

M-Commerce adoption in Egypt: An extension to theory of reasoned action

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Abstract

The rapid expansion of electronic commerce (e-commerce) along with the development of technology has changed business. Organizations have continued to expand their presence in e-commerce. As e-commerce grows, so will its impact on the economy. E-commerce provides opportunities for developing countries. It is considered an opportunity for organizations to increase competition, which will be reflected in creating opportunities, increasing employment, encouraging participation at the international level and diffusing the use of information technology. On the other hand, consumers will need to become oriented with information technology for communicating and ordering goods and services electronically.

Purpose: *The Purpose of this research is to investigate the factors that affect SMS mobile adoption in order to provide empirical data to develop a basic model of consumers' adoption of mobile advertising*

Design/ Methodology/Approach: *the study utilized a quantitative approach through self-administered questionnaires distributed on students. A sample of 403 out of 1000 distributed, giving a response rate of 40.3 per cent.*

Findings: *perceived control of mobile advertising and location based had a significant positive effect on attitude. There were a significant positive relationship between attitude, subjective norms and emotions about mobile and mobile users' intention. Furthermore, intention had a positive impact on adoption of mobile advertising.*

Introduction

The rapid expansion of electronic commerce (e-commerce) and mobile commerce (m-commerce) along with the development of technology has changed business. Organizations have continued to expand their presence in e-commerce and m-commerce. As e-commerce grows, so will its impact on the economy. E-commerce and m-commerce provides opportunities for developing countries. From an economic perspective, the mobile phone has become an increasingly attractive product. Mobile phone services include short messages and multimedia messages, internet mobile, mobile e-mail, mobile TV and video calls. Such services have directed organizations to the importance of benefiting from mobile phones in marketing applications and business processes through mobile commerce.

Barutcu (2007, p.25) defined mobile commerce as "any transaction with a monetary value that is implemented via mobile communication networks, a business model that allows customers to complete all the steps of the commercial transaction using mobile devices" (p.26). Mobile Marketing Association's (2013) defined mobile advertising as a "type of advertising that is communicated to the consumer via a handset"

According to Forrester Research, U.S. mobile commerce will reach \$31 billion by 2016, growing at a 39% compound rate. Additionally, the report indicated that mobile commerce is only expected to constitute 7% of overall e-Commerce sales by 2016, and only 1% of general retail sales. A recent study done by Holmers et al. (2014) in UK, showed that people started to adopt mobile shopping due to the great functions offered by smart phones which will be positively reflected on mobile commerce.

In Egypt there was an initiative to adopt the mobile phone commercially by the Sarmady Company. This is a mobile advertising agency belonging to Vodafone Egypt who conducted a successful campaign during last World Cup in 2010. According to a report published on the Sarmady website 1st July (2010), its application 'FilGoal' which is designed to be downloaded on iPhone, NOKIA and Blackberry devices to facilitate World Cup 2010 follow up (for example: getting World Cup 2010 South Africa's Timetable/Schedule, summaries of the whole day match results, instant updates during the soccer match and many other services) played a major role to be ranked no.1 in mobile application downloads in Egypt, Saudi Arabia, Kuwait and the UAE. It was downloaded by more than 30,000 mobile users.

In addition to the economic and social effects of mobile phone diffusion in Egypt, the mobile phone has also imposed itself on Egyptians' political life. This confirms Katz and Aakhus's argument that 'communication scholars, political communication researchers and social scientists should not underestimate the mobile phone's ability to help effect large-scale political change' (Katz and Aakhus 2002, p. 2). Recently, most of the political events in Egypt were marked by the attendance of the mobile phone.

Theoretical Framework

This study aims to extend Theory of reasoned action (TRA) model by identifying factors which influence the main construct of TRA : Attitude towards mobile advertising. Also TRA assumes that the most important direct determinant of behavior is behavioral intention. Success of the theory in explaining behavior depends on the degree to which individuals can have a large degree of control over the behavior. It was noted by Farid (2012) that in order to understand the factors that affect consumers intention towards a behavior it is necessary to measure the factors determining the attitude toward the behavior. This study will test the effect of location based services of mobile advertising and perceived control on consumers' attitude towards mobile advertising.

