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THE EFFECT OF USERS' EFFORT EXPECTANCY ON USERS' BEHAVIORAL INTENTION TO USE M-COMMERCE APPLICATIONS: CASE STUDY IN LIBYA

Salah M. M. Dagnoush*[1], Gamal S. A. Khalifa[2]

[1]City Graduate School, City University, Malaysia
[2]Faculty of Business, Women Campus, Higher Colleges of Technology, Al-Ain, UAE

**Corresponding Author's E-Mail: sdagnosh@yahoo.com*

ABSTRACT

The object of this study is to examine the relationship between effort expectancy and behavioral intention to use m-commerce in the Libyan context. It also aimed to determine the effect of effort expectancy on users' behavioral intention. Using data from 310 respondents, the model of this study is supported by the Unified Theory of Acceptance and Use of Technology (UTAUT). The findings of the study suggested that there is a positive relationship between users' effort expectancy and users' behavioral intention. The findings also proposed that effort expectancy has a positive influence on users' behavioral intention to use m-commerce in the Libyan context. This study contributes to the body knowledge on m-commerce usage while also providing practical guidance for the Libyan government on how to improve the usage of m-commerce systems. Particularly, it confirms that the user's effort expectancy increases the user's behavioral intention in the Libyan context.

Keywords: UTAUT; Libya; Effort Expectancy; Behavioral Intention

INTRODUCTION

The e-commerce adoption in Libya can help establish a new commercial market and push the Libyan economy to facilitate commercial transactions locally and internationally (Central Bank of Libya, 2018). Furthermore, e-commerce can build the economic knowledge in Libya and develop its value augmented by developed national skills and a strong private sector (Mostafa & Eniezan, 2018). There are many benefits and advantages offered by e-commerce. It can enhance the quality of life among Libyans. It also can save time, effort, and costs (Atkinson, O'Hara & Sturgeon, 2014). E-commerce and e-payment are considered as a solution to the problem of lack of liquidity faced by Libyan banks (Central Bank of Libya, 2018). This is because financial transactions through electronic fund transfers are very fast and can be done from and to any part of the world (Philippe & Boudreau, 2017).

Atkinson 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). A number of research have been carried out in Libya on mobile e-commerce, which identified the existence of weaknesses in the marketing and implementation of e-commerce transactions (Omar, Saadan & Hamad, 2013; Elgahwash, Freeman & Freeman, 2014; Khuja & Mohamed, 2016; El-fitouri, 2015; Massoud, Akel & Noor, 2017; Mostafa & Eniezan, 2018; Mrabet, 2017).

However, as far as this researcher has been able to determine, the literature offers no study that has examined the key factors of Behavioral Intention (BI) to use mobile e-commerce (m-commerce) applications in the context of Libya. Thus, this research proposes bridging this gap. Furthermore, the literature studies examined effort expectancy as independent variable in developed and developing countries. They have been reported to be significant drivers affecting behavioral intention (Venkatesh, Thong & Xu, 2012). Accordingly, a review of the literature has found nothing in the literature that addressed the influence of effort expectancy on users' behavioral intention to use m-commerce applications in the Libyan context.

LITERATURE REVIEW

Unified Theory of Acceptance and Use of Technology (UTAUT)

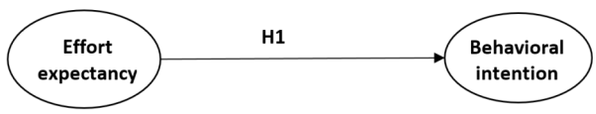
Venkatesh et al. (2003) carried an important study on internet commerce and manipulated TAM and other models related to user acceptance such as TRA, and TPB to create the UTAUT model "unified theory of acceptance and use of technology". Zhou & Lu (2011) argued that UTAUT's theoretical underpinning also reflected features of the Motivational Model (MM), which combined the TAM and TPB, the Model of Personal Computer Utilization (MPCU), Innovation Diffusion Theory (DIT), and Social Cognitive Theory (SCT) (Nabhani, 2015).

UTAUT Theory recognizes four key factors: performance expectancy, effort expectancy, social influence, and facilitating conditions. It also includes four moderators - experience, gender, age, and voluntariness, associated with the prediction of behavioral intention of technology usage and actual technology usage mainly in enterprises contexts (Blaise, 2016). From the UTAUT model, performance expectancy, effort expectancy, and social influence were assumed and reported to impact behavioral intention to use the technology, while behavioral intention and FC determine the use of technology (Venkatesh et al. 2003). Additionally, several amalgamations of the four-moderator were posited and confirmed to moderate different UTAUT linkages. In longitudinal studies of staffs' technology acceptance, UTAUT can describe 77% of the variance in behavioral intention to utilize technology and 52% of the variance in technology usage (Blaise, 2016; Venkatesh et al. 2003). Accordingly, this theory can support the relationship of variables related to this study.

