Consumer attitudes towards mobile marketing, permission to receive mobile advertising and behavioral intentions: The moderating role of gender

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Abstract

Purpose - Nowadays no one can deny that mobile phones are used as a channel of marketing communication. The increasing market penetration of mobile phones and the global advertising industry's spending in using this medium as a means of marketing communication is rising. However, despite the increasing number of companies investing in mobile marketing campaigns, there is little academic research on this topic and not yet understood fully in the context of Arab countries. This research attempts to help in bridging this gap by examining the effect of factors (ease of use, informativeness and irritation) that affect the attitude of Egyptian young consumers toward mobile and its effect on permission to receive mobile ads led to their behavioral intentions. In addition to examining the factors that affect permission to receive ads. In addition to, the effect of the moderating role of gender. This research based on the research framework derives from McCorkle D., Jurkus V. and Reardon J. (2013).

Design/methodology/approach – Quantitative research approach was adopted; Data are collected from surveys of young consumers in Egypt. A sample of 290 university students.

Findings- The results revealed that gender moderated the relationship between the factors (ease of use, informativeness and irritation) and attitudes towards mobile marketing, factors (incentives and personalized) and permission to receive ads also permission to receive ads and behavioral intentions.

Originality/ value – The study of gender as a moderator variable not deeply studied in previous research in respect to the factors affecting attitudes towards mobile marketing and the factors affecting permission to receive mobile ads.

Implications- This research demonstrates how gender is useful in moderating the relationship between attitude towards receiving mobile ads and consumer behavioral intentions. Hence, the findings will aid marketers to design campaigns that focus more closely on gender.

Keywords- Permission marketing, Mobile advertising, Mobile marketing, Gender, Behavioral Intentions, Egypt.

Introduction

With escalation in the innovation of mobile devices specifically what named as smart phones lead to consumers have all stores on hand and shifted the control to consumer to permit what information to accept and what to reject. The market has been influenced the mobile phones since used as a tool for targeting, interacting, and building relationships with customers (Shabhu et al., 2016). People are attached to their mobiles and use them everywhere and every time, to call and text friends, surf the web, visit social sites (Worku et al.2020) and would feel get lost without their mobiles and find it hard to imagine life without it (Krum, 2010). Mobile phones are 24/7, which make it easy for marketers personalize contents to reach us anytime and anywhere McCorkle D., Jurkus V. and Reardon J (2013). Using mobile marketing should be carefully attained by marketers since consumers control the use of their devices and might view it as intrusion to their personal space therefore messages sent by marketers to consumers influence their attitude towards acceptance (Hossain et al., 2018).

According to Statista (2023) estimates that global mobile advertising spending was \$327 billion and forecasted to be nearly \$400 billion by 2024.Additionally, an increase in the mobile marketing market size is expected to be\$ 57.85 by 2030, showing how mobile technologies are interconnected personal lives. A total of 105.1 million cellular mobile connections were active in Egypt

in 2023, this is equivalent to 93.9 percent of the total population. During the period between 2022 and 023, The number of mobile connections increased by 7 million in Egypt. At the beginning of 2023, there were 80.75 million internet users in Egypt, internet penetration was 72.2 percent and 11.6 percent is between the ages of 18 and 24. (Data Reportal Digital 2023). In the context of the mobile Internet, Okazaki (2004) found that younger generations in their 20s were more likely to use a mobile device and the advertising industry is interested in using mobile marketing as a tool for communicating content. With the growing expenditure in mobile advertising, practitioners and academics have realized the importance of mobile advertising. Sine, prior research examines Western and Asian countries only with little focus on Arab countries. therefore, the aim of this research is to study the attitudes of Young Egyptian consumers towards permission to receive mobile advertising via examining the moderating role of gender based on a model developed by McCorkle D., Jurkus V. and Reardon J. (2013) since authors recommended that for future research to verify and extend their hypothetical model, either with different sample from same population or a new sample. In addition to, among all the research that examined the consumers' attitude of mobile marketing, limited research has researched the moderating effect of gender between factors affecting attitudes towards mobile marketing, the permission to receive ads and the behavioral intentions.

Literature Review

Mobile marketing and Mobile advertising

The terms mobile marketing, mobile advertising, wireless marketing, and mobile commerce are used interchangeably among researchers. Hence, in this research the term mobile marketing is used. de Cosmo, Piper and Di Vittorio (2021) defined mobile marketing as a dialogue between a company and its customers using a mobile device. Mobile Marketing Association (MMA) (2009) defined mobile marketing as a set of practices that enables organizations to communicate and engage with their audience in an interactive and relevant manner through and with any mobile device or network. Dushinski (2009), mobile marketing connects businesses and each of their customers through their mobile devices at the right time and at the right place with the right message and requires the customer's explicit permission and/or active interaction.

Mobile marketing can use text messages, mobile advertising, permission-based marketing to engage customers with the brand (Watson C., McCarthy J., Rowley J. ,2013). Mobile advertising includes e-mails, web links, banner ads, sponsorships, video ads, SMS or MMS advertising Hashim N. ,Normalini & Sajali N. (2018). Consumers perceive text messages as irritating (Samanta, Woods, & Ghanbari, 2009); However, mobile advertising is perceived by marketers as more appealing and generating more

responses than digital media ads (Zhang & Mao, 2008) and reaching younger consumers (Barnes,2002).

Based on the literature review, there are few research on the attitude towards mobile marketing, specifically, on the intention to use the technology (de Cosmo, Piper & Di Vittorio, 2021).

