



The Relationship Between Users' Performance Expectancy and Users' Behavioral Intentions to Use Mobile Commerce transactions in the Libyan context

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Abstract

The purpose of this study is to see how users' performance expectations affect their behavioural intention to use m-commerce applications in Libya. The participants of this study are 310 respondents. Unified theory of acceptance and use of technology (UTAUT) has supported the hypothesis of this study. The findings suggested that there is positively relationship between users' performance expectancy and users' behavioral intention. Furthermore, performance expectancy has a positive effect on behavioral intention to use m-commerce. This study contributes to the body knowledge on m-commerce usage. It also providing practical guidance for the Libyan government on how to improve user intention for use m-commerce systems.

Keywords: UTAUT; Libya; Performance Expectancy; Behavioral Intention

Introduction

As e-commerce activities developed over the years, this exciting novel business platform attracted great interest among many businesses and a similar approach using mobile phones came into the picture and gained traction with internet users, giving many businesses an even larger customer base (Abou-Shouk & Khalifa, 2017). The timing was perfect following on the rapidly increasing number of mobile phone users worldwide with a recorded penetration level of a remarkable almost 94% (Union, 2018). Currently, millions of users own sophisticated smartphones which can be used to perform conduct complex functions like e-payments, online shopping, e-banking and other mobile marketing services beyond their origin al purpose of making and receiving voice calls (Zhang, Zhu & Liu, 2012).

The mobile e-commerce or mobile-commerce (m-commerce) phenomenon has been defined as "using mobile devices for business activities (Koehler, 1997)." Marcouse *et al.*, (2014) observes that "With m-commerce being a subset of e-commerce, it permits transactions to be performed from anywhere and at any time using mobile devices over a wireless telecommunication network." The definition provided is: "any transaction involving the transfer of ownership or rights to use goods and services which is initiated and/uses mobile access to computerised networks with the help of mobile support" (Chong, 2013).

In Libya, e-commerce penetration is low (Omar, Saadan &Hamad, 2013; Elgahwash, Freeman & Freeman, 2014; Khuja & Mohamed, 2016; El-fitouri, 2015; Massoud *et*

al., 2017; Mostafa & Eniezan, 2018; Mrabet, 2017), at just about 21% in purchases (World Bank, 2019). However, mobile phone penetration in the country touched 11.22 million at end of 2018 based on a report of the Global System for Mobile Communications (Bahia & Suardi, 2019). Furthermore, internet penetration in Libya is currently at nearly 69%. Since the Global web index (2019) has reported that "the majority of Libyans access the Internet via mobile phones, m-commerce appears to be a logical direction for e-commerce businesses to grow." In this regard, it is to be expected that practically all e-commerce biggest players in Libya -

Opensooq, Aswaaq Libys, Salla Fresh, My Libyana, and Libya Card - have used smartphone apps to perform m-commerce activities. However, it has been reported that downloading rates of these apps from *Google Play store* are not high, an indication that much can still be done to significantly enhance acceptance and use of m-commerce apps in Libya (hootsuite, 2019). As a result, determining what affect m-commerce acceptance by the public in Libya can be beneficial in assisting m-commerce service providers in Libya to formulate more effective approaches to increase public acceptance of their services.

Review of Literature

The literature proposed an important trend in e- and m-commerce research that uses behavioral models for predicting user intentions and behaviour. An assortment of methods can be found in the literature for a better understanding of the systems in relation to adopting m-commerce (Chan & Chong, 2013). Researchers commonly seek to better understand how consumers view m-commerce and their eventual behavioral intentions in order to enhance conversion rates (Okazaki & Mendez, 2013; Min, Ji & Qu, 2008; Khalifa, 2018). This is considered a crucial measure employed to establish the number of individuals who make the decision to convert intention to acceptance and purchase. Various theoretical frameworks used in different researches have reported some predictors of behavioral intentions and conversion rates in m-commerce.

The researchers, among them San Martín and Herrero (2012); Swilley, Hofacker & Lamont (2012) proposed and deliberated on various theoretical concepts associated with e-commerce and m-commerce. According to them, some of the most relevant consumer behavioral theories related to m-commerce include: "those of user acceptance and usage, such as Technology Acceptance Model (TAM), Extended TAM (TAM2), the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), and the Unified Theory of Acceptance and Use of Technology (UTAUT), and Commitment -Trust Theory." These models constitute the basis for the

eventual m-commerce research, which has become an important academic focus because of the remarkable exponential growth in web technologies.

Work done by several researchers (Ntsafack, Kamdjoug & Wamba, 2018; Chi, 2018; Verkijika, 2018; Liébana-Cabanillas, Marinković & Kalinić, 2017; Alduaij & Al-Amari, 2016; Moorthy *et al.*, 2017); Benou, Vassilakis, & Vrechopoulos, 2012; Chen, Fay & Wang, 2011) sought to determine the predictors of m-commerce from 2010 to 2018 found a distinct connection between the development of e-commerce and m-commerce capacities to achieve wide adoption of e- and m-commerce. However, there has been scant recent research on the adoption and use of m-commerce applications in the Libyan context. The topic addressed in this study focuses on the individuals' performance expectancy to determine the drivers that facilitate m-commerce behavioral intentions among Libyan mobile users. Consequently, it is necessary to know what is the influence of "performance expectancy" as an independent variable on the "behavioral intention" as the dependent variable to use mobile commerce applications.

