

## **ATTITUDE TOWARD SMS ADVERTISING AND DERIVED BEHAVIORAL INTENSION, AN EMPIRICAL STUDY USING TPB (SEM METHOD)**

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*Abstract: The rapid technology developing of mobile phones and other mobile devices has created a new channel for marketing. The use of short messaging service to access customers through their handheld devices is now popular and making the mobile phone as an ultimate tool for one-to-one marketing. What seems important is the consumer attitude toward such marketing methods. Therefore, the main aim of this study is identifying attitude toward SMS advertising and derived behavioral intension among Iranian mobile users for the first time. A measurement scale was developed for measuring attitudes toward mobile advertising based on theory of planed behavior (TPB) and the results were evaluated by structural equation modeling method (SEM). The participants of the study were 246 mobile users in two cities: Shiraz and Isfahan. The results indicate that, attitude toward SMS ads can affects positively on intension and on post-behavior. But there is no relationship between intention toward SMS ads and post-behavior.*

*Key words: Consumer, Attitude, Intension, TPB, SMS advertisement, SEM*

*JEL Codes: D03, M31*

## **1. Introduction**

Beyond the traditional communication channels which include mails, catalogs and telephone contacts, in recent years, as a result of technological advances in information and communication sciences, emerged contact channels is now available (Kautonen, 2007). Today, marketers can also use multimedia channels such as emails, mobile phone messages, customized websites, addressable broadcastings, and direct-response TVs and radios. Rising in the number of contact channels has been led growth of direct marketing activities in recent years. Therefore, advertisers have focused their budgets on media that capture their markets more effectively. (Battiato et. al., 2008)

This research intended to study users' attitudes and behavioral intentions toward SMS advertisement as one of the new social media. The foundation of SMS advertising is Electronic-marketing (e-marketing) which refers to "the achievement of marketing objectives through the use of electronic communications technology" (Chaffey, 2003, p. 318). E-marketing is often applied as a tool of direct marketing, which was defined by Kotler as "Marketing through advertising media that interact directly with consumers, generally calling for the consumer to make a direct response" (Kotler et al., 2002, p. 784). Mobile marketing or wireless marketing is a subset for e-marketing which is defined by Dickinger et al. (2005) as "using a wireless medium to provide consumers with time-and-location-sensitive, personalized information that promotes goods, services and ideas, thereby benefiting all stakeholders". Mobile marketing can also be explained as "all activities required to communicate with customers through the use of mobile devices in order to promote selling of products or services and the provision of information about these products or services" (Ververidis and Polyzos, 2002).

SMS advertising is a part of mobile marketing that utilizes the SMS technology and gives marketers the chance to send one-by-one messages to consumers through their mobile devices (Zhang and Mao, 2008), so it is seen as a form of one-to-one marketing (Xu, 2006). It allows marketers to promote goods, services, and ideas through personalized, context driven and relevant messages that are sent directly to individual consumers (Sultan and Rohm, 2005; Grant and O'Donohoe, 2007; Xu, 2006; Muk and Babin, 2006).

The main purpose of this research is examining Iranian consumers' attitude and behavior toward SMS advertisements base on theory of planned behavior (TPB) which has been proposed by Ajzen (1985). Specifically, this study has considered attitude toward SMS ads, subjective norms and perceived behavioral controls as antecedents of consumer behavioral intentions which itself is predictor of consumers' behavior. Additionally, the influence of consumers' perception on consumer attitude is examined. The variables which are applied as a consumers' perception in this study include: entertainingness, Informativeness, irritability, credibility, and ability to choose favorite SMS ads and opportunity creating. It is the first time in marketing researches that attitude toward SMS ads is going to be investigated by TPB through SEM. Also, it is the first time in Iran that consumers' attitude toward SMS ads is examined. Authors try to provide theoretical and empirical proper framework for future studies and lessen this gap in marketing researches.

## **2. Theoretical framework**

### **2.1. M-commerce and M-marketing**

Since its initiation in 1994, electronic commerce has provided an area where its usability played an important role in some contexts such as influencing the design of shopping pages on the web. The introduction of web-enabled mobile devices toward the end of the 90s gave the customers this chance to do electronic shopping using a Personal Digital Assistant (PDA) or an Internet-enabled cell phone (sometimes also referred to as 'smart phone') without being limited to a desktop computer and a hard-wired Internet connection. With the advent of these alternatives and tools, Mobile



Commerce (m-commerce) was born. Shortly m-commerce can offer a number of different functions, for businesses such as online consumer shopping for goods and services (Ozok and Wei, 2010).

