

## Why Should I Accept Ads on my Mobile Phone? Factors Affecting the Acceptance by Brazilian Teenagers

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### ABSTRACT

Among the more than six billion cellular phone lines in the world, around 220 million are found in Brazil. These numbers draw the attention of companies and academics, seeking to understand how cell phones can be used as an advertising media. This study sought to discover factors that could affect the intention of Brazilian teenagers to accept advertisements via SMS messages. A survey was conducted on a sample of 385 students of a high school in Rio de Janeiro. The results of an analysis via structural equations suggest that attitude toward mobile advertising, perceived utility of the message and social norms are the factors with greater impact on the likelihood of teenagers to accept advertisements via SMS.

**Keywords:** Mobile devices. Advertising. Direct marketing. Mobile marketing. Technology acceptance.

### 1 INTRODUCTION

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In 2020, the world will have over 55 million mobile devices in operation, opening up huge possibilities and allowing new types of applications for their users. Mobile technologies can be used for tasks besides communication - they can allow consumers to acquire products and services, when they want and where they are (COURSARIS; SUNG; SWIERENGA, 2010). These features, stemming from technological development, have attracted the attention of companies to mobile marketing: the application of marketing strategies that use mobile devices as mediums for communication and transactions (YANG, 2007).

Cell phones with larger screens, PDAs and tablets are examples of devices that have become components in a new kind of convergent and interactive media that also allows consumers to receive promotional messages (YANG, 2007). In the United States, where more than 90% of the population has some type of mobile device (SIQUEIRA, 2011), more than \$320 million was spent in 2011 on advertisements and promotions via SMS (short message services). This value is projected to rise to \$1.5 billion in 2013 (GIORDANO, 2010).

While some companies have treated SMS promotional messages with caution, given the lack of knowledge about it and the possibility that consumers might not accept the practice (DICKINGER; KLEIJNEN, 2008), the potential mobile devices have as an advertising media has been perceived and explored in various countries.

Some motivations for companies to migrate towards mobile platforms are the possibilities the technology offers for establishing a relatively more personal and interactive communication with their customers (BAUER *et al.*, 2005; SULTAN; ROHM; GAO, 2009) and create strategies that are specific to the location of a consumer within a context of consumption (SULTAN; ROHM; GAO, 2009). In Brazil, the practice is still incipient: in general, only cell phone companies habitually use their clients' telephones as a platform for the promotion of products and services.

In fact, to be successful, marketers will have to focus on customers who are the most receptive to mobile advertising initiatives (SHANKAR; BALASUBRAMANIAN, 2009). However, despite the size of the market, there aren't sufficient academic studies about initiatives related to mobile marketing (HENNIG-THURAU *et al.*, 2010; SCHARI; DICKINGER; MURPHY, 2005; VARNALI; TOKER, 2010) and factors that might lead consumers to desire (or reject) receiving promotional communications on their mobile devices.

Sultan, Rohm and Gao (2009) and Trabelsi and Rached (2010) suggest that some specific consumer segments might be more prone and willing to receive and act upon mobile advertisements. Due to their high level of usage of cell phones as devices for communicating with their social circles and receiving information, teenagers might be a particularly interesting segment for mobile marketing actions.

The use of mobile devices by youths for communicating and accessing information services is globally widespread (SULTAN; ROHM; GAO, 2009). This is also a fact in Brazil, especially for individuals in higher-income strata. For younger consumers, cell phones represent more than simply a communication device: they are a way to express their individuality via personalized screen images and ringtones. By using mobile devices, youths feel empowered and have broad access to larger social circles, diverse information, and a wide range of digital content, including entertainment (SULTAN; ROHM; GAO, 2009).

Whereas the majority of studies on mobile marketing/advertising have been conducted in developed countries, developing economies (including Brazil) show fastest growth in mobile usage (SHANKAR; BALASUBRAMANIAN, 2009). Furthermore, there isn't much information concerning how young consumers from different parts of the world accept mobile advertising (VARNALI; TOKER, 2010; SULTAN; ROHM; GAO, 2009; ZHANG; MAO, 2008). Therefore, this study intends to fill in some knowledge gaps on the subject, seeking to identify factors that impact on the intention of upper-class, teenage Brazilian cell phone users to accept advertisements via SMS.