Attitudes towards mobile marketing

The Technology Acceptance Model (TAM) introduced by Fred Davis more than 25 years ago and it still plays a great role in understanding the predictors of human behavior toward the acceptance or rejection of technology. TAM demonstrated that the use of information systems includes perceived usefulness, perceived ease of use, attitude, intention, and use. Many researchers confirmed the relationships between attitude, intention, and behavior (Marangunić, N.& Granić ,2015). In addition to the Theory of Planned Behavior (TPB) model, behavioral intention is influenced by attitude, subjective norm, and Perceived Behavior control. According to Apraci et. al. (2021) attitude towards to use is one of the variables that can be used to measure behavioral intentions. Attitude is an important construct in research. Fishbein and Ajzen (1975) defined attitude as a learned predisposition of human beings in which an individual responds to an object (or an idea) or things (or opinions). In addition, Kotler (2000) demonstrated that attitude is a person's enduring favorable or unfavorable evaluation,

emotional feeling and action tendency towards some objects or ideas. Goldsmith and Bridges' (2000) stated that there are three elements that constitute attitude towards some objects: beliefs, feelings, and behavioral intentions.

According to Petty, Wegener and Fabriger (1997 as cited in Hawkins and Mothersaugh ,2020) attitude is the way one thinks, feels, and acts towards environmental aspects such as retail store television or a product. This means that attitude is related to behavior. Madahi and Sukati (2016), Malaysian consumers change channels online to offline, and vice versa, when a channel is not favorable. Hashim N., Normalini & Sajali N. (2018) stated that consumer attitude towards mobile marketing is highly dependent upon the attitudes held towards advertising in general and the results showed that attitude significantly and positively predicted consumers' behavioral intention. Verma et al. (2021) demonstrated that attitude influence acceptance of mobile marketing among generation Z. In contrast, Worku et al. (2020) stated that attitude did not have a positive attitude towards mobile marketing among students. There are many factors that affect attitude. This research will study easy to use, informativeness and irritation as the factors that can affect attitudes towards mobile marketing based in the following reviewed literature.

According to Davis (1989 as cited in Koksalmis & Gozudok , 2021), perceived usefulness and perceived ease of use are sufficient to predict the attitude of a user toward the use of a system. In addition, several researchers found a strong influence of perceived ease of use and technology adoption (Davis, 1989; Luarn and Lin, 2005; Venkatesh and Davis, 1996, 2000; Wang and Liao, 2007). In early stage of product adoption, user friendliness is vital and hence should be determinant to explain attitudes towards mobile marketing (McCorkle et al. ,2013)

Informativeness can be defined as "the ability of advertising to inform consumers of product alternatives so that purchases yield the greatest possible satisfaction" (Ducoffe, 1996). In the context of Mobile advertising, consumers are confused, distracts, and overwhelmed by the information provided and thus react negatively (Stewart & Pavlou, 2002). Thus, information sent to consumers via mobile devices should be accurate, timely, and useful for consumers (Siau, K. and Z. Shen ,2003). In addition to, consumers want information that caters their interests needs (Kaasinen, 2003 and Robins, 2003). Bauer et al. (2005) demonstrated that the main reason consumers accept advertising is information. Hashim N., Normalini & Sajali N. (2018) stated that consumer perception of the company and its products is directly influenced by the quality of information. In the context of mobile advertising, (Varshney, 2003) stated that information is a valuable variable and that recipients react

positively to the advertisement that transfers knowledge. Thus, informativeness of advertising messages influence consumers attitude towards accepting mobile advertising.

In the context of advertising, irritation was defined as annoying, offensive, insulting, or manipulative content and perceived by consumers as unwanted and irritating (Ducoffe ,1996). Consumers view mobile marketing communications tools using text or SMS messages to be annoying (Phuong & An, 2017), irritating (Muk, 2007) and tend to ignore the message when interrupted by an advertisement (Tsang M., Ho S. & Liang T. ,2004). In addition to, unrelated advertising messages sent by brands are a source of disturbance and annoyance to individuals' life (Jan, Hanif & Hafeez, 2022). Unwanted mobile advertising messages known as spam causes irritation and negatively affect the perceived value mobile advertising marketing (Dickinger, 2005). Spam intrudes privacy and restrain consumer acceptance (Hashim N., Normalini & Norhazlina Sajali N. ,2018). Unnecessary, unattractive, and unrelated marketing messaging sent to consumers based on the personal information obtained from them is a source of irritation (Jan et al., 2022). Hence, irritation can affect consumer attitude negatively towards accepting mobile advertising. Thus, the following hypotheses are developed,

H1: There is a significant relationship between easy to use and attitudes towards mobile marketing.

H2: There is a significant relationship between informativeness and attitudes towards mobile marketing.

H3: There is a negative significant relationship between irritation and attitudes towards mobile marketing.

H4: There is a significant relationship between attitudes towards mobile marketing and permission to receive mobile advertising.

Permission to receive mobile advertising and Behavioral intentions

Permission marketing allows consumers to opt-in or opt-out granting consumers control over the messages received via electronic channels (Godin, 1999).Leppäniemi M.& Karjaluoto H. (2008) defined Permission-based mobile advertising as a message (e.g. SMS and MMS) that has been requested by the consumer as part of an opt-in scheme (e.g. a consumer fills in their mobile phone number on a regular customer registration form and agrees to receive commercial messages and information of interest). Watson C., McCarthy J., Rowley J. (2013) demonstrated how consumers like to exert control over their interaction with businesses since they view their mobile devices to be used for personal communication and the success of

permission marketing is based on how marketers comprehend what leads consumers to grant permission. Hence, this research will study how incentives and personalized ads can affect permission marketing.