Location based

Location based pull services are applied by many companies. Nowadays consumers would get the offers that are only near their locations (Bauer et.al, 2005). Companies are now depending on location based in dealing with their customers' services. For example Volvo had developed a safeguard system called "on call". The aim of this system is to connect with the call center if the airbag in a Volvo car was broken. The system would alert the call center of Volvo and replace a call to ensure if the driver and passengers were injured (Robins, 2003). According to Abdel Kader (2013), Egyptian mobile users are concerned with location base. In other words, they like to receive those mobile advertisements which are related to their location in order to maximize the benefits of such ads. We suggest that:

Hypothesis 1: Location based has a direct effect on consumers' attitude towards mobile advertising.

Perceived behavioral control

Perceived control has been used in several studies under different variation and naming for example perceived locus of control (Rotter, 1966), perceived control in achievement

motivation theory (Atkinson, 1964), self-efficacy (Bandura, 1982) and perceived behavioral control in the theory of planned behavior (Ajzen, 1991). Perceived behavioral control is similar to Bandura's self-efficacy (1982) since it is related to a particular action and could change based on the situation action. Few studies found that Perceived control have a positive effect on customer attitudes and behavior (Ghani et al, 1991; Novak et al. 2000; Koufaris et al., 2001-2002). Perceived behavioral control is considered an additional variable to the theory of reasoned action (Fishbein and Ajzen, 1975) which makes theory of planned behavior distinct from the original theory. Harrison et al. (1997) found that perceived behavioral control in adopting new technology was a significant antecedent of intention to adopt new technology. On the other hand, Picazo-Vela (2010) study indicated that perceived behavioral control had no significant impact on intention. We suggest that:

Hypothesis 2 : Perceived behavioral control has a direct effect on consumers' attitude towards mobile advertising.

Attitudes

An attitude is defined as "an index of the degree to which a person likes or dislikes an object" (Ajzen and Fishben, 1980:64). According to Ajzen and Fishbein (1980:159) a person's intention to buy or use a given product is determined by his/her attitude toward buying or using it. Bagozzi (1981) found that attitude influenced behavior only through its effect on intention. This study suggests that consumers' attitude towards mobile advertising will influence consumers' intention to receive mobile advertising.

Hypothesis 3: Consumers' attitude towards mobile advertising has a direct effect on consumers' intention to receive mobile advertising.

Subjective norms

The original meaning of subjective norms is the social stress caused from personal decision for acting a specific behavior or not, which is mainly composed by the "normative beliefs" and the "motivation to comply". Few studies examined the effect of subjective norms on behavioral intentions towards mobile advertising.

Barki and Hartwick (1994) and Taylor and Todd (1995) found that subjective norms is a better predictor of intention in the early phase of information system development. This is also was proven by Venkatesh and Davis (2000) in which they highlighted that subjective norms significantly affect behavioral intention under obligatory situations while by time and through development it is weakened. Moreover, other studies showed no effect and subjective norms turned to be of no significant effect on intentions. Shim and Colleagues (2001) consider it not a major factor that affects online shopping intentions. On the other hand, Nysveen et.al (2005) conducted a study aimed at explaining consumers' intentions to use mobile services. The results confirmed that subjective norms to be an important direct antecedents of consumer's intention to use mobile advertising. We suggest that:

Hypothesis 4: subjective norms have a direct effect on consumers' behavioral intention towards mobile advertising.

Emotions about Mobile

In Information System (IS) literature, it was found that emotions impacted user behavior. This indicates that emotional arousal such as happiness, excitement, frustration, fear,..etc is important to study and would impact consumers' acceptance of mobile advertising (Li et.al., 2012). Zaharna (1995) described Arab culture as being oral-dominant; Arabs rely more on emotional resonance and symbolism more than factual accuracy and analytically interpreting the content of a message Consequently, when investigating a certain phenomenon against its

place of birth, a cultural effect should be present. According to the Arab Advisory Group (2005), mobile phone has a high degree of attachment among different social classes of teenagers. In addition to this, the mobile phone has become an efficient tool for communication due to its ability to send text messages (SMS). The Arab Advisory Group (2005) indicated that 90 per cent of Arab teenagers claim to text more than they talk on their mobile phones, with the purpose of receiving notifications, chatting with friends, and voting in contests or participating in TV entertainment show polls. We suggest that :

Hypothesis 5: Consumers' emotions towards mobile have a direct impact on Consumers behavioral intention of mobile advertising.