## **2 MOBILE MARKETING AND MOBILE ADVERTISING**

The definition of what constitutes **mobile marketing** is controversial (VARNALI; TOKER, 2010). Kotler and Keller (2006) consider it as marketing efforts that use mobile devices, primarily cell phones, generally to promote the construction of a strong connection between companies and clients. Sultan, Rohm, and Gao (2009) see it as the use of wireless mobile devices as a platform for the direct delivery of content, as well as a response channel in marketing communication programs.

Markus, Sebastian, and Kevin (2009) argue that mobile marketing doesn't have a formal definition, but consider it to be the design, implementation and control of marketing activities by using wireless data transfer technologies for mobile devices. Roach (2009) defines mobile phone marketing as the use of cell phones to provide customers, depending on their location and time, with personalized information that promotes goods, services, and ideas.

Some authors even suggest that, since it is a new form of direct communication between companies and their consumers, it should be treated as a new form of direct marketing (TSANG; HO; LIANG, 2004; ROACH, 2009). Recently, Shankar and Balasubramanian (2009) proposed that mobile marketing is “the two-way or multi-way communication and promotion of an offer between a firm and its customers using a mobile medium, device or technology” (p. 118).

## 2.1 MOBILE ADVERTISING

Notwithstanding the different views on what constitutes mobile marketing, there are also different interpretations about what is mobile advertising. The most straightforward one is offered by Venkatesh et al. (2010), who understand it as the use of mobile medium by retailers to advertise their image and products.

Some authors define mobile advertising as using mobile media to provide consumers, depending on their location and time, personalized information that promotes goods, services and ideas, thus bringing benefits to stakeholders (DICKINGER; KLEIJNEN, 2008; SCHARL; DICKINGER; MURPHY, 2005).

Zhang and Mao (2008) establish mobile advertising as the “use of wireless devices to deliver content and as a form of direct communication with consumers, within a marketing strategy that can involve various media” (p. 788). This shows an overlap and confusion between the concepts of mobile marketing and mobile advertising.

In a sense, mobile advertising is the use of SMS messages as a channel for promotions and advertisements (TSANG; HO; LIANG, 2004; YANG, 2007). Expanding upon this, He and Lu (2007) defined mobile advertising as a new form of marketing, based upon mobile devices, especially SMS messages (SMS advertising), that offers direct communication with consumers anywhere, anytime.

Given the lack of consensus regarding what exactly constitutes mobile advertising (LEPPÄNIEMI; KARJALUOTO, 2005), this study adopts the definition given by He and Lu (2007) in assuming that mobile advertising means the sending of promotional messages to consumers via use of SMS messages.

Mobile media is interactive, allowing two-way communication. Possible uses for mobile marketing include advertisements, promotions, post-sale services, customer support and other forms of relationship-building actions. However, some barriers to its adoption as a marketing tool were identified. The reduced size of the screen and keyboards make interface

uncomfortable for some users, especially the elderly, which limits the target public, the size of the messages and the frequency of transmission of such campaigns (SHANKAR; VENKATESH; BALASUBRAMANIAN, 2009; SHANKAR *et al.*, 2010).

Furthermore, the intrusive nature of advertisements via mobile devices (SHANKAR *et al.*, 2010; SULTAN; ROHM; GAO, 2009) makes many users feel as if marketers are invading their privacy whenever they receive unauthorized messages (LEPPÄNIEMI; KARJALUOTO, 2005) or are unable to opt-out from receiving them (SHANKAR *et al.*, 2010).

### **3 CONSUMER ACCEPTANCE OF MOBILE ADVERTISING**

The theories more frequently found in studies on mobile marketing and advertising are (HUANG; SYMONDS, 2009; SHANKAR; BALASUBRAMANIAN, 2009; VARNALI; TOKER, 2010):

- Theory of Reasoned Action (FISHBEIN; AJZEN, 1975);
- Innovation Diffusion Theory (ROGERS, 2003);
- Theory of Planned Behavior (AJZEN, 2001);
- TAM – Technology Acceptance Model (DAVIS, 1989);
- TAM2 – extension of TAM (VENKATESH; DAVIS, 2000);
- UTAUT – Unified Theory of Acceptance and Use of Technology (VENKATESH *et al.*, 2003).