Mobile marketing or wireless marketing is a subset of e-marketing and is defined by Dickinger et al. (2005) as “using a wireless medium to provide consumers with time-and-location-sensitive, personalized information that promotes goods, services and ideas, thereby benefiting all stakeholders”. Mobile marketing can also be considered as, all activities required to communicate one-by-one with customers through the use of mobile devices in order to promote the selling of products or services and the provision of information about these products and services (Ververidis and Polyzos, 2002; Bamba and Barnes, 2007).

This study focused on the part of SMS advertisements of m-commerce, one of the most frequently used worldwide mobile data services. Text messaging or SMS (short message service) is one of the main tools of mobile marketing. In particular, in a context of increased SMS advertising as the part of the larger picture of mobile marketing, it is necessary to investigate consumer acceptance and response (Gauzente, 2008). Although there are good reasons for considering mobile and SMS channels as a powerful vehicle for a marketing campaign, its requirements, consumer's needs, and preferences should be considered.

The mobile messaging market is expected make up 60 per cent of all non-voice service revenues in 2013 (Mafe et. al., 2010). According to Portio research (2011), the worldwide mobile messaging market was worth USD 179.2 billion in 2010, will pass USD 200 billion in 2011, and break USD 300 billion for the first time in 2014; by end-2015 annual revenue will hit an incredible USD 334.7 billion.

Marketers intend to utilize SMS advertising because it provides several advantages such as: usefulness, perceived ease of use, cost effectiveness, ubiquity, immediacy, intrusiveness, and niche targeted (Rettie and Brum, 2001; Zhang and Mao, 2008).

With the increase usage of mobile technology in Iran, many of Iranian marketers preferred SMS as a new advertising medium, considering its advantages and disadvantages as mentioned in the following. According to Enpocket (2005a), text message campaigns also deliver a 15 per cent response rate, which their estimate is twice as much as direct mail or e-mail campaigns; apparently, text messages are 50 percent more successful at building brand awareness than TV ,and 130 per cent more than radio (Enpocket, 2005c).

Indeed, one of the significant benefits of wireless channel is its potential for detailed user information and personalization; so the message can be tailored for each customer to enable better targeting. Since, mobile phones are personal tools marketers can access directly to the person targeted and recognize their social context, individual preferences, time, and location (Bamba and Barnes, 2007).

In the other hand, SMS advertising has some limitations; although there are millions of customers to contact, the number of contact opportunities is small. For example, some mobile phone screens are not large enough to allow multiple offers to be easily visualized in a single message, and mobile phone operators restrict the number of commercial messages users can receive each day (receiving too many commercial messages a day increases the likelihood that a customer will cancel a service or switch operator due to annoyance). In addition, although mobile phone companies can send the same message to millions of different customers, only few of personalized messages can be sent on a single day because of technical limits in current mobile targeting systems. This means that one single person can only be exposed to a very small part of all possible products and services (Battiato et. al., 2008). Another problem with SMS advertising is allowance. In a competitive environment which companies fighting over the emerging market and global variation in



wireless data communications policy, the consumer is not asked for his or her permission, in many countries, before receiving SMS advertisements; such as Iran. This leads to making SMS ads irritating for most of consumers (As has been examined in this paper) (Bamba and Barnes, 2007). Studies showed that 79 percent of online consumers find receiving mobile ads through their mobile phones irritating (Muk, 2007; Klassen and Cuneo, 2007; Xu, 2006). Grant and O'Donohoe (2007) also discovered that "young adolescent consumers do dislike and resent excessive intrusive use of SMS advertising".

## **2.2. Theory of planned behavior**

Theory of planned behavior underlying the effort of TRA has been successfully proved in predicting and explaining human behavior across various information technologies (Ajzen, 2002, 1991). According to TPB, a person's actual behavior in performing certain actions can be directly influenced by his or her behavioral intention and, in turn, can be jointly determined by his or her attitude, subjective norms and perceived behavioral controls toward performing the behavior. Behavioral intention can measure the strength of one's willingness to exert effort while performing certain behaviors (Lee, 2008). Ajzen conceptualized that "Attitude (A) explains a person's favorable or unfavorable assessment regarding the behavior in question. Furthermore, a favorable or unfavorable attitude directly influences the strength of the behavior and beliefs regarding the likely outcome. Subjective norm (SN) expresses the perceived organizational or social pressure of a person who intends to perform the behavior in question. In other words, the subjective norm is relative to normative beliefs about the expectations of other people (reference group). It can be depicted as individual's normative belief (nbi) concerning a particular referent weighted by their motivation to comply with that reference. Perceived behavioral control (PBC) reflects a person's perception of the ease or difficulty of implementing the behavior in question. It concerns beliefs about the presence of control factors that may facilitate or hinder their performing for the behavior. Thus, control beliefs about resources and opportunities are the underlying determination of perceived behavioral control and can be depicted as the control beliefs (cbi) weighted by perceived power of the control factor (pi) in question" (Ajzen, 1991).

