proposed model with the unique features of mobile devices with considerations of the environment of business sectors.

Keywords: Mobile commerce · Mobile business · M-service quality

1 Introduction

The development of ICT has influenced many sectors. Mobile commerce (or Mobile business) is one of these sectors that take attention from researchers practitioners to develop it according to business requirements. The technology of m-commerce provides smart functions and services to meet end-users expectations with attention to service quality and usability's features (Safieddine 2017). Mobile commerce considered as an extension of Electronic Commerce (Ghazali et al. 2018) which referred to monetary value's transactions conducted through mobile devices over a wireless internet connection (Taylor 2016). The popularity of using smartphones among the public, encourage business sectors to use mobile technologies as a platform for business transactions such as providing business services and selling goods (Lin et al. 2016; Santos 2003). Mobile commerce offers the feature of ubiquity, which allows users to reach the information through the smartphones connected with wireless connection regardless of locations (van der Merwe and Bekker 2003; Zhou 2011).

Delivering best service quality through m-commerce to end users is a crucial strategy for business improvement and success with results in understanding end users' expectations and best business profits (Salo and Karjaluo 2007; Su et al. 2008; Zheng et al. 2015). Measuring service quality at m-commerce requires to identify the dimensions' characteristics of service quality with considerations of unique features of the mobile device and the context of the business sector (Ghazali et al. 2018; Jimenez et al. 2016; Safieddine 2017).

There were many of online service quality evaluation scales that proposed at different fields, but it is difficult to use these models for evaluating the service quality at m-commerce (Choi et al. 2008; van der Merwe and Bekker 2003; Yang et al. 2006). Using different models at m-commerce leads for more complexity and wrong evaluation data (Casaló et al. 2007; Ghazali et al. 2018; Safieddine 2017; Zeithaml 2002; Zheng et al. 2015). However, the main research gap of this paper focused on lack of m-commerce service quality measurement which leads business providers to face issues when launching services into the mobile platform.

Thus, it is necessary to investigate the context of mobile commerce by identifying the service quality dimensions that can improve the business relationship with customers by analyzing and answering the following questions:

1. What are the unique features of the mobile business?
2. What are the service quality's critical dimensions of mobile business?
3. How can service quality influence mobile business?

However, to overcome this issue, the current research aims to analyze and study the service quality context and features of mobile commerce according to offline and online theoretical models. The first model is an offline service quality measurement scale called "SERVQUAL" proposed by the study of (Parasuraman et al. 1988). The second theoretical base model is online service quality measurement scale called "E-SQUAL", which was proposed by the study of (Parasuraman et al. 2005) which aimed to evaluate the service quality through electronic forms and it focuses on both system and service attributes based on four primary service quality attributes.

This paper consists of five main sections. The first is a general introduction of the discussed topic. The second section is a literature review that is discussing the main relevant area of the topic that is the concept of service quality, electronic service quality, and mobile commerce. The third section is the research methodology. The fourth section proposed the framework for m-commerce service quality by analyzing the relevant dimensions supported by theoretical models of service quality. The fifth section is the research implications and future research, and the last section is the conclusions of the research.

2 Literature Review

2.1 Service Quality

The Service Quality (SQ) is a concept used as an evaluation scale that measuring of organizations' performance in terms of effectiveness and efficiency (Santos 2003; Stamenkov and Dika 2015). It gets attention from researchers and practitioners a variety of fields, including business and marketing. The competitive among organizations leading them to employee service quality to differentiate their performances from other organizations (Ribbink et al. 2004; van der Merwe and Bekker 2003). It means the best service quality provided by organizations leads to a good reputation that results in high profits (Choi et al. 2008; Santos 2003). In the literature of marketing, the general concept of service quality associated with consumer perception of service, the privilege of product, and consumers' satisfaction. (Stamenkov and Dika 2015; Yang et al. 2006; Zhou 2011). The author (Rust and Oliver 1994) describes the concept of service quality as the overall customer's satisfaction based on delivered services from organizations or service providers. Therefore, the general concept of service quality is common among the definitions which measuring the quality of service by comparing the current performance of delivered services with the expectations of the end users (Parasuraman et al. 1988).