Although the technology acceptance model has been applied originally to the IT environment, Varnali and Toker (2010) and Shankar and Balasubramanian (2009) consider it adequate to explain the acceptance of technologies related to mobile marketing, mobile advertising and SMS advertising. Actually, various studies have successfully employed such models (SULTAN; ROHM; GAO, 2009; DICKINGER; KLEINJEN, 2008; WU; WANG, 2005; TSANG; HO; LIANG, 2004; BRUNER; KUMAR, 2003), with some of them focusing on young cell phone users (ZHANG; MAO, 2008; YANG, 2007).

Based on Fishbein and Ajzen's (1975) Theory of Reasoned Action, Bauer *et al.* (2005) developed a model that contemplates subjective norms, consumer's attitude, innovativeness, information-seeking profiles and previous knowledge, as well as utility and risk perceived by the consumer, as precursors to the intention to accept SMS advertising initiatives. The Uses and Gratifications Theory is also considered by Bauer *et al.* (2005) and Sultan, Rohm and Gao (2009), who consider that utilitarian and hedonic reasons underlie the acceptance of mobile advertisement by cell phone users.

Zhang and Mao (2008) examined determining factors for accepting SMS promotional messages by Chinese consumers and discovered evidences that subjective norms (social influence) both precede and positively contribute towards the intention to adopt SMS ads.

Some constructs, found in several of those studies, are briefly presented hereafter, as we propose the use of an extended model, based on the TAM (DAVIS, 1989), to evaluate the intention of Brazilian teenagers to adopt mobile advertising.

### 3.1 INNOVATIVENESS

Innovativeness is the degree to which a consumer is relatively earlier in adopting new ideas than others of her (his) social group (ROGERS, 1995). Hartman and Samra (2008) proposed that it is congruent with Schwartz's (1992) openness-to-change values.

Each individual has a specific tendency to accept or reject innovation. Innovativeness has two aspects, innate and actual. The first is linked to personality, while the second is related to a specific kind of innovation (BAUER *et al.*, 2005).

Hartman and Samra (2008) studied the impact of personal values and innovativeness on Web usage among American teenagers. They found that the contemplation and/or adoption of leading-edge products and services provide newness, variety and excitement. They also found a significant impact of innovativeness on Web-consumption and propose that teenagers who are more innovative are also enthusiastic vicarious learners.

The innate aspect of innovativeness is the one relevant for this study, in that consumers with a high degree of innovativeness are more likely to try out new products and ideas (BAUER *et al.*, 2005). Since individuals with a highly innovative profile should have greater knowledge about mobile communication technologies, they should also be more inclined to accept and learn about mobile and cellular communication services (PETER; OLSON, 2009), it seems reasonable to suppose that:

**H1:** Innovativeness will have a direct and positive effect on teenagers' existing knowledge regarding mobile advertising.

### 3.2 PERCEIVED UTILITY

Consumers will accept promotional messages via SMS only if they perceive some benefit in doing it (KAVASSALIS *et al.*, 2003). During the decision process, in addition to dealing with the perception of the advertisement in relation to other activities, the consumer also evaluates it in relation to other sources of information. Thus, time becomes an important restriction to promotional use of SMS (BAUER *et al.*, 2005).

In a study about drivers for consumer acceptance in receiving SMS promotional messages, Merisavo *et al.* (2007) indicate that information context and message utility are the strongest factors. Various studies, some conducted on young students, indicate a positive influence from the entertainment characteristics (hedonic) and information utility of messages, with the first dimension identified as being preponderant (TSANG; HO; LIANG, 2004; YANG, 2007; ZHANG; MAO, 2008).

The study conducted by Coursaris, Sung and Swierenga (2010) into the effects of promotional message characteristics sent via SMS on an American university students' perceptions confirmed the positive effect of message size in the utilitarian value and perceived entertainment. Utilitarian value influences attitude as much as intention to use mobile advertising. Thus, it is reasonable to propose that:

**H2:** Perceived utility will have a direct and positive effect on teenagers' attitude toward mobile advertising.

### 3.3 ATTITUDE TOWARD ADVERTISING IN GENERAL

In general, consumers are familiar with advertisements, since they are exposed to them daily. Then, it is expected that they will have a relatively stable and consistent attitude towards advertising (BAUER *et al.*, 2005).