TPB has been applied in several studies investigating consumers' purchasing intention. Most of these researchers studied purchasing behaviors in purchasing standardized products. As an important fact, the role of subjective norms in determining intention cannot be denied (kim, 2011).

In SMS ads context, When people have little or no experience about the usage of mobile data services, their mobile data services usage decisions are deeply influenced by their reference groups such as peers or family members (Zhang and Mao, 2008). Social norms which relative to reference groups have been proved to play as a key role in determining mobile services usage intentions (Teo and Pok, 2003), behavioral intention to use SMS advertising (Bauer et al., 2005; Zhang and Mao, 2008) and SMS messaging acceptance (Nysveen et al., 2005b; Yan et al., 2006). Furthermore, positive social norms can reduce the perceived adoption risk of purchasing (Wang and Lie, 2006).

## **2.3. Attitude and intention toward SMS ads**

Attitudes are conventionally considered as an indicator of the effectiveness of advertising (Jun and Lee, 2007). Attitude means "a learned predisposition to respond to an object in a consistently favorable or unfavorable way" (Wilkie, 1994). It plays an important role in consumer behavior. Indeed, Attitudes cannot be observed directly because they are mental positions and marketers must try to determine them through research measures (Huang, 2004).

According to Ajzen (1985), "an individual is more likely to undertake a certain behavior if he/she has a positive attitude toward undertaking the behavior". Attitude role is used in making decisions, in understanding, and in interacting

with environment. The extent to which attitudes predict behavior is different and depends on the strength of the attitude. As Tenbült (2008) supposed people's attitudes become stronger when people are frequently exposed or are highly involved with an attitude-object, or when they have frequently expressed their attitude. Strong attitudes are highly influenced by people's inter- and intra-attitudinal structures (Tenbült et. al., 2008).

It is normally predicted that the relationship between attitude and intention can be positive. People shape intentions to perform behaviors toward which they have a positive effect (Ajzen and Fishbein, 1977; Davis et al., 1989). Numerous studies support the positive relationship between consumers' attitudes and behavioral intentions for mobile advertising (Shen and Chiou, 2009; Phau et. al., 2009).

Prior studies have examined consumer attitudes toward SMS advertising, including specific areas such as acceptance (Carroll et al., 2007), uses and gratifications (Leung, 2007; Leung and Wei, 2000), interpersonal influences (Muk, 2007), demographic effects (Okazaki, 2007; Barnes, 2002), permission uses (Bamba and Barnes, 2007), and other dimensions of SMS advertising (Shen and Chiou, 2009; Phau et. al., 2009).

Most of the empirical studies have shown that the users have negative attitudes about receiving mobile ads. This may be because they perceived mobile ads irritating although the nature of mobile phones is intimate. Their attitudes may change if advertisements are sent with permission (Tsang et. al., 2004). This implies that permission-based advertising can become a major group in the mobile environment in future. Tsang's findings showed that entertainment was the most significant factors affecting users' attitudes, followed by credibility and irritability. He also found that attitude was positively related to the intention in order to receive mobile ads and intention significantly affected how and when the respondents read the message (Tsang et. al., 2004).

Phau (2009) proved that convenience and economic reasons influence SMS usage frequency. Social involvement is also found to influence attitudes toward SMS advertising (Phau et. al., 2009). Results of a survey of 407 mobile phone users in Singapore showed that receiving SMS ads has become widespread, although the number of SMS ads received is still small. Furthermore, Wei (2010) mentioned that the instrumental and diversion motivations, prior consents, and privacy concerns directly affect the likelihood for users to pass the ads to others (Wei et. al., 2010). As Gauzente (2008) found unwilling consumers held negative attitudes toward m-advertising and felt it to be highly intrusive and more importantly felt overwhelmed by m-advertisements (Gauzente, 2008).

By reviewing previous findings, it seems that consumers' perceptions of SMS ads are rather negative all over the world, particularly in Iran. By proving negative attitude toward SMS ads, especially when unsolicited, marketers seem to be reluctant although they have some opportunities to make SMS ads more popular and attractive to most of users.

### **3. Research hypotheses and conceptual model of research**

This study adopts the following three facets of TPB model as the main framework:

(1) Attitude: it includes consumer's preference toward SMS ads. By analyzing the results of previous studies about mobile ads, entertaining, informativeness, irritability, credibility, ability to choose favorite SMS ads and opportunity creating were chosen and determined as major variables which might influence on an individual's attitude.

(2) Subjective norm: it means the influence of other people or organizations' opinions on an individual when making the decision to take action. This study uses family and friend group as reference group which can know as subjective norms factor.

(3) Perceived behavioral control: in this study, Time, place and situational factors are determined as behavioral control variables.