Behavioral Intention

It is important to study intentions toward a behavior because as a rule of thumb: the stronger the intention, the more likely the performance of the behavior (Ajzen, 1991, p.181). According to Ajzen (1991, p.179) 'intentions can be predicted from 3 factors: "attitudes toward the behavior", "subjective norms", and "perceived behavioral control"'.

Behavioral intentions were supported by Ryan and Bonfield (1980), as the determinants of behavior as they demonstrated predictive validity and external validity of the TRA model in real-world marketing applications. Consequently, the theory of reasoned action is one of the most significant theories of wide range of human behavior (Vekantesh et al., 2003). Attitude towards mobile advertising and subjective norms will determine the intention to accept mobile advertising and that behavioral intention will determine actual behavior rather than attitudes.

Hypothesis 6: Behavioral Intention towards mobile advertising has a direct effect on consumers' acceptance of mobile advertising.

Research Methodology

Sample and data collection

1000 questionnaires were distributed among university students, 403 questionnaires were completed giving a response rate of 40.3 per cent. 60.8% were males and 39.2% of participants were females. Since they are college students, the age ranged from 18-30 years old and the majority had a monthly income (1000 L.E less than 2000)

The survey instrument selected in this study was a self administered structured questionnaire. The questionnaire was designed by researchers based on reliable and valid scales, already existing in the literature, for each variable under investigation. For consistency, the statements of different scales were presented in the same format as suggested by Bryman (2004).

Table (1.1) conceptual and operational definitions of the study variables.

<i>Variables of the study</i>	Conceptual Definition	Operational Definition
Location Based	Mobile users' geographic location is detected by a mobile carrier or third party and used to generate location and time specific advertising (Heinonen, 2003)	A 7-point likert scale ranging from (1) extremely disagree to (7) extremely agree. This scale was adopted from Abdel Kader (2013)
Perceived behavioural Control	It refers to "people's perceptions of the ease or difficulty of performing the behavior of	A 7-point likert scale ranging from (1) extremely disagree to (7) extremely agree. This scale was adopted from Tsang, Ho and

	interest" (Ajzen,1991)	Liang (2004)
Consumers' Attitude towards mobile advertising	The user's desirability for his or her technology (Ajzen,1988)	This variable was measured by measuring the individual users' positive or negative feelings about receiving SMS ads. A seven point semantic differential scale where (1) indicates that mobile users have an extremely negative attitude, (7) indicate that they have an extremely positive attitude and between the two extremes evaluations number of less evaluation whether positive, negative or no difference. This scale was suggested by Malhatro (1999) and adopted from (Abdel Kader,2013).
Subjective Norms	" Person's perception of how others think he/she should behave, and his/her motivation to comply with the expectations of these referents" (Fishbein& Ajzen,1975)	A seven point Likert scale ranging from (1) extremely disagree to (7) extremely agree. This scale was adopted from Shimp and Kavas (1984)
Consumers' Emotion Towards Mobile	"Organized responses, crossing the boundaries of many psychological subsystems, including the physiological, cognitive, motivational, and experiential systems. Emotions typically arise in response to an event, either internal or external, that has a positively or negatively valence meaning for the individual (Salovey and Mayer,1990)	A 7-point likert scale ranging from (1) very much to (7) Not at all. The scale aims to measure the feelings of respondents when exposed to mobile advertising through asking the question of: When exposed to mobile advertising how strongly do you feel? This scale was adopted from Moore& Harris (1996)
Behavioural Intention	An indication of an individual's readiness to use technology (Ajzen, 1988).	A seven point Likert scale ranging from (1) extremely disagree to (7) extremely agree. This scale was adopted from Putrevu and Lord (1994).
Consumers' acceptance on mobile advertising	"The relatively enduring cognitive and affective perceptual orientation of an individual (Schierz, Schilke, Wirtz, 2010)	A seven point Likert scale ranging from (1) extremely disagree to (7) extremely agree. This scale was adopted from Shimp and Kavas (1984)

The questionnaire was developed based on the conceptual model (see figure 1). A 7- point likert scale was used. The scale ranging from (1) "extremely disagree" to (7) "extremely agree" for

measuring the different independent variables (Perceived behavioral control, subjective norms and behavioral intention). Before starting distributing the questionnaires on the sample of the study, 30 questionnaires were distributed through a pilot study in order to be able to make appropriate changes if required (changes to be made per respondents' comments, or suggestions, or clarity). Furthermore, content validity will also be ascertained by such pre-testing to the questionnaire with a group of professionals and staff members.