New marketing communication channels have been created by technology development like short Messaging Service (SMS), Multimedia Messaging Service (MMS) and email (Worku et al.2020). According to Forrester report (2001 as cited in Worku et al., 2020), using digital communication channels enhanced the chances to reach consumers by permitting personalization of the context and content of the message. Thus, consumers have the option of expressing their preferences, in respect of, for instance, personalization, timing, location and information content of messages (Stewart & Pavlou, 2002). Personalization of mobile ads is a must (Tsang M., Ho S. & Liang T. 2004)

Incentive-based advertising is to provide financial rewards to individuals who agree to receive promotions and campaigns such as free connection time to listen to advertisements (Tsang M., Ho S. & Liang T,2004). Several scholars highlighted the importance of incentives (Barwise & Strong, 2002 and Drossos et. al ,2007). Incentives and compelling content could be used to avoid risk perception and personal attachment (Gao, T., Sultan, F., & Rohm, A. J. ,2010). Tsang M., Ho S. & Liang T (2004) stated consumer

intentions to receive mobile advertising is influenced by incentives. Thus, the following hypotheses are developed,

H5- There is a significant relationship between personalized advertising messages and permission to receive mobile advertising.

H6 - There is a significant relationship between incentives and permission to receive mobile advertising.

H7- There is a significant relationship between permission to receive mobile advertising and behavioral intentions.

Gender differences and the moderating role of gender

Several studies examined the role of gender and its impact on adoption of mobile. Prior research indicates that gender is one of the key attributes and predictors of online purchase intention (Rodgers and Harris 2003). Leppäniemi M.& Karjaluoto H. (2008) stated that women are more active than men in their responses to SMS call to-action campaigns.

According to Zhang et al. (2007) stated that distance purchasing behavior and the acceptance of technologies can be influenced by the using socio-demographics characteristics as moderators of these variables. Several researchers examined gender differences in reference to online purchasing (Rodgers & Harris, 2003 and Luo et al., 2006). Goldsmith and Flynn (2004) stated that gender is related to on-line purchasing and that

women buy clothes on-line more than men. Men and women perceive service differently although same usage of electronic mail (Gefen and Straub,1997). Women are more active thanmen in mobile "pull" marketing and no gender differences in mobile "push" marketing (Karjaluoto et al. ,2006). On the hand, no relation was detected between gender and attitudes towards mobile website advertising (Okazaki ,2004). Gender differences were found towards permission marketing (Jayawardhena et al. ,2009). Based on literature, personal characteristics as variables moderate the relation between a stimulus and a response (San Martín Gutiérrez, S., López-Catalán, B., & Ramon-Jeronimo, M. A. ,2012). Thus, the following hypotheses are developed,

H8- There are gender differences in the relationship between ease of use and attitudes towards mobile marketing.

H9- There are gender differences in the relationship between informativeness and attitudes towards mobile marketing.

H10- There are gender differences in the relationship between irritation and attitudes towards mobile marketing.

H11- There are gender differences the relationship between attitudes towards mobile marketing, permission to receive mobile advertising and behavioral intentions.

H12- There are gender differences in the relationship between personalized mobile messages, and permission to receive mobile advertising.

H13- There are gender differences in the relationship between incentives and permission to receive mobile advertising.

H14- There are gender differences in the relationship between attitudes towards mobile marketing, permission to receive mobile advertising and behavioral intentions.

H15- Gender moderates the relationship between attitudes towards mobile marketing, permission to receive mobile advertising and behavioral intentions.

Research Framework

Based on the model developed by McCorkle D., Jurkus V. and Reardon J .(2013) about attitudes toward mobile advertising and consumer behavioral intentions, a research framework is constructed to illustrate the factors (ease of use , informativeness and irritation)   affecting consumer attitudes toward mobile marketing ,the relationships between attitudes towards mobile marketing and the permission to receive mobile advertisements through the effect of incentives and personalized content and the effect of the permission to receive mobile advertisements on behavioral intentions through the moderating role of gender. The

author added the gender as a moderating variable to the adopted hypothesized model as shown in Figure 1.
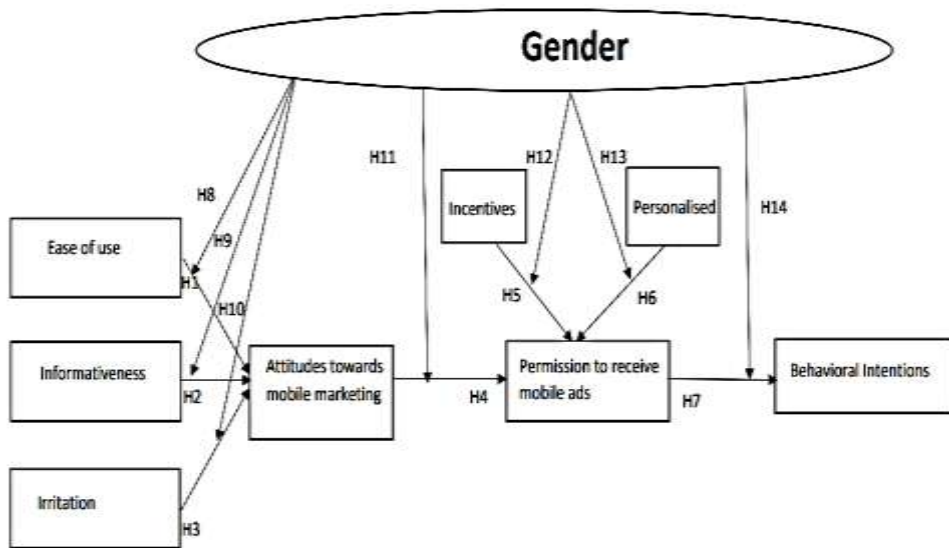

Figure 1: Conceptual Framework

Source: The model adopted from McCorkle D., Jurkus V. and Reardon J. (2013) and the author added the moderating role of gender