The conceptual model of the study is presented in figure1. As mentioned before, TPB was adopted to explain the consumers' behavioral intention toward SMS advertising. Specifically, this study considers consumer's perception as an antecedent of attitude; and perceived behavioral control, social norms and attitude as predictors of consumers' behavioral intention to receive SMS ads. In this study four consumer's perception are adopted from Tsang and at.al (2004), but two other variables of "ability to choose favorite SMS ads" and "creating opportunity" are added to the list by authors. Finally the following Hypotheses were conducted:

H 1-1: Consumers' perception about entertainingness of SMS ads affects their attitude toward SMS ads, positively.

H 1-2: Consumers' perception about informativeness of SMS ads affects their attitude toward SMS ads, positively.

H 1-3: Consumers' perception about irritability of SMS ads affects their attitude toward SMS ads, positively.

H 1-4: Consumers' perception about credibility of SMS ads affects their attitude toward SMS ads, positively.

H 1-5: Consumers' perception about ability to choose favorite SMS ads affects their attitude toward SMS ads, positively.

H 1-6: Consumers' perception about opportunity creating of SMS ads affects their attitude toward SMS ads, positively.

H 2: Subjective norms positively affect consumers' attitude toward SMS ads.

H 3: Consumers' perceived behavioral control affects their attitude toward SMS ads, positively.

H 4: Subjective norms positively affect consumers' intention to receive SMS ads

H 5: Consumers' attitudes toward SMS advertising affects their intentions to receive SMS ads, positively.

H6: Consumers' perceived behavioral control about receiving SMS ads affects their intentions to receive SMS ads, positively.

H 7: Consumers' intention to receive ads affects their post-behavior toward receiving SMS ads, positively.

H8: Consumers' attitude toward SMS ads affects their post-behavior toward receiving SMS ads, positively.



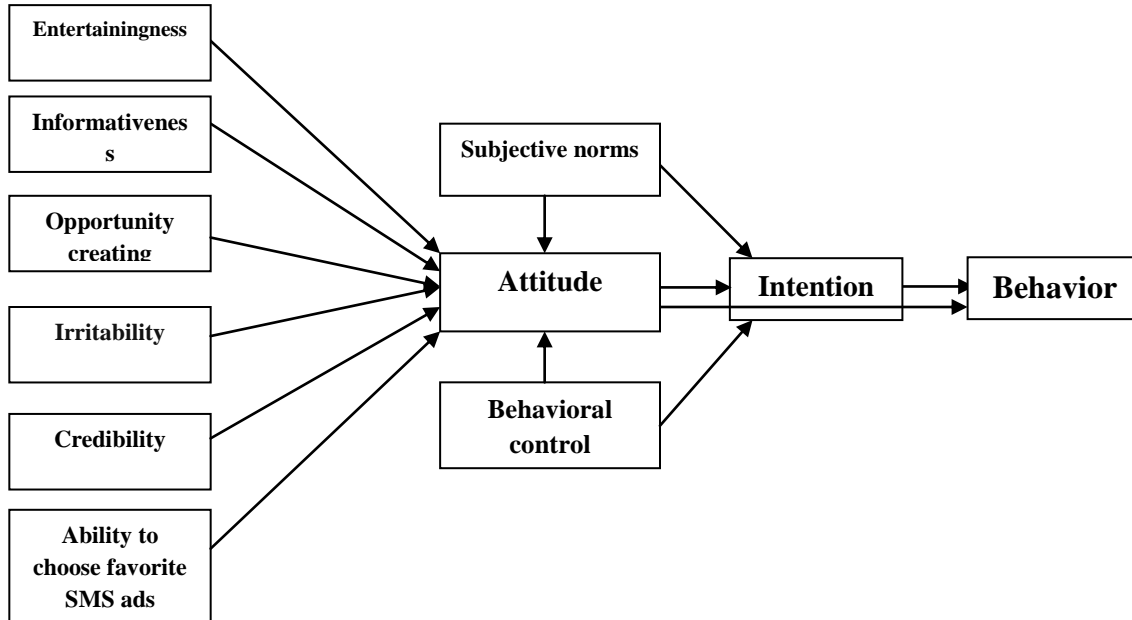


Figure 1: Conceptual model

#### 4. Research Methodology

##### 4.1. Research procedure and sampling

This study adopted structural equation model (SEM) in the data analysis. SEM includes two stages: measurement model analysis and structural model analysis. For the intended structural equation modeling (SEM), the power of the test is depended upon the number of specified parameters and sample size. For SEM, estimating power is more complicated and tedious. By considering degree of freedom and root mean square error of approximation (RMSERA), optimal sample size can be achieved. Meanwhile, one of the most important advantages of using SEM is the ability to test good fitness of model by not applying large sample size. As the results of pilot study with 30 questionnaires showed, HOELTER, the essential size of the sample was 247 but the authors preferred to consider the bigger sample size. Finally 264 out of 300 questionnaires which had distributed were usable. The questionnaires dispersed and collected in public places like parks and shop centers, randomly. Accessing large range of mobile phone users was considered. The results showed that 15-25 years old teenagers are the mainly users of mobile phone with diploma and B.A. degree as shown in table1.