Not many consumers have been exposed to mobile advertising. This leads to the assumption that their attitudes in relation to advertising via SMS are less stable and easily altered. Having more contact with promotional advertisements consequently leads to a greater propensity for accepting advertising via SMS (BAUER *et al.*, 2005).

Attitude toward advertising studies indicate distrust of advertising and strong customer inclination to avoid them (KELLY; KERR; DRENNAN, 2010). The Internet, however, has been considered a more credible source of information than traditional vehicles, such as television, in special by younger people (KELLY; KERR; DRENNAN, 2010).

Today, teenagers communicate mostly via their cell phones, and use SMS a lot, reflecting a culture to keep in touch with their social group that is part of their lifestyle, (TRABELSI; RACHED, 2010). Since mobile advertising is a type of marketing (SCHARL; DICKINGER; MURPHY, 2005), consumers' attitudes toward SMS advertising can be viewed as related to their attitude regarding advertisements in general, not just those delivered on mobile devices (BAUER *ET AL.*, 2005). It is then possible to propose that:

**H3:** Attitude toward advertising in general will have a direct effect on teenagers' attitude toward mobile advertising.

### 3.4 SOCIAL NORMS

Social norms are the result of a person's beliefs associated with a certain behavior. The adoption of such behavior depends on (a) whether or not it will be accepted by important reference peers, (b) on personal motivation to comply with those references, and (c) on a personal evaluation of the consequences of the behavior (AJZEN; FISHBEIN, 1980). Shimp and Kavas (1984) identified a causal relationship between the subjective perception of social norms and attitude towards a behavior. Bauer *et al.* (2005) indicate that the attitude towards mobile marketing is strongly influenced by social norms.

Mobile phones represent more than a simple communication device. For teenagers SMS is a means of fashionable communication, reflecting a youth culture and it is an integral part of their lifestyle (TRABELSI; RACHED, 2010). In two studies involving acceptance of mobile advertising by young consumers, in China and Taiwan (YANG, 2007; ZHANG; MAO, 2008), social norms show a significant influence on their attitude toward and on their intention to accept SMS advertising.

Direct effects of social norms are then expected to be reflected in a Brazilian young consumer's attitude toward mobile advertising and their behavioral intention to adopt it. Then, it seems reasonable to propose that:

**H4:** Social norms concerning the adoption of mobile marketing will have a direct effect on teenagers' attitude toward mobile advertising.

**H5:** Social norms concerning the adoption of mobile marketing will have a direct effect on teenagers' intention to accept mobile advertising.

### 3.5 EXISTING KNOWLEDGE

Existing knowledge affects the cognitive decision-making process for accepting a specific, innovative product or action. It gives an individual the ability to understand the functioning, resources and uses of an innovation, reducing its perceived complexity (BAUER *et al.*, 2005). Existing knowledge regarding the use of cell phones is a facilitator in the adoption of mobile advertising, since it reduces the perceived complexity (ROGERS, 2003) of using this media to receive and interact with promotional messages (BAUER *et al.*, 2005; ZHANG; MAO, 2008). Teenagers, with their greater levels of knowledge about mobile



communications, can, therefore, be expected to present more positive attitudes towards mobile advertising.

**H6:** Existing knowledge about mobile communications will have a direct and positive effect on teenagers' attitude toward mobile advertising.

### 3.6 ATTITUDE TOWARD MOBILE ADVERTISING

As the commercial use of SMS advertising is still in its initial stages, it is hard to measure its acceptance and use. Bauer *et al.* (2005) propose that acceptance of SMS advertising can be anticipated by measuring consumer attitude in relation to its adoption. The last hypothesis can thus be formulated as:

**H7:** The more positive a teenager's attitude toward mobile advertising, the greater his/her behavioral intention to adopt it.

None of the theoretical dimensions of perceived risk (physical, performing, psychosocial, financial and temporal) seems to be present in the consumer's exposition to SMS advertising. Therefore, variables related to perceived risk, considered in some proposed models found in the literature (WU; WANG, 2005; BAUER *et al.*, 2005; SULTAN; ROHM; GAO, 2009), were not included in the model here proposed.