Measuring service quality at offline services differ from online services (electronic services). Most popular service quality measurement scale at offline services is the model of "SERVQUAL". It proposed by (Parasuraman et al. 1985). This model aims to study the expectations of customers and the service performance's evaluations from different aspects related to service quality. This model consists of ten dimensions that cover the attributes related to service delivery to customers in terms of quality. The model was developed later in order to measure the two main areas of offline service quality that are the expectations and perceptions based on customers view (Parasuraman et al. 1988).

2.2 Electronic Service Quality

With the development of ICTs, the business service uses the technologies as a channel to deliver their business online to consumers. The website is widely used by the business sector in different fields such as online banking, online payment, and online tickets reservations. There were many of e-service quality evaluation scale proposed by

different studies i.e. e-commerce S.Q. that consisting of four main dimensions designed to evaluate the quality of electronic commerce by evaluating the attributes of website (Liu and Arnett 2000). The author (Yoo and Donthu 2001) proposed an e-service quality's model called "SITEQUAL" that focused on "online retailing" based on four main dimensions that are "ease of use, aesthetic design, processing speed, and security".

The well-known e-service quality model is "E-S-QUAL", which proposed by (Parasuraman et al. 2005) contains four main with a total of (22) measured factors. The four main dimensions are "Efficiency", which measures the satisfaction of end users in term of accessing and using the website. The second dimension is "Fulfillment", which measures the availability of items at the website and delivery of the items to the customer. The third dimension is "System Availability", which measures the overall technical functions of the website. The last dimension is "Privacy", which measures the level of protecting the customer's information at the website.

However, there were many of e-service quality models developed to measure the satisfaction of customers through online services, which enable the organization for more improvement weather a technical or service delivery process, to meet the expectation and increase the satisfaction's level of end users.

2.3 Mobile Commerce

Mobile commerce (MC) is a dynamic business opportunity that has unique features to enhance transactions (Safieddine 2017). The concept of MC considered as a business giant due to its ability to reducing costs with increasing and extending the organizations' profit (Cristobal et al. 2007; Gotzamani and Tzavlopoulos 2009; Safieddine 2017). Mobile commerce is an extended type of electronic commerce (Ghazali et al. 2018; Safieddine 2017). The authors (Ribbink et al. 2004; Taylor 2016; Zhou 2011) considered that the transactions at mobile commerce are similar to those who proceeded at electronic commerce. The significant differences between electronic commerce and mobile commerce are the technology used, the kind of business provided, and kind of business model represents (Bhatt and Emdad 2001; Kong and Mayo 1993; Yang et al. 2006). Using smartphones devices encourage business sectors to the use the technologies of mobile commerce due to an effective and efficient way to deliver the business services to end users with saving costs and fewer efforts. MC supported by the variety of advanced techniques such as voice, live chat and live video, which helped business providers and customers for more interactivity and portability. Mobile banking, online shopping, bills payment, are some examples of services provided via mobile commerce platforms, which enable consumers to perform the transactions from anywhere and anytime using smartphones connected with wireless internet connections (Deb and Agrawal, 2017; Salo and Karjaluo 2007; Shao et al. 2009; Wang and Li 2012).

Study of (Taylor 2016) stated that the applications of mobile commerce are necessary to be simple and easy to use since the education level among consumers is different which required an easy and straightforward m-commerce application to enable them using these types of business services. The main success of mobile commerce

mainly depending on consumers buys. Thus, the business's provider focuses on these categories of consumers who are using smartphones' technologies.

However, to ensure continues uses of mobile commerce, it is the responsibility of business' provider to guarantee the best level of service quality through m-commerce, which required a particular service quality framework that can analyze and understand the consumers of mobile commerce.

3 Research Methodology

The service quality dimensions of mobile commerce extracted from previous studies at the area of offline and online service quality. This helps to gain in-depth knowledge of nature and concept of the dimensions associated with service quality. The study uses the theoretical models of "SERVQUAL" by (a Parasuraman et al. 1988; Parasuraman et al. 1985) and the model of "E-S-QUAL" by (Parasuraman et al. 2005), that enhanced the current research for constructing m-commerce service quality model. The evaluation process of the proposed sub-dimensions performed by investigating the mobility characteristics of m-commerce with consideration of the two mentioned theoretical base models. The proposed sub-dimensions are compatible with the basic concept of offline and online service quality models and developed a new model for mobile platforms that meets the requirements and characteristics of business sectors. However, this research uses the systematic literature review that enables researchers to tabulate the data and conduct the analyses.