Research Methodology

The study involved 290 respondents aged 18 to 24 years, of whom 61% females and 39% males. The target population of this study was all undergraduate students since Du (2012) and Gao (2010) stated that the ability of young consumers to use SMS has a significant impact on mobile marketing. An

anonymous structured survey was conducted to conduct the survey. Based on the model adopted from McCorkle D., Jurkus V. and Reardon J. (2013). The questionnaire consists of 25 items. The items measured on a 5-point Likert scale. The questionnaire consists of four parts. The first part of the questionnaire asks about respondents' antecedents of attitude; Easy to Use adapted from Pedersen (2005), Informativeness adapted from Ducoffe (1996) and McCorkle D., Jurkus V., Reardon J. (2013). Irritation adapted from Tsang, Ho and Liang (2004); and McCorkle D., Jurkus V., Auruskeviciene V., Reardon J. (2013). The second part of the questionnaire asks about respondents' Attitudes Toward Mobile Marketing adapted from Tsang, Ho and Liang (2004); Ducoffe (1996); Alwitt and Prabhacker (1994) towards mobile marketing. The third part asks about respondents' permission to receive ads adapted from Skelton (2009). The fourth part asks about respondents' Incentives adapted from Skelton (2009) and Personalization adapted from McCorkle D., Jurkus V., Auruskeviciene V., Reardon J. (2013). The fifth part measures respondents' behavioral intentions adapted from McCorkle D., Jurkus V., Auruskeviciene V., Reardon J. (2013). The final part collects the demographic data and was measured in a categorical scale. The questionnaire was pretested on 30 participants, and no changes were required based on their feedback.

Data collection and analysis

The questionnaires were distributed based on a convenience sampling method and collected in the Egyptian Universities. 350 questionnaires were distributed, and 290 usable samples were obtained after excluding incomplete questionnaires, yielding an 83% response rate from those who agree to participate. Respondents were profiled (Table 1) based on gender, age, education and income. 61% of the sample was female. Ages ranged from 18 to 24, with the majority (53%) falling into the age brackets 21–24; specifically, 18–21: 45%; under 18: 0.3%; 24+: 1%. The sample was relatively in third and fourth year of college, with 44% being in third year.

Using SPSS software V. 23 to analyze the data and get the descriptive statistics, Cronbach's α that used to verify the internal consistency reliability, and correlation coefficients. While for the structural equation modeling, the AMOS software V. 23 is used. AMOS is designed to estimate and test structural equation models (SEMs). SEMs are statistical models of linear relationships among latent (unobserved) variables and manifest (observed) variables. Its purpose is estimating the coefficients in a set of structural equations.

For this paper AMOS is used to investigate the causal relationships, where the path coefficients are tested for significance and goodness-of-fit. The overall model fit measures

were used to evaluate the fit of the structural model. The goodness-of-fit indices that used for measurement and structural models are: χ^2 test, normed χ^2, Goodness of Fit Index(GFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). The standardized estimates were used in reporting the causal relationships between the exogenous and endogenous constructs.

Table 1: Descriptive statistics of the demographic characteristics of respondents (frequency tables)

Variable	Frequency	%	Cumulative %
I. Age			
Under 18	1	.3	.3
18 to less than 21	132	45.5	45.9
21 to less than 24	154	53.1	99.0
24+	3	1.0	100.0
II. Gender			
Male	113	39.0	39.0
Female	177	61.0	100.0
III. Education			
1st year college	35	12.1	12.1
2nd year college	50	17.2	29.3
3rd year college	127	43.8	73.1
4th year college	75	25.9	99.0
5th year college	3	1.0	100.0

IV. Allowance			
Less than LE 1000	79	27.2	27.2
LE 1000 to less than LE 2000	125	43.1	70.3
LE 2000 to less than LE 3000	45	15.5	85.9
LE 3000 or more	41	14.1	100.0
V. Family Income			
Less than LE 5000	5	1.7	1.7
LE 5000 to less than LE 10000	18	6.2	7.9
LE 10000 to less than LE 15000	11	3.8	11.7
LE 15000 or more	74	25.5	37.2
I don't know	182	62.8	100.0

The proposed structural model was estimated by SEM, which included a test of the overall model fit and individual tests of the significance of the relationships among the variables. These tests indicated the relationship between the variables (Figure 2). The estimations of the parameters and the overall fit index of the measurement model are based on the maximum likelihood (ML) method. The basic assumptions of ML method (Byrne, 2001 & El-Sheikh et al., 2017) are met or closely approximated in the study. Further, the sample is sufficiently large ($n = 290$ cases), over the recommended size of 200 cases (Medsker et al., 1994), the scale of observed variables is

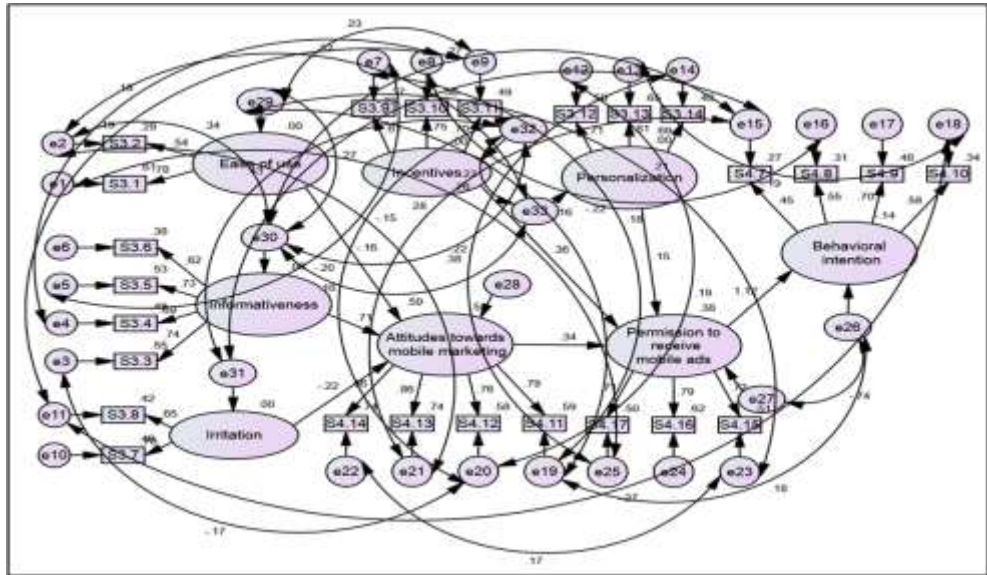continuous, and no violations of multivariate normality are found in the survey responses.