Proposed Model and Development of Hypothesis

In examining the determinants of technology usage, researchers have often considered behavioral intention as an important part of understanding actual use behavior (Khalifa, 2020). The notion of behavioral intention has been variously interpreted (Khalifa, Trung & Hossain 2021; Hossain et al. 2020). According to Zarmpou et al. (2012), the variable BI in the m-commerce field is defined as "a subjective approach of consumers towards the adaptability of mobile commerce." In this research, the researcher focuses on studying the behavioral intention among mobile phone users in Libya, and their intention to use mobile applications for e-commerce purposes. Therefore, the definition of behavioral intention in this study is "a consumer's subjective probability of using an m-commerce application, such as an application for selling and buying of products using a mobile device" (Sohn & Lee, 2017; Chong, 2013; Liebana-Cabanillas, Marinković & Kalinić, 2017). Therefore, this study proposes model which can test the influence of effort expectancy on users' behavioral intention of the Libyan mobile users. The proposed model is presented in Fig. 1.

Figure 1: Conceptual Framework



Source: Developed for this study

Effort Expectancy and Behavioral Intention

According to Rodrigues, Sarabdeen & Balasubramanian (2016), "effort expectancy is the degree to which an individual perceives that the innovation will be easy to use. Indeed, the users' perceived ease of use can be raised when they are using a simple technology (Almarri, et al. 2020a; Almarri, et al. 2020b), which needs little knowledge (Abou-Shouk & Khalifa, 2017), and is thus, easy to run. There is a relationship between a complex system and the intention to adopt that system (Fang et al. 2016; Poorangi et al. 2013; Teo, Chan & Parker, 2004). A more complex system results in reduced acceptance by individuals and less adoptions." Several theories including TAM and the TPB include effort expectancy to influence attitude. Individuals tend to easily use services like self-service technologies. On the contrary, effort expectancy can be a challenge when it is used with technology. Thus, it was proposed that it is important to link "ease-of-use" to "multiple general systems views" regarding system usage. Users may have certain expectations regarding system functionalities and "ease-of-use" should thus reflect multiple users' aspects and experience. Based on the extent of ease-of-use, the system provides a definition of the users' expectations, and will verify the effort expectancy and impact the user's satisfaction. Venkatesh, Thong & Xu (2012) verified that "effort expectancy subsequently affects the satisfaction of individuals and influences the intention to use the system. effort expectancy is obviously linked to satisfaction since it shows the realisation of the likely advantages that would be derived from the system. Additionally, it will lead to supposed benefits as individuals will alter their opinions and bring them closer to the reality."

Several researchers have linked effort expectancy and behavioural intention in their studies, and they found that effort expectancy can affect behavioural intention of the users. For example, Luarn and Lin (2005) reported that "the higher the user's effort expectancy,

the greater the user's behavioural intention to use e-banking services, which agrees with outcomes on m-banking by Alsheikh & Bojei (2014) in Saudi Arabia. Littler & Melanthiou (2006) in their study suggested that there is a positive relationship between effort expectancy and users' behavioural intention to use e-banking services.

Nevertheless, the reviewed models and studies did not take into account the important role of effort expectancy in m-commerce adoption in Libya. This gap in the literature leads to the following research issue which can be posed as:

Research issue: How important is the user's effort expectancy on user's behavioural intention to use m-commerce applications in the Libyan context?

H1: User's effort expectancy positively influences the user's behavioural intention

RESEARCH METHODOLOGY

Data Collection and Sampling Method

Literature review related to e-commerce and m-commerce has been introduced at the beginning, including the review of the previous studies and results with respect to e-commerce and m-commerce. The intention of this review is the identification of key variables, research gaps and critical research issues to serve as the basis for the formulation of the hypotheses (Neuman, 2014). The information about the Libyan context was gathered through global reports and some of the Libyan government departments related to ICT infrastructure in Libya. Furthermore, the study gap was filled by defining factors influencing the adoption of mobile e-commerce using guidelines and shortcomings observed in previous studies.

The researcher then moved to the second step which was a descriptive stage, the questionnaire items to determine statistical data about respondents' profiles, demographic particulars and for a cross-tabulation analysis. Since descriptive research does not determine a direct "cause-and-effect" relationship among the variables of the research, causal research was also performed to test the hypotheses regarding the dependent variable (Zikmund, Carr & Griffin, 2012). A closed-ended questions survey was adopted. In this research, convenient sampling is applied, and the questionnaire was delivered and collected by social media applications for reasons of practicality and cost-effectiveness, time, and distance. The determination of sample size for a given population in the research was taken from Krejcie & Morgan (1970), who refer that the sample of the population more than 1 million should be at least 384 participants.

Measurement of Instrument

The questionnaire 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); Alsharif (2013). Furthermore, a five-point Likert scale ranging from 1 "Strongly Disagree" to 5 "Strongly Agree" has been adopted to measure the degree of respondents' answers (El-Aidie, Alseiari & Khalifa 2021; Almatrooshi et al. 2021; Lei et al. 2021).