4 Proposed Service Quality Measurement Scale for Mobile Commerce

The first proposed dimension for mobile commerce is "application design", which refers to overall design appears at the application. This dimension is consistent with the model proposed by (Parasuraman et al. 1988) in term of tangibility. The overall design of mobile business affecting online marketing satisfaction of end users which causes continues using such m-business in the future. The building of a great and interactive interface of m-commerce is a challenge for the service provider since this stage is essential to get an initial acceptance of end users toward m-commerce application. When the application building of interactive elements such as (processing stage, loading and uploading level and time remaining, confirmation of sending and receiving of transactions). These examples are easy to mention at m-commerce, but when there are some interactive elements for each transaction, there will be a satisfaction for m-commerce application (Ghazali et al. 2018). The dimension of "application design" can measure the criteria of usability of such m-commerce application, information architecture, interaction design, wireframe, and visual design (Khoi et al. 2018). In this regards, including the dimension of "application design" into m-commerce service quality, due to its essential that affecting customer perceived S.Q.

The "reliability" considered as a basic service quality dimension at the model of "SERVQUAL", which measures the service performance in term of "dependability,

consistency, and accuracy” (a Parasuraman et al. 1988). Other studies in the field of computer technology such as (Cox and Dale 2001; Lu et al. 2009; Ribbink et al. 2004; Zhu et al. 2002), stated that the performance and consistency are basic dimensions of service quality, which is associated with providing best protection to end users against risks at electronic services. In term of the mobile business, the end users are performing their transactions online from issuing the order until received the necessary service (Chiu et al. 2017). In this case, the end users are expecting that the business providers are providing the services with the best reliability, which means that the business provider is taking care of service provision, solving issues faced by end users about services and prices. Therefore, the dimension of “reliability” is necessary to be included at the proposed service quality scale of mobile commerce, which can influence the perceived S.Q.

Responsiveness is one of service quality dimension included at SERVQUAL. It is defined as the desire of employees to serve consumers and dealing with their complaints (Parasuraman et al. 1988). The study of (Santos 2003) stated that the dimension of “responsiveness” aims to measure the ability of an organization to serve consumers and the way of dealing with consumers in case of a problem. The revolution of ICT has to influence the business context to merge the technology with services affecting providing the business through online and mobile platforms. It is critical for business sectors to understand the needs and expectations of end users and adopt modern ICT systems to provide more effective and efficient services (Safieddine 2017). Using the latest technologies in the business sectors can develop the strategies of business and respond quickly to end users with taking care of the expectations and quality of service provided to the audience. Taking action to any issues through mobile business quickly and positively means that the service providers are meeting the quality criteria of responsiveness. Therefore, “responsiveness” affecting perceived service quality and it is essential to include at the S.Q. Measurement scale of mobile commerce.

The fourth dimension is “trust” which is a basic component of SERVQUAL service quality model. The “trust” is associated with providing the best level of confidence at electronic services by taking consideration of security and privacy (Wei et al. 2009). The trust considered as a complex phenomenon due to associated with many other factors. It has been studied and analyzed from different fields of study such as management (Dirks and Ferrin 2002), marketing (Kumar 1996) and sociology (Strub and Priest 1976). The previous studies of trust argued that it has an essential impact on the success of the personal relationship. In this case, the concept of the dimension of trust is essential to evaluate at mobile commerce in order to increase the relationship between the service provider and end users. The studies of (Khoi et al. 2018; Lin et al. 2018) suggested that trust is a success element when considering the transaction based online platforms. The weak trust associated with m-commerce may affect the success and continues uses of m-commerce transactions. The “trust” affecting the user’s acceptance of electronic services, which required to translate it into actual processing of electronic transactions. Therefore, trust can influence m-commerce service quality which is vital to include at the service quality model.

The dimension of “efficiency” refers to measuring the satisfaction of end users in term of accessing and using the website, which is a key dimension at the S.Q. model of “E-S-QUAL” that proposed by (Parasuraman et al. 2005). At the context of mobile

commerce, the efficiency of mobile commerce application assists consumers in use mobile commerce in a simple way, well-structured steps, with minimum input requirements required by consumers. These criteria enhanced consumer’s satisfactions toward m-commerce and encouraged them for continues use. Mobile devices have unique features that differ from other devices, i.e. personal computer. In this case, there are limitations of end users to perform transactions through m-commerce applications such as touch screen, small screen and keyboard keys (Deb and Agrawal 2017; Ghazali et al. 2018). The processing of transactions through m-commerce applications should be simple and take less time when comparing to performing such transactions through a personal computer. Efficiency at m-commerce increased the quality of the application and encouraged public for more using of this platform.