Table 1: demographic data

<b>gender</b>	Female			Male	
	62%			38%	
<b>education</b>	High	Associate	Bachelor	Master	Doctoral

	school	level	level	level	level
	48%	7%	33%	10%	2%
<b>age</b>	15-25	26-35	36-45	46-55	More than 55
	51%	23%	16%	7%	3%

#### 4.2. Scale and measurement

A field survey was conducted to test the hypotheses. The survey utilized a questionnaire designed to collect data regarding consumer attitudes, intention, and behavior. This multi-item questionnaire had three major parts. The first part, adapted from the instruments used by Tsang and et.al (2004) to measure attitudes toward mobile advertising, asked about the respondents' general attitudes toward mobile advertising as measured by four major attributes: entertainingness, Informativeness, irritability, and credibility. To measure opportunity creating and ability to choose favorite SMS ads, self-administrated questionnaire was conducted. The second part included questions about familiarity with the use of mobile phones, intention to receive mobile ads, and behavior after receiving mobile ads (e.g., the amount of time between receiving and reading, whether reading ads leads to savings, or whether the responder reads the full content). The third part collected the respondent's demographic data, such as gender, age, and education. All items in the questionnaire were measured on a five – point Likert type scale anchored from "strongly disagree" (1) to "strongly agree" (5).

#### 4.3. Measurement model estimation

To assess the measurement model, exploratory factor analysis (EFA) is performed separately on each construct to confirm scale dimensionality. Then, items with factor scores of less than 0.3 are eliminated and the items retained for each construct are tested for Cronbach's  $\alpha$ . The result of the exploratory factor analysis of this study showed that all of the factor loadings of conformity and satisfaction of the scales are higher than 0.3, so no item was deleted. Therefore, 2 items of entertainingness, 2 items of informativeness, 3 items of opportunity creating, 3 items of irritability, 2 items of credibility, 1 item of ability to choose favorite SMS ads, 2 items of social norms, 1 item of attitude, 3 items of behavioral control, one item of intention ,and 2 items of behavior were remained.

Each of the measurement models assessed with Cmin/df, goodness of fit index (GFI), root mean square residual(RMR), root mean square error of approximation (RMSERA) and comparative fit index (CFI). All fit indices fall within acceptable ranges. Amos graphics.18 used to estimate all of measurement model. The results of testing the fitness of total measurement model were indicated that: Cmin/df=1.21, GFI=0.94, RMR=0.046, RMSEA= 0.04, CFI= 0.96 and P (value) =0.031.

Construct indicators show high Reliability (Cronbach's alphas range from 0.72 to 0.93), and indicate strong internal consistency. Examining construct validity, all factor loadings in the CFA for the total measurement model were statistically significant (with all t values at  $p < 0.01$ ), demonstrating convergent validity (Kumar et al., 1998). A total Cronbach's alpha was 0.81.

#### 5. Data analysis and hypotheses testing



### 5.1. Test of structural model

The fit model of researching for this study was examined by using AMOS 18.0. Researchers typically employ different indices to determine model fit. According to Brown (2006), fit indices are classified into absolute fit, parsimony fit, and comparative fit. Absolute fit indices measure how well the proposed model reproduces the observed data. The most common fit index is the model chi-square ( $\chi^2$ ) and the standardized root mean square residual (SRMR). Parsimonious indices are similar to the absolute fit indices except that it takes the model's complexity into account. An example is the root mean square error of approximation (RMSEA). Finally, the comparative fit indices are used to evaluate a model fit relative to an alternative baseline model (Harrington, 2009). Examples of comparative fit indices include the comparative fit index (CFI) and Tucker-Lewis index (TLI). In this study, all the fit indices mentioned above would be used.

The objective of conducting the structure model was designed to test the hypotheses regarding to relationship between customer values, attitude, social norms, intention and behavior. The results of testing fitness of structural model fit indicated that,  $Cmin (DF=33) = 50.582$ ,  $Cmin/df=1.533$ ,  $CFI= 0.981$ ,  $RMSEA= 0.045$ ,  $RMR=0.040$ ,  $GFI=0.967$  and  $P (value) =0.026$ . All of the goodness of fit indexes were within acceptable range and indicate that the model of the research has a good fitness. In order to test the hypotheses and casual path, the maximum likelihood method has been used.