Few comments aroused and researchers managed to simplify few words and doing required editing and modifications to the statements.

Analysis and Results

The researchers used the statistical package for social sciences (SPSS). The first statistical analysis to be performed was coefficient Cronbach's alpha to measure the internal reliability analyses to examine various scales. Reliabilities of these scales were as follows

<u>s</u>	Variable	Cronbach's Alpha
<u>1</u>	Location based	0.84
<u>2</u>	Perceived control of mobile advertising	0.91
<u>3</u>	Attitudes	0.75
<u>4</u>	Subjective norms	0.71
<u>5</u>	Emotion about advertising	0.79
<u>6</u>	Intention	0.80
<u>7</u>	Acceptance	0.72

Correlation

S	Variables	<u>1</u>	<u>2</u>	<u>3</u>
1	Location based	1		
2	Perceived control of mobile advertising	0.608**	1	
3	Attitudes	0.185**	0.414**	1

Table (1) Correlation Coefficient between location based, perceived control of mobile advertising and attitudes

Source: the researcher, based on data analysis

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Evidence from table (1) showed that there was a significant positive relationship between location based and attitudes ($r = 0.185$, $p < 0.1$). Also, there is a significant positive relationship between Perceived controls of mobile advertising and attitudes ($r = 0.414$, $p < 0.1$).

S	Variables	1	2		3
1	Attitudes	1			
2	Subjective norms	0.889**	1		
3	Emotion about advertising	0.232**	0.187**	1	
4	Intention	0.310**	0.345**	0.299**	1

Table (2) Correlation Coefficient between attitudes, subjective norms, emotion about advertising and intention.

Source: the researcher, based on data analysis

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Evidence from table (2) showed that there was a significant positive relationship between attitude and intention ($r = 0.310$, $p < 0.1$). Also, there is a significant positive relationship between subjective norms and intention ($r = 0.345$, $p < 0.1$). Furthermore, there is a significant positive relationship between emotion about mobile and intention ($r = 0.299$, $p < 0.1$).

S	Variables	1	2
1	Intention	1	
2	Acceptance	0.338**	1

Table (3) Correlation Coefficient between intention and acceptance.
 Source: the researcher, based on data analysis
 ** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

Evidence from table (3) showed that there was a significant positive relationship between intention and acceptance ($r = 0.338$, $p < 0.1$).

Regression

Variables	B	Beta	T	Sig of T	Classification
Constant	3.096				
Perceived control	0.360	0.478	8.592	0.000	Significant influence.
Location based	-0.190	-0.105	-1.843	0.059	Significant influence.
Multiple R	0.423				
R Square	0.179				
Adjusted R Square	0.175				
Significance of F	.000 (very significant)				

Table (4) regression analysis of location based and perceived control and attitude.
 Source: the researcher, based on data analysis

As shown from table (4) that the multiple regression model equation is expressed as:

$$Y = 3.096 + 0.360 \text{ perceived control} - 0.190 \text{ location based.}$$

Evidence from table (4) showed that the adjusted R² of 0.175 indicates that 17.5 per cent of variance in the attitude can be explained by both location based and perceived control. This is a statistically significant contribution, as indicated by the significant F change value for this line (0.000). The ANOVA table of indicates that the model as a whole is significant {F (2,420) = 45.695}, P < 0.0005}.

Variables	B	Beta	T	Sig of T	Classification
Constant	1.629				
Attitude	-0.047	-0.064	-0654	0.513	Insignificant influence.
Subjective norms	0.285	0.356	3.675	0.000	Significant influence.
Emotion about mobile advertising	0.256	0.247	5.418	0.000	Significant influence
Multiple R	0.421				
R Square	0.177				
Adjusted R Square	0.171				
Significance of F	.000 (very significant)				

Table (5) regression analysis of attitude, subjective norms and emotion about mobile advertising.
 Source: the researcher, based on data analysis

As shown from table (5) that the multiple regression model equation is expressed as:

$$Y = 1.629 - 0.047 \text{ attitude} + 0.285 \text{ subjective norms} + 0.256 \text{ emotion about mobile.}$$

Evidence from table (5) showed that the adjusted R² of 0.171 indicates that 17.1 per cent of variance in the intention can be explained by both subjective norms and emotion about mobile. This is a statistically

significant contribution, as indicated by the significant *F* change value for this line (0.000). The ANOVA table of indicates that the model as a whole is significant {*F* (3,419) = 30.014}, *P* < 0.0005}.