Figure 2

Table 2: Properties of measures (convergent validity and reliability)

Construct	Item	Standardized loading	Cronbach's α	CR
Ease of use			.605	.611
	S3.1	.779		
	S3.2	.537		
Informativeness			.803	.789
	S3.3	.740		
	S3.4	.691		
	S3.5	.729		
	S3.6	.619		

			.721	.725
Incentives			.721	.725
	S3.9	.605		
	S3.10	.747		
	S3.11	.697		
Irritation			.631	.622
	S3.7	.696		
	S3.8	.648		
Personalization			.785	.782
	S3.12	.708		
	S3.13	.809		
	S3.14	.695		
Behavioral intentions			.675	.674
	S4.7	.500		
	S4.8	.554		
	S4.9	.695		
	S4.10	.581		
Attitudes towards mobile marketing			.892	.889
	S4.11	.787		
	S4.12	.758		
	S4.13	.861		
	S4.14	.858		
Permission to receive mobile ads			.784	.783
	S4.15	.720		
	S4.16	.789		
	S4.17	.705		

Note: CR, construct reliability, and **Cronbach's α of all constructs is .874**

Table 2 presents the reliability of the measurement items was verified using Cronbach's **α** to assess the internal consistency of the constructs in the model. The level of internal consistency for each construct was acceptable, which exceeded

the minimum hurdle of 0.60 (Hair et al., 1998). All measurement items had standardized loading estimates higher than 0.4, indicating the convergent validity of the measurement model. Also, construct reliability (CR) was verified to estimate convergent validity; each construct had acceptable construct reliability, because all three constructs exceeded the minimum criterion of 0.5 (Hair et al., 1998).

Table 3 presents the model fit indices of the structural model and the cut-off value of those fit indices. The goodness-of fit statistics show that the structural model fit the data reasonably well and the structural model was a reasonable fit.

Table 3: Model fit statistics

Structural model	Fit statistics	Cut-off value
χ^2	245.675	------
p-value of χ^2	.370	>0.05
Normed χ^2	1.028	<3.00
Goodness of Fit Index (GFI)	.939	>0.90
Normed Fit Index (NFI)	.917	>0.90
Comparative Fit Index (CFI)	.997	>0.90
Root Mean Square Error of Approximation (RMSEA)	.010	< 0.09

Table 4: Maximum likelihood estimates for research model ($n = 290$)

Hypothesis	Independent variable	Dependent variable	Estimate	Standard error	t-statistic	p-value
H1	Ease of use	Attitudes towards mobile marketing	-.170	.080	-2.120	.034
H2	Informativeness	Attitudes towards mobile marketing	.769	.087	8.860	***
H3	Irritation	Attitudes towards mobile marketing	-.249	.076	-3.283	.001
H4	Attitudes towards mobile marketing	Permission to receive mobile ads	.287	.052	5.481	***
H5	Personalization	Permission to receive mobile ads	.151	.058	2.585	.010
H6	Incentives	Permission to receive mobile ads	.410	.076	5.397	***
H7	Permission to receive mobile ads	Behavioural intentions	.743	.142	5.224	***

Notes: ***significant at the p < 0.001 level (two-tailed).

Table 4 presents the results of the individual tests of the significance of the relationship among the variables. Among the relationships tested, we found that all the relationships are significant at the significant level of 0.05 (this means that the hypotheses of these relationships are accepted).

Ease of use has a negative direct impact on attitudes towards ads (-0,170) and negative indirect impact on permission to receive ads through attitudes towards mobile marketing. image and this indirect effect = -0.049 (-0,170*0.287).

Informativeness has a positive direct impact on attitudes towards mobile marketing (0.769) and has positive indirect impact on

permission to receive ads through attitudes towards mobile marketing and this indirect effect = 0.220 (0.769*0.287).

Irritation has a negative direct impact on attitudes towards mobile marketing (-0.249) and negative indirect impact on permission to receive ads through attitudes towards mobile marketing and this indirect effect = 0.071(-0.249*0.287).

Attitudes towards mobile marketing has a positive direct impact on permission to receive ads (0.287) and has positive indirect impact on behavioral intentions through permission to receive ads and this indirect effect =0.213(0.287*0.743).

Personalization has a positive direct impact on permission to receive ads (0.151) and has positive indirect impact on behavioral intentions through permission to receive ads and this indirect effect = 0.112(0.151*0.743).

Incentives have a positive direct impact on permission to receive ads (0.410) and have positive indirect impact on behavioral intentions through permission to receive ads and this indirect effect =0.304 (0.410*0.743).

Permission to receive ads has a positive direct impact on behavioral intentions (0.743).