### 5.2. Hypothesis testing

After the measurement models were analyzed separately, the conceptualized fit model of research run as a structural model to test the hypotheses regarding to relationships between attitude, intention, and behavior toward using SMS ads. The method of maximum likelihood estimation in Amos Graphics.18 software used to analyze data and hypotheses testing as shown in table 2.

Table 2: hypotheses testing

Hypothesis no.	path	Standardized Regression Weights	S.E.	C.R.	results
H1-1	entertainingness <--- Consumers' perception	.441	.065	6.785	<b>accepted</b>
H1-2	informativeness <--- Consumers' perception	0.007	.041	-0.133	<b>Rejected</b>
H1-3	irritability <--- Consumers' perception	-.225	.066	-3.426	<b>accepted</b>
H1-4	credibility <--- Consumers' perception	.321	.074	4.362	<b>accepted</b>
H1-5	ability to <--- Consumers'	-0.029	.042	-0.639	<b>Rejected</b>

Hypothesis no.	path	Standardized Regression Weights	S.E.	C.R.	results
	choose favorite SMS ads → perception				
H1-6	opportunity creating <--- Consumers' perception	.200	.076	2.631	<b>accepted</b>
H2	attitude <--- Subjective norms	.094	.042	2.251	<b>accepted</b>
H3	attitude <--- behavioral control	-.156	.045	-3.456	<b>accepted</b>
H4	intention <--- Subjective norms	-.106	.069	-1.541	<b>accepted</b>
H5	intention <--- attitude	.022	.044	.503	<b>accepted</b>
H6	intention <--- control behavior	-.103	.054	-1.899	<b>accepted</b>
H7	behavior <--- intention	-0.053	.056	-0.701	<b>Rejected</b>
H8	behavior <--- attitude	.213	.055	3.870	<b>accepted</b>

## 6. Results

The purpose of this study was first to identify antecedent of attitude toward SMS ads among mobile users in two major cities of Iran. Also, this study aimed to identify relationships between attitude, subjective norms, behavioral control, intention, and behavior toward using SMS ads.

The results show that perceived entertainingness of SMS ads affects on consumer's attitude toward SMS advertising positively. ( $\beta=0.441$ , C.R = 6.785). This result is consistent with previous researches of Tsang et al. (2004); Gao (2010); and Ducoffe (1995). Therefore, H1-1 was supported. As Chtourou (2010) revealed fun is an important antecedent of the attitude toward the act (use of mobile devices).

By modifying the model, the results show that opportunity toward creating and credibility of SMS ads has a positive effect on entertainingness.

However, the authors hypothesized that informativeness affects consumer's attitude toward SMS advertising positively, the result of study indicated that there is no significant relationship between them ( $\beta=-0.007$ , C.R = -0.133). Therefore, H1-2 was not supported. Although previous study showed that Informativeness of SMS ads affects consumer's attitude toward SMS advertising (Tsang et al., 2004), probably the contradictory result of this study is due to the type of SMS ads in Iran. As users believe SMS ads in Iran are not informative enough. In the other hand, many think that the type of information SMS extend, is not always useful because in Iran most of SMS ads are not carefully targeted. This



relationship is omitted from the initial model. But By modifying the model, the results show that credibility, entertainingness, and ability to create opportunity have influences on informativeness (Ducoffe, 1995). Information without credibility is just useless and enough credibility can cause paying attention to the information SMS extend. Ability of SMS to create opportunity is not complete without being informative.

The results show that irritability created by SMS Ads affects consumer's attitude toward SMS advertising, negatively ( $\beta=-0.225$ , C.R = -3.426). Previous studies support this result. (Tsang et al, 2004; Gao, 2010). Therefore, H1-3 was supported. By modifying the model, the results show that both entertainingness of SMS Ads and credibility have negative effects on irritability created by SMS ads. It means that more funny SMS ads are less irritating. The same as entertainment, credibility can avoid irritability. Users like to have SMS ads from a company or about a product and services which they trust on. However, M-ads are then seen as potentially irritating (Gauzente, 2008). Ducoffe (1995) stated that when ads use methods that annoy, insult, offend, or are blatantly manipulative, consumers become likely to perceive it as irritating (kelsmark, 2007).

As the authors hypothesized, credibility affects consumer's attitude toward SMS advertising, positively ( $\beta=0.321$ , C.R = 4.362). Previous studies which examined the relationship between attitude and credibility or trust (as called in some studies) showed that one of the most important factors in SMS ads is credibility or trust (Tsang et al., 2004). As Ratnasingham (1998) mentioned the consumer should be able to place completely the reliance (trust) on the confidentiality, security, integrity, and availability of information processed and stored, across every aspect of prospective. Therefore, H1-4 was supported. As the results show credibility can affect opportunity use of SMS ads. When consumers trust on SMS ads, it means that they see that SMS ads as an opportunity to inform about their trusted companies, products, or services. The less perceived credibility of SMS ads, the more risk the consumers feel. Perceived risk negatively and significantly affects consumers' attitudes (Huang, 2010; Wong, 2008). The results confirm the importance of perceived risk in mobile marketing acceptance, and support the "priming" effect of regular mobile phone usage on orienting consumers toward accepting mobile marketing initiatives (Gao, 2010).