Unified Theory of Acceptance and Use of Technology (UTAUT)

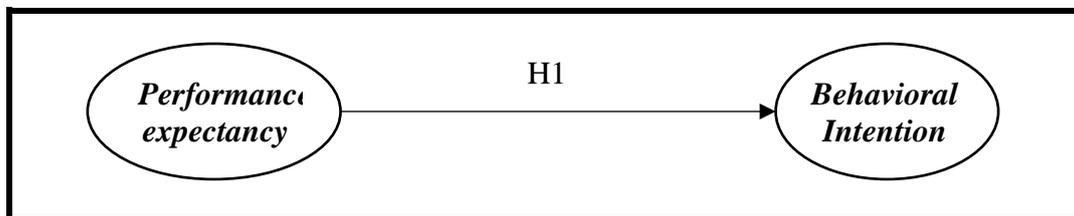
This theory has been developed by Venkatesh *et al.*, in 2003. They carried an important study on Internet commerce and manipulated theories of TAM and other models related to user acceptance such as TRA, and TPB to create UTAUT model "unified theory of

acceptance and use of technology" (Venkatesh *et al.*, 2003). UTAUT Theory recognizes four independent factors: Performance expectancy, Effort Expectancy, social influence, and facilitating conditions. It also includes four moderators and they are: experience, gender, age, and voluntariness, associated with the prediction of behavioral intention of technology usage and actual technology usage mainly in enterprises contexts (Blaise, Halloran & Muchnick, 2018). From UTAUT model, performance expectancy was assumed and reported to impact behavioral intention to use the technology (Venkatesh *et al.*, 2003). According to longitudinal researches of technology acceptance staffs, UTAUT can describe 77% of the variance in behavioral intention to utilize a technology and 52 % of the variance in technology usage (Blaise, Halloran & Muchnick, 2018; Venkatesh *et al.*, 2003). Consequently, the researcher in this study has adapted UTAUT theory to support the relation between performance expectancy and users' behavioral intention to use m-commerce applications.

Proposed model and development of hypothesis

Behavioral intention refers to "a person's subjective probability that he will perform some behaviour" (Ajzen & Fishbein, 1975). "Behavioral intention" also in relation to m-commerce is defined as "a consumer's subjective probability of using an m-commerce application, such as an application for buying or selling of goods via a mobile device" (Chong, 2013; Lee & Sohn, 2017). In this research, the researcher focuses on studying the behavioural intention among mobile phone users in Libya, and their intention to use mobile applications for e-commerce purposes. Researchers have typically included behavioural intention as an important aspect of understanding real adoption behaviour when examining the determinants of technology adoption. Therefore, this study proposes model which can test the influence of users' performance expectancy on users' behavioral intention of the Libyan mobile users. The model is presented in Figure1.

Figure1: Conceptual Framework



Source: Developed for this study

Users' performance expectancy and users' behavioral intention

Performance expectancy refers to "the degree to which an individual perceives that use of a new innovation can improve his/her performance" (Rodrigues, Sarabdeen & Balasubramanian, 2016; Khalifa & Abou-Shouk, 2014). According to Shareef *et al.* (2011), "Performance expectancy demonstrates the highest number of significant relations with behavioral intention." In general, from the studies conducted by (Littler & Melanthiou, 2006; Jaradat & Al Rababaa, 2013; Alsheikh & Bojei, 2014), "individuals will be more highly encouraged to accept and use

new mobile technologies if they are of the view that this service offers more benefits during their daily life." These studies reported that "Performance expectancy has positively impacted on user's behavioral intention to use online banking services." Furthermore, they suggested that users' expectations are raised when they adopt a certain service that meets their needs. However, other studies found that performance expectancy does not play significant role in mobile transactions (Verkijika, 2018). It is also, the reviewed models and theories did not take into account the important role of performance expectancy on users' behavioral intention to use m-

commerce transactions in Libya. This research gap leads to the following research issue, which can be posed as:

Research objective: To examine how performance expectancy and user's behavioral

intention to use m-commerce applications in Libya; are related.

H1: Users' performance expectancy positively influences users' behavioral intention.

Methodology

Data Collection and Sampling Method

The study began with a review of the literature with the aim of building a theoretical research basis and identifying the research gap so as to define the problem and objective (Lawrence Neuman, 2014). Then, online questionnaire was adopted in the second stage in the study with closed-ended questions survey. In this research, convenient sampling is applied, and the questionnaire was delivered and collected by social media applications (Facebook, Viber, WhatsApp) for reasons of practicality and cost-effectiveness, time, and distance. The survey was sent to 600 participants from the Libyan mobile phone users who use smartphones, tablets, and normal cell phones. The sample

size for a given population was taken from the table of Krejcie & Morgan's (1970) which proposes that the sample of the population of more than 1 million should be at least 384 participants.