Table 5: Maximum likelihood estimates: in case of the gender as a moderator

Hypothesis	Independent variable	Dependent variable	Estimate	t-statistic	p-value
I. Male ($n = 113$)					
H8	Ease of use	Attitudes towards mobile marketing	-.116	-.585	.558
H9	Informativeness	Attitudes towards mobile marketing	.724	5.131	***
H10	Irritation	Attitudes towards mobile marketing	-.255	-2.197	.028
H11	Attitudes towards mobile marketing	Permission to receive mobile ads	.308	3.917	***
H12	Personalization	Permission to receive mobile ads	.077	.892	.372
H13	Incentives	Permission to receive mobile ads	.549	4.499	***
H14	Permission to receive mobile ads	Behavioural intentions	.689	3.794	***
II. Female ($n = 177$)					
H8	Ease of use	Attitudes towards mobile marketing	-.149	-1.829	.067
H9	Informativeness	Attitudes towards mobile marketing	.765	7.403	***
H10	Irritation	Attitudes towards mobile marketing	-.199	-2.161	.031
H11	Attitudes towards mobile marketing	Permission to receive mobile ads	.252	3.870	***
H12	Personalization	Permission to receive mobile ads	.229	3.128	.002
H13	Incentives	Permission to receive mobile ads	.241	2.936	.003
H14	Permission to receive mobile ads	Behavioural intentions	.980	3.978	***

III. Goodness of fit statistics and difference χ^2 test							
Model	χ^2	df	P-value	Normed χ^2	CFI	GFI	RMSEA
Unconstrained	620.513	480	.000	1.293	.950	.900	.032
Constrained	673.340	504	.000	1.336	.939	.900	.034
Difference	52.827	24	.001	The groups differed significantly at 0.01			

Notes: ***significant at the p < 0.001 level (two-tailed).

Table 5 presents the results of the individual tests of the significance of the relationship among the variables in case of the

gender as a moderator. The chi-square difference test is used to determine whether the path coefficients differed. Among the relationships tested, we found that the difference χ^2 value (Constrained χ^2 – Unconstrained χ^2) is 52.827 with p-value 0.001, then the difference in the chi-square values of the two models was significant. This means that the gender significantly moderates the effect among the relationship among the variables.

The relationship between ease of use and attitudes towards mobile marketing is insignificant for both males and females.

There is a significant difference between male and females in the relationship between informativeness and attitudes towards mobile marketing. Females are higher than males.

There is a significant difference between male and females in the relationship between irritation and attitudes towards mobile marketing. Males are higher than females.

There is a significant difference between male and females in the relationship between attitudes towards mobile marketing and permission to receive ads. Males are higher than females.

There is a significant difference between male and females in the relationship between personalization and permission to receive ads. For males, personalization has no impact on permission to receive ads.

There is a significant difference between male and females in the relationship between incentives and permission to receive ads. Males are higher than females.

There is a significant difference between male and females in the relationship between permission to receive ads and behavioral intentions. Females are higher than males.

Discussion

The present research provides evidence of consumers' behavioral intentions based on the effect of attitude towards mobile marketing and permission to receive mobile advertising. The gender moderated the relationship between all variables. The hypotheses of this study were expected to be significant. Indeed, positive, and significant relationships were found, supporting H2, H4, H5, H6, H7, H9, H11, H12, H13, H14 and H15. However, other negative and significant were found too, especially H1, H3 and H10. In addition to that, insignificant relationship was found in H 8.

Based on the data analyses and findings, the factors influencing attitude towards mobile advertising found to have a significant relationship and thus respondents had a positive attitude towards mobile marketing due to timely and useful information and this consistent with McCorkle et al. (2013) as well as the content that is not annoying and intruding personal lives. In addition, behavioral intentions are influenced by

permission to receive ads. The role of permission marketing is vital for mobile marketing. Based on the literature review, the significant effect of attitude towards permission marketing on permission to receive mobile advertising found in this research is consistent with other researchers (Verma et al. (2021) implies that before consumers attitude towards mobile advertising needs to be formed to grant permission to receive mobile advertising. The results are consistent with Hashim N., Normalini & Sajali N. (2018) stated that consumer attitude towards mobile marketing is highly dependent upon the attitudes held towards mobile advertising in general and the results showed that attitude significantly and positively affect consumers' behavioral intention via permission to receive mobile advertising. The linkage between permission to receive mobile ads and behavioral intentions has also been found in other studies (Lehman, & Pearson, 2005). This finding suggests that a significant relationship between permission to receive mobile advertising behavioral intentions can be developed via personalization of mobile advertising messages and incentives such as financial incentives, free coupons and product or service discounts. Results showed that gender differences were found in attitudes towards permission marketing, this is consistent with (Jayawardhena et al. ,2009).

Conclusion

Mobiles are like our homes since perceived by consumers as their personal space. Hence, homes we live in and mobile we live with.

The research aimed at investigating the moderating effect of gender between the relationship of attitudes towards mobile marketing, permission to receive ads and behavioral intentions. The results confirmed that gender moderates the effect of factors (ease of use, informativeness and ease of use) on attitudes towards mobile marketing, attitudes towards mobile marketing and permission to receive ads, the factors affecting the permission to receive ads and permission to receive ads and behavioral intentions. These gender differences have been explained in terms of consumers attitudes and behavioral intentions. Hence, marketers should tackle the differences in attitudes towards mobile marketing, permission to receive ads and behavioral intentions to tailor their marketing campaigns.

Implications

The results of this research will aid practitioners to develop mobile marketing campaigns by understanding how consumers develop a positive attitude towards mobile marketing considering how positive attitude is formed by providing useful information in the content of the message and creating message that fits the

consumers interests without intruding their privacy to overcome irritation. In addition to, marketers in Egypt should continue to understand the factors that affect consumers to grant permission to receive mobile advertising such as how to personalize messages and provide incentives that lead to behavioral intentions.

Limitations and future suggestions

The limitations of the study relate to external validity since the survey respondents were from only one country and a convenience sampling method was utilized. The study examined attitude of Egyptian students as according to Sulaiman, Ng and Mohezar (2008) students are more familiar with the Internet and computer usage compared to other groups. As such, the results are generalizable only for Young Egyptian mobile phone users. However, the rationale for studying Egyptian consumers relates to their widespread use of the mobile phones. Recent statistics revealed that Egypt has high level of mobile phone penetration with a rate of 72.2 percent and 11.6 percent is between the ages of 18 and 24 per cent (Statista ,2023). Given the forecast of increased use of mobile advertising by advertisers. It should be highlighted that the culture of a country has an impact on consumers' adoption of technology and reactions to advertisements (Muk, 2007). Therefore, any international generalization of the findings must be treated with caution.