The constructs and their effects, both direct and mediated, on the attitude and behavioral intention towards mobile advertising adoption, as well as the hypotheses to be tested, are presented in the model depicted on Figure 1.

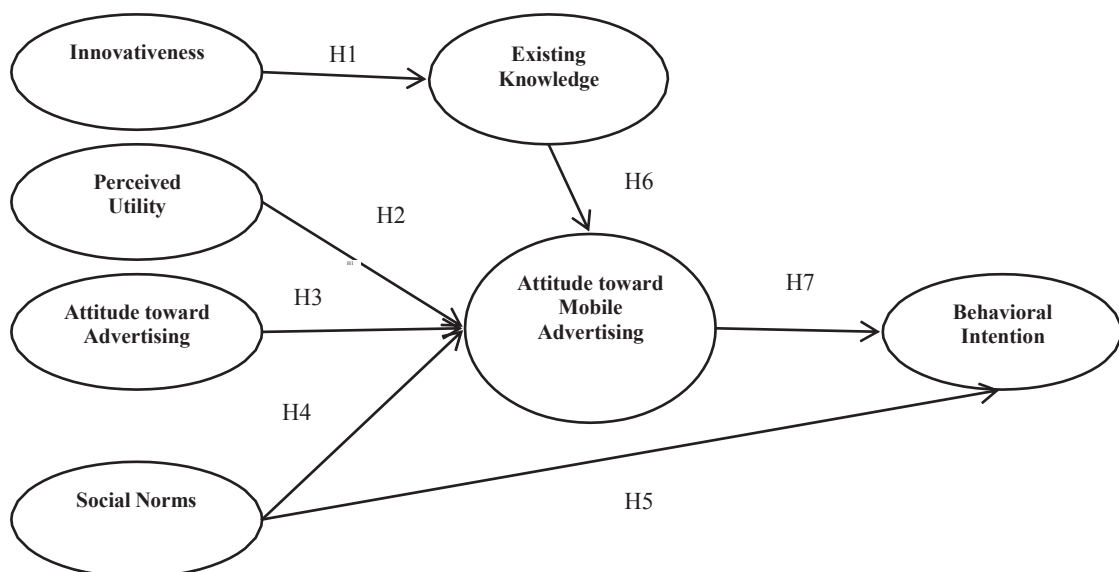


Figure 1 - Model for teenagers' acceptance of mobile advertising

## 4 METHOD

A cross-sectional survey was conducted on a sample of high school students from a school in Rio de Janeiro. The majority of studies on consumer acceptance of technology uses this same method, administering structured questionnaires to consumers (CHILDERS *et al.*, 2001; YOUSAFZAI; FOXALL; PALLISTER, 2007).

#### 4.1 QUESTIONNAIRE DESIGN

All the evaluated constructs on the proposed model were measured using scales that had already been developed and tested in extant literature. The following scales were employed:

- Innovativeness – Bauer *et al.* (2005), 3 items;
- Perceived Utility – Bauer *et al.* (2005), 4 items;
- Attitude towards Advertising - Pollay and Mittal (1993), 3 items;
- Social Norms - Shimp and Kavas (1984), 3 items;
- Existing Knowledge - Flynn and Goldsmith (1999), 5 items;
- Attitude towards Mobile Marketing - Shimp and Kavas (1984), 4 items;
- Behavioral Intention - Shimp and Kavas (1984), 3 items.

A native English speaker also fluent in Portuguese translated the scales to Portuguese, and then another native English speaker, who was also a Portuguese teacher, back-translated them to English. Finally, a third language professional, who teaches both English and Portuguese, compared both versions to guarantee that the original meanings were preserved in the Portuguese version.

In order to verify that the language was adequate to the chosen population, the questionnaire was pre-tested with five teenager students to check for their understanding of what was being asked. In addition, while Bauer *et al.* (2005) used a 7-point Likert scale, a 5-point scale was chosen to make it easier for teenagers to answer the research instrument.

The construction of the online questionnaire required the employment of various safeguards. Its development was in accordance to the programming techniques recommended by W3C (organization of best-practices in web programming), so that there wouldn't be any rejection or distortions caused by the use of different web browsers and guaranteeing that its appearance would be preserved, independent of screen size and resolution (DILLMAN; TORTORA; BOWKER, 1998).