Measurement of Instrument

The questionnaire of this study contains two main parts. Part A is demographic information and part B is concerning the items of the questionnaire related to the variables. All the measurement items represented in the study were adapted from Venkatesh *et al.* (2003); Alsheikh and Bojei. (2014). Furthermore, five-point Likert scale ranging from 1 "Strongly Disagree" to 5 "Strongly Agree" has been adopted to measure the degree of respondents' answer.

Results

Out of 600 questionnaires, only a total of 310 were usable. The respondents were asked a screening question to determine their expectation and behaviour about the usage of mobile commerce application in their

transactions. Only those who answered with positive answer were allowed to participate in the survey. The results in table 1 represent characteristics and the demographic particulars which was a mix of 310 Libyan male and female.

Table 1: Demographic Particulars

Category	Frequency	%
1. Gender		
- Male	185	59.7%
- Female	125	40.3%
2. Age		
- 20 years or less	34	11%
- 21 to 30 years	72	23.2%
- 31 to 40 years	106	34.2%
- 41 to 50 years	84	27.1%
- 50 years or more	14	4.5%
3. Education level		
- Secondary school	17	5.5%
- Diploma	59	19%
- Undergraduate	137	44.2%
- Postgraduate	73	23.5%
- Others	24	7.7%

Source: Developed for this study

The statistical reliability test for the two variables was conducted through Cronbach's alpha coefficient to ensure internal consistency analysis. Table 2 presents a summary for the

internal consistency reliability for the total questionnaire. The finding of reliability statistics of the total questionnaire was 0.962.

Table 2: Reliability Statistics of the Total Questionnaire

Cronbach's Alpha		N of Items
0.962		8
Item-Total Statistics		
Item	S. M if item Deleted	Cr. Alpha if item deleted
PE1	93.13	0.928
PE2	92.29	0.927
PE3	94.13	0.929
PE4	93.40	0.928
BI1	96.30	0.939
BI2	93.22	0.928
BI3	92.01	0.924
BI4	93.42	0.928

Source: Developed for this Research

Test hypothesis and meet research objective

- **Research objective:** To examine how performance expectancy and user's behavioral intention use m-commerce applications in Libya.

The findings presented that performance expectancy has a positive correlation with users' behavioral intention. As pointed in table 3, the findings showed that the correlation was 0.661 that refers an important relationship between the variables.

Table 3: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.661 ^a	.437	.435	.57902

a. Predictors: (Constant), M_PE

Source: Developed for this Research

- **Test of Hypothesis:** users' performance expectancy positively effects on user' behavioral intention. As shown in Table 4, The findings showed that there is a positive influence of performance

expectancy on user' behavioral intention. The effect reflected by $\beta = 0.589$; $t = 15.887$. As this hypothesis was significant at p-value 0.000, it confirms the impact.

Table 4: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.228	.145		8.478	.000
	M_PE	.617	.040	.661	15.467	.000

a. Dependent Variable: M_BI

Source: Developed for this Research

Discussion

Based on the findings, the hypothesis was supported. The hypothesis proposed that users' performance expectation definitely influences users' behavioral intention to use m-commerce transactions. While the results of this study are inconsistent with other studies that have noted that performance expectation is not an important factor in m-commerce adoption (Verkijika, 2018), it however confirmed results of other studies that have suggested users' performance expectancy is an important factor in m-commerce usage (Littler & Melanthiou, 2006; Jaradat & Al Rababaa, 2013; Alsheikh & Bojei, 2014). That means Libyan companies should pay attention to the benefits of the services that they provide it using m-commerce. Accordingly, the following recommendations are offered to enhance the behavioral intention to use m-commerce.

- both Libyan companies and banks should provide advertising programs on the benefits of the use of commercial mobile applications.
- Libyan companies must provide a good and perceived benefits to the customer using m-commerce application.

Furthermore, this study has limitations as all of the other studies due to time, cost, and effort factors. The limitations of the study and pointers to future research are as follows.

- This study tested the effect of users' performance expectancy on the users' behavioral intention without the effect of demographic factors on this relation which should pay attention to it as moderate factors.
- A longitudinal approach to analyzing the constructs may also be an interesting area of research.
- This study was applied to one developing country (Libya), the model should also be studied in different developing countries to confirm the results as an intention to use m-commerce applications may vary for different countries.
- Users' attitude is another factor that is highly related to behavioral intention

and future studies can analyze the mediating role of the users' attitude between their expectation and their intention to use m-commerce applications.

Future research must care about the above issues in order to extend the knowledge of this important topic.

Conclusion

In Libya, there is little understanding about m-commerce usage. In order to fill this gap, this study had as objective to determine how performance expectancy influences the behavioral intention of Libyan mobile users to use m-commerce transactions. The researcher supported the relationship of this study using the UTAUT theory. The hypothesis was fully supported, broadly indicating that positive performance expectancy can enhance the behavioral intention of Libyan mobile users to use m-commerce transactions.

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