Hypothesis 1-5 was not supported. It means that ability to choose favorite SMS ads doesn't affect consumer's attitude toward SMS ads ( $\beta=-0.029$ , C.R = -0.639). This result is not consistent with other studies. The important matter to pay attention is that there is no permitted SMS ad in Iran. This assumption was put to the research to find out the consumers' beliefs about choosing SMS ads type by themselves. As the results indicate, there is no difference between chosen and un-chosen ads for Iranian users; and chosen ads cannot improve their negative attitudes toward SMS ads. This ability can be relevant with permitted SMS ads. This relationship omitted from final model. By modifying the model, the results show that permission uses influence the control behaviors. Bamba et al. (2007) revealed that knowledge (in formativeness) and attitude toward SMS ads partially affect permission.

As the authors hypothesized, ability to create opportunity affects consumer's attitude toward SMS advertising, positively ( $\beta=0.200$ , C.R = 2.631). Other researchers showed that there is a positive relationship between motives for using SMS and attitudes toward SMS advertising. One of these motives can be creating opportunity ability (Phau et. al., 2009). Therefore, Hypothesis 1-6 was supported.

The results show that subjective norms affect Attitude toward SMS ads positively ( $\beta=0.094$ , C.R =2.251). Previous studies supported the result (Sztompka, 1999; Bauer et al., 2005); Therefore, H2 was supported, but not strongly in this study. By modifying the model, the results show that irritability caused by SMS ads affect subjective norms negatively. This is based on the experiences that friends, family members, colleagues or other acquaintances like reference

group in the customer's social network have had with the SMS ads, which they pass on to the customer in form of recommendations and narratives (Jayawardhena et. al., 2009).

As the results indicate Consumers' perceived behavioral control affects their attitude toward SMS ads, negatively ( $\beta=-1.56$ , C.R =-3.456). Therefore, H3 was supported. By modifying the model, subjective norms affect control behavior negatively. Trust and behavioral control are commonly argued to be the mechanism to cope with risk. The substitution logic predicts that if more than one of these mechanisms is available, less of the other is required for the transaction to take place (Woolthuis, 2002). Thus in the mobile context, the higher the perceived control, the less trust is required to permit mobile marketing (Jayawardhena et al., 2009)

The results show that subjective norms affect consumers' intention to receive SMS ads, negatively. ( $\beta=-0.106$ , C.R =-1.541). Armitage (2001) and Tsang et al (2004) also had mentioned this relation. Therefore, H4 was not supported.

Otherwise, the results show that attitudes toward SMS advertising do not affect consumers' intentions to receive SMS ads, strongly ( $\beta=0.022$ , C.R = 0.503). Previous researches showed that attitude is a good predictor of intention. (Kraft, 2005; Tsang et al,2004). Some studies showed attitude toward mobile advertising significantly predicted the intention to adopt mobile advertising (Soroa-Koury, 2010; Armitage, 2001; Wong, 2008). H5 was supported, but not strongly. It was predicted that Positive attitude toward SMS ads can cause increasing intention to receive SMS ads. But maybe because of negative attitudes of this collective society, their relationships are not strong. To increase intention of receiving such ads, marketers should try to change negative or poor attitude toward SMS ads.

As the authors hypothesized, Perceived behavioral control affects consumer intentions to receive SMS ads negatively ( $\beta=-0.103$ , C.R =-1.899). H6 was supported. Other researches proved it, too (Armitage, 2001).

However, the authors hypothesized that consumers' intentions to receive SMS ads affect their behavior after receiving SMS ads; but in present study no significant relationship is found between them. ( $\beta=-0.053$ , C.R = -0.701) and H7 was not supported, although previous researches showed that intention was a good predictor of behavior (Armitage, 2001; Wong, 2008). The results of the study mention that an intention with any strength is not enough to cause a steady and predictable behavior toward adapting SMS ads.

Attitude toward SMS ads affects consumer behavior after receiving SMS ads, positively. So, H8 was supported ( $\beta=0.213$ , C.R = 3.870). This finding is supported by previous studies (Tsang et al, 2004; Armitage, 2001). Positive attitude can cause proper behavior toward receiving SMS ads. By improving attitude, marketers can expect a proper post-behavior from audiences when receiving SMS ads. After modifying the model, the results show that for an SMS ads being informative, effects on consumer behavior after receiving the ads.