Questions were equally distributed over three screens, with ten questions on each to avoid the need for scrolling. The first screen contained a welcome message, introducing the questionnaire and emphasizing the ease of filling it out. When continuing to the second

screen, the first page of the questionnaire was shown in its entirety, without scrolling bars. Its visual presentation was professional, pleasant and similar to what a paper version would look like (DILLMAN; TORTORA; BOWKER, 1998).

Response options, in Likert scale, used simple HTML tables, with a fixed screen width for each button in order to guarantee that the respondents perceived the alternatives as equally spaced (DILLMAN; TORTORA; BOWKER, 1998; HEERWEGH; LOOSVELDT, 2002).

Fifty three teenager students pretested the first version of the online questionnaire. Factor analysis indicated that some questions needed to be rewritten, since they were loaded in more than one factor. The language used in the questionnaire was also checked for adequacy, and after minor adjustments a final version of the online questionnaire was readied

#### 4.2 SAMPLE AND DATA COLLECTION

The population was composed of teenage cell phone-users in Rio de Janeiro, Brazil. A total of a thousand randomly selected students from a single high-school were contacted via SMS messaging and received invitations to participate in the research. Students could participate in the study by clicking on a banner in the school's restricted area on the internet, only accessible through the use of their individual passwords.

The contacted individuals were selected from a list containing all the high-school's senior (last year) students, a homogeneous group of teenagers (18 years old in average). This was done in order to address one of the limitations pointed out by Bauer et al. (2005) in their study, where the respondents' broad age span could have caused bias in the results.

Despite the fact that a total of 1,000 students were invited via SMS to participate in the research, 409 questionnaires were completed (response rate of 40.9%). One questionnaire was discarded because the respondent didn't own a cell phone and 23 others were incomplete (with missing values) and therefore not considered for analysis, resulting in a final sample of 385 individuals. The average age of respondents was 18 years old (standard deviation of 1.86) and 66% were female.

### 5 RESULTS

The model evaluation was conducted with the use of AMOS, using the Maximum Likelihood method to estimate the parameters. Initially, a confirmatory factor analysis (CFA) was conducted to test the validity, unidimensionality and reliability of the scales (FORNELL; LARCKER, 1981; GARVER; MENTZER, 1999). The measurement model presented satisfactory fit indices (RMSEA = 0.04, C.I. of 0.03 to 0.05; CFI = 0.97; IFI = 0.97; TLI =

0.96;  $\chi^2 = 295.24$ , d.f. = 161,  $p < 0.001$ ,  $\chi^2/\text{d.f.} = 1.83$ ). The composite reliabilities and variance extracted measures for all constructs and scales are displayed in Table 1.

**Table 1 - Construct Reliability Analysis**

Construct	Composite Reliability	Variance Extracted
Innovativeness	0.79	0.57
Perceived Utility	0.82	0.51
Attitude toward Advertising	0.81	0.69
Social Norms	0.85	0.68
Existing Knowledge	0.86	0.67
Attitude toward Mobile Advertising	0.87	0.77
Behavioural Intention	0.84	0.64

The nomological validity (analysis of the correlation matrix between constructs - Table 2), convergent validity (calculation of Average Variance Extracted for each construct - Table 1), discriminant validity (comparison of the average variance extracted for each construct with shared variance between all pairs of constructs - Table 2) and internal consistency, unidimensionality and reliability of the scales (analysis of alpha coefficients, composite reliability - Table 1, and estimated factor loadings) were tested with satisfactory results, indicating the reliability of the scales.