The last dimension is “system availability”, which describes the overall website’s technical characteristics and it is part of “E-S-QUAL” (Parasuraman et al. 2005). In term of mobile commerce, ensure availability of m-commerce services affecting consumer’s satisfactions toward such services, which affects the reputation of the service provider (Phong et al. 2018). The reasonability of business provider in term of system availability is to ensure that the m-commerce application is working properly and update the necessary technical functions to meet the requirements of service delivery mobile (Khoi et al. 2018; Lin et al. 2018). Some technical issues can be detected by end users, in this case, it is important to allow end users to report on such issues to enable business providers regularly updating the application to meet end users expectations and ensure the satisfaction of them. Hence; the dimension of “system availability” has a relationship with perceived service quality at m-commerce.

However, Fig. 1 illustrates the proposed dimensions of the m-commerce service quality framework which mapped according to the theoretical base model of offline service quality “SERVQUAL” and the online model of e-service quality measurement scale “E-S-QUAL”.

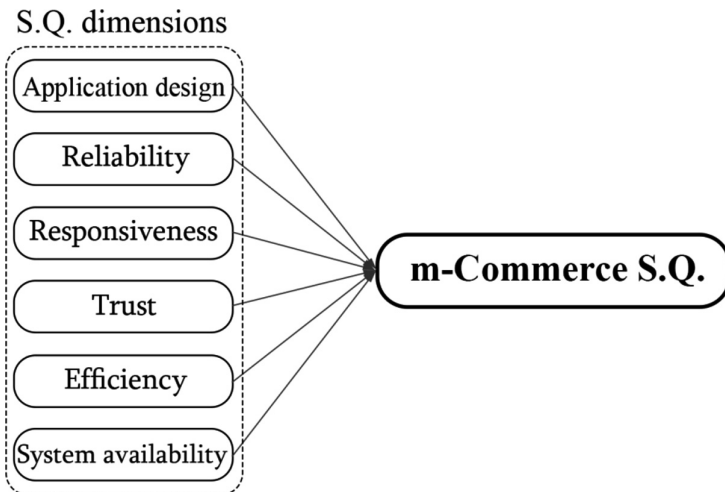


Fig. 1. Proposed service quality model for mobile commerce.

5 Research Implications and Future Research

A service quality framework for m-commerce constructed for use by researchers to conduct further investigation and research. The current paper created a comprehensive m-commerce service quality framework as a base that guided business providers for a better understanding of their consumers through mobile platforms. It helps business providers to evaluate their business service through m-commerce to understand the consumer expectations and for more development on their business strategies. The proposed model consists of six sub-dimensions that cover the critical quality aspects in the context of mobile commerce. Business providers can conduct regularly quality evaluation process of m-commerce application by asking the end users of m-commerce to evaluate the application before closing it. End users are the key to improving in any fields; therefore, the proposed model is designed to evaluate m-commerce based on end users opinion. However, future researches can be conducted to test the ability of m-commerce framework.

6 Conclusions

In this paper, the service quality dimensions for mobile commerce have been analyzed and presented based on the offline service quality model of “SERVQUAL” and online service quality model of “E-S-QUAL”. It finds that the unique features of mobile commerce are ubiquity, reachability, personalization, flexibility, and dissemination. The proposed model for mobile commerce consists of six dimensions which are the application design, reliability, responsiveness, trust, efficiency, and system availability. This model is useful for evaluating the service quality at mobile commerce which is more useful to identify the strongest and weakness steps at the service delivery process. It enhanced the business sector to understand the expectations of consumers for more development of their business strategies.

Finally, the proposed model consists of the most related dimensions that can be measured based on end users, which meets the basic concept of measuring service quality. Mobile business is a unique environment that requires continues development in terms of development, improvement and updating the criteria of customers’ satisfaction. The proposed sub-dimensions are analyzing according to the context of mobile business which can be measurable by evaluating e-questionnaire to collect the data from targeted end users.

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