Variables	B	Beta	T	Sig of T	Classification
Constant	2.914				
Intention	0.327	0.338	7.368	0.000	Significant influence
Multiple R	0.338				
R Square	0.114				
Adjusted R Square	0.112				
Significance of <i>F</i>	.000 (very significant)				
Table (6) regression analysis of intention and acceptance.					
Source: the researcher, based on data analysis					

As shown from table (6) that the multiple regression model equation is expressed as:

$$Y = 2.914 + 0.327 \text{ intention.}$$

Evidence from table (6) showed that the adjusted *R*² of 0.112 indicates that 11.2 per cent of variance in the acceptance can be explained by intention. This is a statistically significant contribution, as indicated by the significant *F* change value for this line (0.000). The ANOVA table of indicates that the model as a whole is significant {*F* (1,421) = 54.294}, *P* < 0.0005}.

Discussion and Conclusion

This research makes a number of academic and managerial contributions. The results indicate that attitude and intention are the strongest positive drivers of consumers' adoption of mobile advertising which supports previous studies such as Bagozzi (1981) and (Abdel Kader, 2013). The role of location based and perceived control of mobile advertising is widely validated in the literature on the adoption of technology (Davis, 1989 & Gefen and Straub 2000). The study indicated that consumers' perceived control and location based are directly affecting consumers' attitude towards mobile advertising. This is in line with Harrison et al (1997), Bauer et al., (2005), Picazo-vela (2010) .

Moreover, Davis (1986) and Davis et al. (1989) suggested the importance of subjective norms in influencing ones' behaviour. Karahanna et al. (1999) found that the impact of subjective norms on behavioral intention is more profound for potential adopters than users. They explained this by the work of Triandis (1971) who suggested that subjective norms have a more distinct effect in determining behavior when the behavior is new, as in adoption. With increasing direct experience, individuals are expected to rely less on others and more on their personal attitudes.

Furthermore, it is important to study intentions toward a behavior because the stronger the intention, the more likely the performance of the behavior (Ajzen, 1991). Intentions "can be predicted with high accuracy from attitudes toward the behavior, subjective norms (Ajzen, 1991, p. 179). Based on the sample of the study, this study revealed that attitudes towards mobile advertising, subjective norms and emotions about mobiles have direct effect on consumers' behavioral intentions. In addition, consumers' behavioral intentions affect mobile adoption.

The Study contribution and Managerial Implications

Mobile advertising is considered a new trend in the Egyptian market with very few studies investigated such phenomenon with an attempt to provide more understandings. The research contributed to the literature of mobile commerce and consumer behavior theories and practices. Furthermore, the model supported by this research is considered to be a step toward developing TRA. Such development can be applied on other developing countries. Atiyya (1992), Parnell and Hatem (1999) and Farid (2012) stated that there is a lack of empirical research

into different Arab management practices especially Egyptian. This study is a step forward for enhancing research work and practices in such countries.

Several managerial implications can also be drawn from the study. Firms can take the advantage of using the mobile channel as an informative tool to their customers based on their location. By this firms can guarantee that their messages would reach customers who can act and respond to their messages easily because the messages are within their area. Also firms can send their customers mobile messages to participate in their competitions, games, sweepstakes. By then the firm can identify active customers and can build long term relationship with them

Limitation

One of the research limitations is conducting a cross-sectional survey because it makes it difficult to identify the direction of causality. Thus it is important to rate that the results of this study can only show causality of the research model. Further longitudinal studies are needed to strengthen the model or to provide a better modifications and applications to the study model. Another limitation was the difficulty of data collection. In Egypt collecting primary data for any research requires special concerns and you cannot guarantee getting complete questionnaires.

Recommendations for future research

This research highlighted the importance of mobile devices to mobile users and how it is personalized this raises the need to explore the role of mobile advertising in building customer loyalty through mobiles. Moreover, according to Lu (2014) mobile commerce is considered an extension of e-commerce and that mobile commerce users are also consumers. Therefore, it is important to understand not only what affect consumers' intentions but also what affects continuance intention.

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