Future researchers might examine other age groups of Egyptian consumers' and investigate the effect of other demographic factors, such as age, mobile phone usage frequency, income level, and culture difference, on issues such as trust with mobile marketing.

References

Alwitt, L.F., & Prabhacker, P.R. (1994). Functional and belief dimensions of attitudes to television advertising: implications for copy testing. Journal of Advertising Research, 32(5), 30-42.

Arpaci, I., Al-Emran, M., Al-Sharafi, M.A., Shaalan, K. (2021). A Novel Approach for Predicting the Adoption of Smartwatches Using Machine Learning Algorithms. In: Al-Emran, M., Shaalan, K., Hassanien, A. (eds) Recent Advances in Intelligent Systems and Smart Applications. Studies in Systems, Decision and Control, vol 295. Springer, Cham. https://doi.org/10.1007/978-3-030-47411-9_10

Bauer, H., Barnes, S., Reichardt, T., & Neumann, M. M. (2005). Driving consumer acceptance of mobile marketing: A theoretical framework and empirical study. Journal of Electronic Commerce Research, 6(3), 181–192

Barnes, S. J. (2002). Wireless digital advertising: nature and implications. International Journal of Advertising, 21(3), 399–420.

Barwise, P., & Strong, C. (2002). Permission-based mobile advertising. Journal of Interactive Marketing, 16(1), 14–24.

Byrne, B.M. (2001), Structural Equation Modelling with AMOS: Basic Concepts, Applications and Programming, Lawrence Erlbaum Associates, Mahwah, NJ.

Data Reportal Digital 2023:Egypt https://datareportal.com/reports/digital-(2023).egypt.#:~:text=The%20state%20of%20digital%20in%20Egypt%20in%202023&text=Egypt%20was%20home%20to%2046.25,percent%20of%20the%20total%20population.

Dickinger, A. S. (2005). Diffusion and success factors of mobile marketing. Electronic Commerce Research and Applications, 4(2), 159–173. http://dx.doi.Org/10.1016/j.elerap.2004.10.006

Drossos, D., Giaglis, G., Lekakos, G., Kokkinaki, F., & Stavraki, M. (2007). Determinants of effective SMS advertising: an experimental study. Journal of Interactive Advertising, 7(2). http://jiad.org/article90.

de Cosmo, L. M.; Piper, L. & Di Vittorio, A. (2021). The role of attitude toward chatbots and privacy concern on the relationship between attitude toward mobile advertising and behavioural intent to use chatbots. Italian Journal of Marketing, pp. 83–102.

Du, P. (2012). Factors influencing consumers' acceptance of mobile marketing: An empirical study of the Chinese youth market. International Journal of China Marketing, 2(2), 24- 37.

Ducoffe, R.H.(1996). Advertising Value and Advertising on the Web. Journal of Advertising Research, pp. 21-36.

El-Sheikh, A. A., Abonazel, M. R., & Gamil, N. (2017). A Review of Software Packages for Structural Equation Modeling: A Comparative Study. *Applied Mathematics and Physics*, 5(3), 85-94.

Fishbein, M., and Ajzen, I. Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research, Reading, MA: Addison-Wesley, 1975.

Gao, T., Sultan, F., & Rohm, A. J. (2010). Factors influencing Chinese youth consumers' acceptance of mobile marketing. Journal of Consumer Marketing, 27(7), 574–583.

Gefen, D. And Straub, D. (1997). Gender Difference in the Perception and Use of E-Mail: An Extension to the Technology Acceptance Model. MIS Quarterly, Vol. 21, No. 4

Godin, S. (1999). Permission marketing. New York: Simon & Schuster.

Goldsmith, R. E., & Bridges, E. (2000). E-tailing versus retailing: Using attitudes to predict online buying behaviour. Quarterly Journal of Electronic Commerce, 1(3), 245–253.

Goldsmith, R.E. and Flynn, L.R. (2004). Psychological and behavioural drivers of online clothing purchase. Journal of Fashion Marketing and Management, No. 8, pp. 25-40.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998), Multivariate Data Analysis,5th ed., Prentice Hall, Upper Saddle River, NJ.

Hashim N., Normalini & Sajali N. (2018). The Influence Factors Towards Mobile Advertising Message Content on Consumer Purchase Intention. Global Business Review.19(5) 1187–1206. SAGE Publications. http://journals.sagepub.com/home/gbr.

Hawkins and Mothersaugh (2020), Consumer Behaviour, (14th ed.) Building Marketing Strategy, McGraw-Hill, New York, NY., p.398.

Hossain, M.A.; Jahan, N.; Islam, S. & Chowdhury, S.P. (2018), "The antecedents of word-of-mouth attitude in mobile advertising: an experimental study", International Journal of Asian Social Science, 8(6), pp. 296-305.

Jan, A. A.; Hanif, M. W. & Hafeez, S. (2022). Factors affecting the acceptance of mobile marketing: Role of ethics and permission-based marketing. City University Research Journal. 12, (1), pp. 1-10.

Jayawardhena, C., Kuckertz A., Karjaluoto H. And Kautonen T. (2009). "Antecedents to permission based mobile marketing: an initial examination". European Journal of Marketing, Vol. 43, No. 3-4, pp. 473-499.

Kaasinen, E. (2003). User needs for location-aware mobile services. Personal and Ubiquitous Computing, 7(1), 70–79. Retrieved 12 July 2018, from http://dx.doi.org/10.1007/s00779-002-0214-7.