RESULTS

Characteristics of Respondents

Out of 600 questionnaires, only a total of 310 were usable. The respondents were asked a screening question to determine their 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 characteristics and the demographic particulars are shown in the next table.

Table 1: Demographic Particulars

DEMOGRAPHIC SURVEY DATA		
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 ormore	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

Table 1 showed the sample group which was a mix of

310 Libyan male and female, with 59.7% male representing 185 respondents and 40.3% female representing 125 respondents. As related to the age category, it had five subcategories started from 20 years old and above with the highest percentage for 31-40 years old with 34.2%, indicating that this group had the highest mobile using frequency and the highest tendency to use the Internet. Following this group was 41-50 years with 27.1%, 21-30 years with 23.2%, less than 20 years with 11.0%, and then more than 50 years with 4.5%. The findings also represent the education background of the respondents which was as follows, out of respondents, 44.2% held undergraduate degrees, postgraduate holders represented 23.5%, Diploma holders were 18.7%, 7.6% were "Others" and the remaining 5.4% were secondary school graduates.

Statistical Reliability Test for the Questionnaire Data

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 0.927.

Table 2: Reliability Statistics of the Total Questionnaire

Reliability Statistics of the Total Questionnaire		
Cronbach's Alpha		**N of Items**
0.927		8
Item - Total Statistics		
Item	**S. M if Item Deleted**	**Cr. Alpha if Item Deleted**
EE1	98.31	0.978
EE2	98.37	0.978
EE3	98.25	0.978
EE4	98.36	0.977
BI5	98.41	0.978
BI6	98.27	0.978
BI7	98.18	0.978
BI8	98.37	0.978

Source: Developed for this study

Correlation

Answering of research issue: "How important is the user's effort expectancy on user's behavioral intention to use m-commerce applications in the Libyan context?"

The findings presented that effort expectancy has a significant relationship with users' behavioral intention with scored R 0.671 as pointed in table 3.

Table 3: Model Summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.671[a]	0.450	0.449	0.57219
a. Predictors: (Constant), M_EE				

Source: Developed for this Research

The Testing of Hypothesis: Users' effort expectancy positively effects the user' behavioral intention.

As shown in Table 4, the statistical test showed that there is a strong empirical support for the relationship between users' effort expectancy and user' behavioral intention. The relation is reflected by β= 0.589; t=15.887. This indicates that effort expectancy is directly and positively associated with the emphasis on users' behavioral intention. As this hypothesis was significant at *p*-value 0.000, it confirms the impact.

Table 4: Coefficients[a]

Coefficients[a]						
		Unstandardized Coefficients		**Standardized Coefficients**		
Model		**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	1.353	0.133		10.136	0.000
	M_EE	0.589	0.037	0.671	15.887	0.000
a. Dependent Variable: M_BI						

Source: Developed for this Research

DISCUSSION

The hypothesis of the study was users' effort expectancy positively influences users' behavioral intention to use m-commerce transactions. The findings supported the study hypothesis, and this agrees with the findings that refer to effort expectancy playing a significant role in the adoption of many technologies (Alsheikh & Bojei, 2014; Littler & Melanthiou, 2006). While the results of this study are not compatible with other studies that have noted that effort expectancy is not an important factor in m-commerce adoption (Lallmahomed, Lallmahomed, Lallmahomed, 2017; Oliveira et al., 2016; Herero, Martin & Salmone, 2017). However, the Libyan government and companies should take care of the complex usage issues of m-commerce applications. Accordingly, the researcher offers some recommendations related to this issue. Firstly, the Libyan companies must provide simple using applications. Secondly, the Libyan banks should provide easy techniques to link between companies and banks. Thirdly, both Libyan companies and banks should provide programs on how to use commercial and banking

mobile applications. Furthermore, the researcher suggested some future studies due to the limitations of the study. The limitation and future studies are explained as following:

- This study examined the effect of only one factor of UTAUT theory on the users' behavioral intention which was effort expectancy. Other factors such as performance expectancy, social influence, and facilitating conditions should be studied.
- This study tested only the factors influencing — commerce applications usage. There is also insufficient information about the factors that affect users' behavioral intention to use social media applications in commercial transactions that should be studied.
- This study examines only users' aspects of — commerce transactions. There is also a need for information about the companies' aspects.
- Trust is another construct that is highly related to behavioral intention and future studies can analyze the mediating role of consumer trust between the factors of current model.

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

CONCLUSION

Prior studies have shown mixed findings across different countries about how effort expectancy influence users' behavioral intention to use any new technology. In the Libyan context, the users' behavioral intention to use new technology is still not understanding especially the use of m-commerce. To fill this gap, this study had as aim to explain how users' behavioral intention to use m-commerce transactions has been influenced by effort expectancy in the Libyan context. The researcher supported the relationship of this study using the UTAUT theory. The results finally presented that there is a high correlation between effort expectancy and users' behavioral intention as well as the hypothesis was fully accepted.

Conflict of Interests

The authors declare that they have no conflict of interests.

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