The final modified model is shown in figure 2.

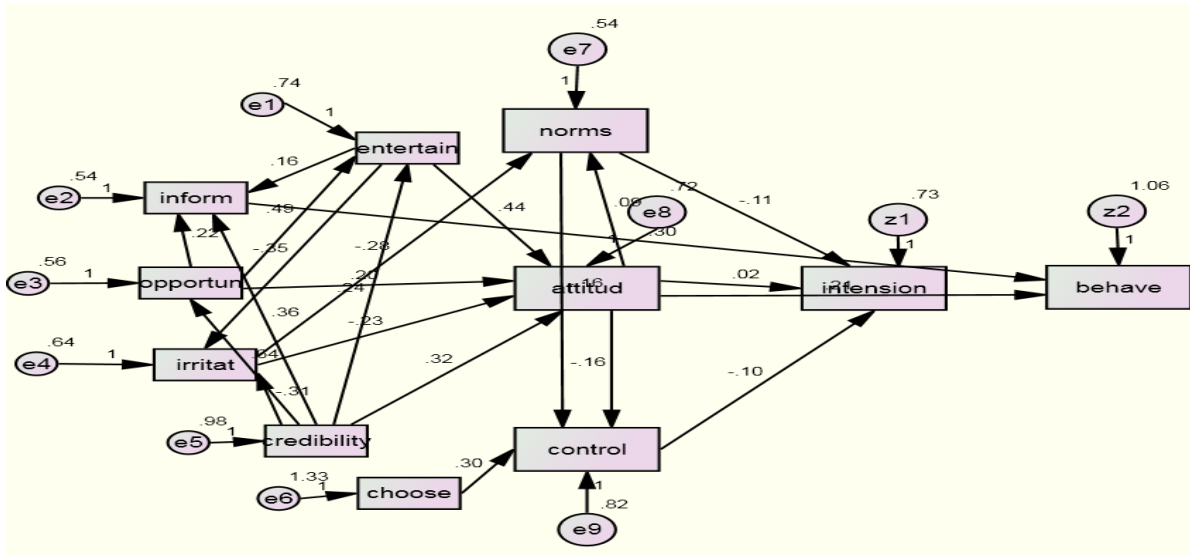


Figure2: modified model

## 7. Discussion, Implications and Limitation

In particular, SMS advertising is the new part of the larger picture of mobile marketing, and it is necessary to investigate consumers' acceptance and response. Although there are good reasons for considering mobile and SMS channels as a powerful method for a marketing campaign, its requirements and consumer's need and preference should be considered.

Even though there are some studies, which has examined the relation of attitude, intention, and behavior, but the number of studies which focused on consumer's attitude and intention toward SMS ads is seems to be limited specially using TPB model, and also considering Iranians users as a case study.

For the first time in Iran, this study considered consumer's perception as an antecedent of attitude toward SMS ads; and perceived behavioral control, social norms and attitudes as predictors of consumers' behavioral intention to receive SMS ads; and intention as a predictor of post-behavior.

In a collective society such as Iran, implementing SMS ads is known as a new channel of advertising and marketing. Many companies tend to use or have used it, but the results are disappointing. The results indicate that Iranians' attitudes toward SMS ads are strongly negative and these attitudes affect Consumers' intentions to receive SMS ads, poorly. In the other hand, Consumers' intentions to receive ads don't have effects on their post-behavior toward receiving SMS ads. But, Consumers' attitudes toward SMS ads affect their post-behavior toward receiving SMS ads, positively. It seems that it is a good issue for the future studies to examine causes of this negative attitude and intention toward SMS ads among Iranians.

The negative attitude toward SMS ads, especially when unsolicited, mentioned marketers have a lot of work to do to make SMS ads more popular and attractive to every consumer especially young groups.

To improve this attitude, marketers should avoid demanding for information that consumers are not willing to provide in order to avoid a negative attitude or raise consumers' suspicion. To be more attractive, marketers must adapt their ads to individual use of text messaging and to areas of interest. Companies that launch an opt-in SMS advertising campaign should register with specialized SMS information services to reach the maximum number of consumers. These companies can act as filter for unsolicited SMS ads to avoid irritating users.

By design, the study is limited in its scope. The same study can be done by companies that launch SMS advertising, which have access to both advertised companies and consumers. Further, the variables omitted from this study and the relationships which provide in modified model are clear candidates for future investigations.

One of the limitations of this study was lack of enough related literary items about SMS ads. Another limitation was verifying the best method to choose sample group and determining sample size. In Iran, there are no permitted SMS ads, so we could not examine the effect of permitted/not permitted SMS ads on attitudes. Mobile marketing -and as particular, SMS advertising- is in new initiated way and needs more academic and empirical researches.

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