Karjaluoto, H., Leppa¨Niemi, M., Standing, C., Kajalo, S., Merisavo, M., Virtanen, V. And Salmenkivi, S. (2006). Individual differences in the use of mobile services among Finnish consumers". International Journal of Mobile Marketing, Vol. 1, No. 2, pp. 4-10

Koksalmis, G.H., Gozudok, A. (2021). What Impacts E-Commerce Acceptance of Generation Z? A Modified Technology Acceptance Model. In: Al-Emran, M., Shaalan, K. (eds) Recent Advances in Technology Acceptance Models and Theories. Studies in Systems, Decision and Control, vol 335. Springer, Cham. https://doi.org/10.1007/978-3-030-64987-6_5.

Krum C (2010). Mobile marketing: Finding your customers no matter where they are. Indianapolis: Que.

Leppäniemi M.& Karjaluoto H. (2008). Exploring the effects of gender, age, income and employment status on consumer response to mobile advertising campaigns. Journal of Systems and Information Technology.ISSN: 1328-7265.

Luo, J.T., Mcgoldrick, P., Beatty, S. And Kathleen A. K. (2006). On-Screen Characters. Their Design and Influence On Consumer Trust. The Journal of Services Marketing. Santa Barbara, No. 20, Pp. 112-124.

Madahi, A., & Sukati, I. (2016). An empirical study of Malaysian consumers' channel-switching intention: Using theory of planned behaviour. Global Business Review, 17(3), 489–523.

Marangunić, N., Granić, (2015) A. Technology acceptance model: a literature review from 1986 to 2013. Univ Access Inf Soc 14, 81–95. https://doi.org/10.1007/s10209-014-0348-.

McCorkle D., Jurkus V., Auruskeviciene V. ,Reardon J.(2013), The Antecedent Effects Of Sms Marketing On Consumer Intentions. International Journal of Business, Marketing, and Decision Sciences. 6(1), p88-105.

Medsker, G.J., Williams, L.J. and Holahan, P.J. (1994), "A review of current practices   for evaluating causal models in organizational behavior and human resources management research", *Journal of Management*, Vol. 20, pp. 439-64.

Mobile Marketing Association (MMA) (2009). Definition of Mobile Marketing,   Mobile   Marketing   Association. http://www.mmaglobal.com/news/mma-updates-definition-mobilemarketing

Muk, A. (2007). Consumers' intentions to opt in to SMS advertising'. International Journal of Advertising, 26(2), 177–198.

Okazaki, S. (2004). How do Japanese consumers perceive wireless ads? A multivariate analysis. International Journal of Advertising, 23,429–454.

Pedersen, P. E. (2005). Adoption of Mobile Internet Services: An Exploratory Study of Mobile Commerce Early Adopters. Journal of Organizational Computing and Electronic Commerce, 15(2), 203-222.

Phuong, H. N. & An, N. T. (2017). Exploring drivers influencing consumers' attitude towards mobile marketing. Can Tho University Journal of Science. 7: pp. 148-159.

Rodgers, S., & Harris, M. A. (2003). Gender and e-commerce: An exploratory study. Journal of Advertising Research, 43, 322–329.

Robins, F. (2003). The marketing of 3G. Marketing Intelligence & Planning, 21(6), 370–378.

Samanta, S., Woods, J., & Ghanbari, M. (2009). MMS to improve mobile advertising acceptance and replace billboards. International Journal of Mobile Marketing, 4(2), 61–67.

San Martín Gutiérrez, S., López-Catalán, B., & Ramon-Jeronimo, M. A. (2012). Determinants of involvement in mobile commerce: the moderating role of gender. *EsicMarket Economic and Business Journal*, *141*, 69-101.

Shabhu KR, Nandakumar A, Nandakumar A (2016). Youngsters Attitude towards Mobile Marketing. International Journal of Industrial Engineering and Management Science 6(3).

Siau, K. and Z. Shen (2003). "Building Customer Trust in Mobile Commerce," Communications of the ACM, 46:4, pp.91-94.

Skelton, S. (2009). A survey on customers' attitudes towards mobile marketing in the UK. Retrieved on April 15, 2009 from http://www.my3q.com/research/samskelton/8083.phtml.

Statista (2023), https://www.statista.com/topics/5983/mobile-marketing-worldwide/#topicOverview.

Stewart, D. W., & Pavlou, P. A. (2002). From consumer response to active consumer: measuring the effectiveness of interactive media. Journal of the Academy of Marketing Science, 30(4), 376–396.

Sulaiman, A., Ng, J., & Mohezar, S. (2008). E-ticketing as a new way of buying tickets: Malaysian perceptions. Journal of Social Science, 17(2), 149–157.

Tsang M., Ho S. & Liang T. (2004). Consumer Attitudes Toward Mobile Advertising: An Empirical Study, International Journal of Electronic Commerce, 8:3, 65-78, DOI: 10.1080/10864415.2004.11044301

Varshney, U. (2003). Location management for mobile commerce applications in wireless Internet environment. ACM Transactions on Internet Technology, 3(3), 236–255. http://dx.doi. org/10.1145/857166.857169.

Verma, D.; Tripathi, V. & Singh, A. P. (2021). From physical to digital: what drives generation Z for mobile commerce adoption? Journal of Asia Business Studies. 15(5), pp. 732-747.

Watson C., McCarthy J., Rowley J. (2013). Consumer attitudes towards mobile marketing in the smart phone era, International Journal of Information Management, Volume 33, Issue 5,Pages 840-849. ISSN 0268-4012. https://doi.org/10.1016/j.ijinfomgt.2013.06.004.

Worku, A., Shitahun, H., Mebrate, Y., & Andaregie, A. (2020). Assessing the attitude towards mobile marketing among university students. African Journal of Marketing Management, 12(1), 1-10.

Zhang, J., & Mao, E. (2008). Understanding the acceptance of mobile SMS advertising among young Chinese consumers. Psychology & Marketing, 25(8), 787–805.

Zhang, X., Prybutok, V.R. And Strutton, D. (2007). Modeling influences impulse purchasing behaviours during online marketing transaction. Journal of Marketing Theory and Practice, No. 15, pp. 79-89.