**Table 2 - Correlation and Discriminant Matrix**

	Innova- tiveness	Perceived Utility	Attitude toward Advertising	Social Norms	Existing Knowledge	Attitude toward Mobile Advertising	Behavioral Intention
<b>Innovativeness</b>	<b>0,57</b>	0,23	0,21	0,14	0,68	0,16	0,13
<b>Perceived Utility</b>	0,05	<b>0,51</b>	0,41	0,61	0,12	0,71	0,69
<b>Attitude toward Advertising</b>	0,04	0,17	<b>0,69</b>	0,28	0,15	0,41	0,41
<b>Social Norms</b>	0,02	0,37	0,08	<b>0,68</b>	0,07	0,78	0,58
<b>Existing Knowledge</b>	0,46	0,01	0,02	0,00	<b>0,67</b>	0,14	0,15
<b>Attitude toward Mobile Advertising</b>	0,03	0,50	0,17	0,61	0,02	<b>0,77</b>	0,79
<b>Behavioural Intention</b>	0,02	0,48	0,17	0,34	0,02	0,62	<b>0,64</b>

Note: Correlations are above the main diagonal, Squared Correlations are below.

## 5.1 STRUCTURAL MODEL

Model and hypotheses testing employed structural equations modeling (SEM). In which the significance of the estimated coefficients for the hypothesized relationships indicated whether the relationship between constructs held true or not (BYRNE, 2010).

All indices of the structural model indicated good fit to the data. The ratio  $\chi^2/df$  was 2.9, under the limit (3.0) suggested by Byrne (2010). Moreover, the incremental fit indexes were above 0.90 (CFI = 0.92, TLI = 0.91, IFI = 0.92). The absolute fit indexes were below the 0.08 cutoff established in the literature (HU; BENTLER, 1999; BYRNE, 2010; HAIR *ET AL.*, 2009), also indicating a good fit (RMSEA = 0.073, C.I. 0.034 to 0.041, SRMR = 0.076).

The proposed model presented an adequate fit to data. Furthermore, the model explained 83% of the variance in the attitude towards mobile advertising and 63% of the variance in behavioral intention, lending strength to the belief that the evaluated constructs were suitable to characterize the studied phenomenon.

Verification of each hypothesis was performed by the analysis of magnitude, sign and significance of the standardized path coefficients estimated in the structural model (BYRNE, 2010). The hypotheses, the estimated coefficients and significance levels are shown in Table 3 and illustrated in Figure 2.

**Table 3 - Hypotheses, Standardized Path Coefficients and Significances**

<b>Path</b>	<b>Standardized Coefficient</b>	<b>p-value</b>	<b>Hypothesis Accepted</b>
<b>H<sub>1</sub>: Innovativeness → Existing Knowledge</b>	0.68	<0.001	yes
<b>H<sub>2</sub>: Perceived Utility → Attitude toward Mobile Advertising</b>	0.78	<0.001	yes
<b>H<sub>3</sub>: Attitude toward Advertising → Attitude toward Mobile Advertising</b>	0.09	0.013	yes
<b>H<sub>4</sub>: Social Norms → Attitude toward Mobile Advertising</b>	0.47	<0.001	yes
<b>H<sub>5</sub>: Social Norms → Behavioural Intention</b>	0.16	<0.001	yes
<b>H<sub>6</sub>: Existing Knowledge → Attitude toward Mobile Advertising</b>	0.03	0.446	no
<b>H<sub>7</sub>: Attitude toward Mobile Advertising → Behavioural Intention</b>	0.86	<0.001	yes

## 6 DISCUSSION

Perceived utility was found to be the most important antecedent to the attitude of Brazilian teenagers toward SMS mobile advertising (standardized coefficient = 0.78), a result consistent with findings related to young mobile phone users in Germany (BAUER *et al.*, 2005), China (ZHANG; MAO, 2008) and Taiwan (WU; WANG, 2005).

Perceived utility is directly related to users subjective evaluations of the utility offered by promotional messages sent via SMS. This suggests that offering clear benefits and interesting information (not only utilitarian, but also hedonic content, as pointed out by TSANG; HO, LIANG, 2004) in the advertisement plays a key role in determining whether or not teenagers will devote their attention to delivered messages (SULTAN; ROHM; GAO, 2009) and, more importantly, if they will develop favorable attitudes towards mobile advertising. The importance of offering advertisement with relevant information and in an attractive format was also highlighted by Leppäniemi and Karjaluoto (2005). This favorable attitude, in turn, might lead to a behavioral intention to adopt and use mobile media as a way to receive promotional messages and advertisements, as evidenced by the strong significant direct effect of attitude on intention (0.86). This was also shown by Yang's (2007) and can be understood as a predictor of intention of use (BAUER *et al.* 2005).

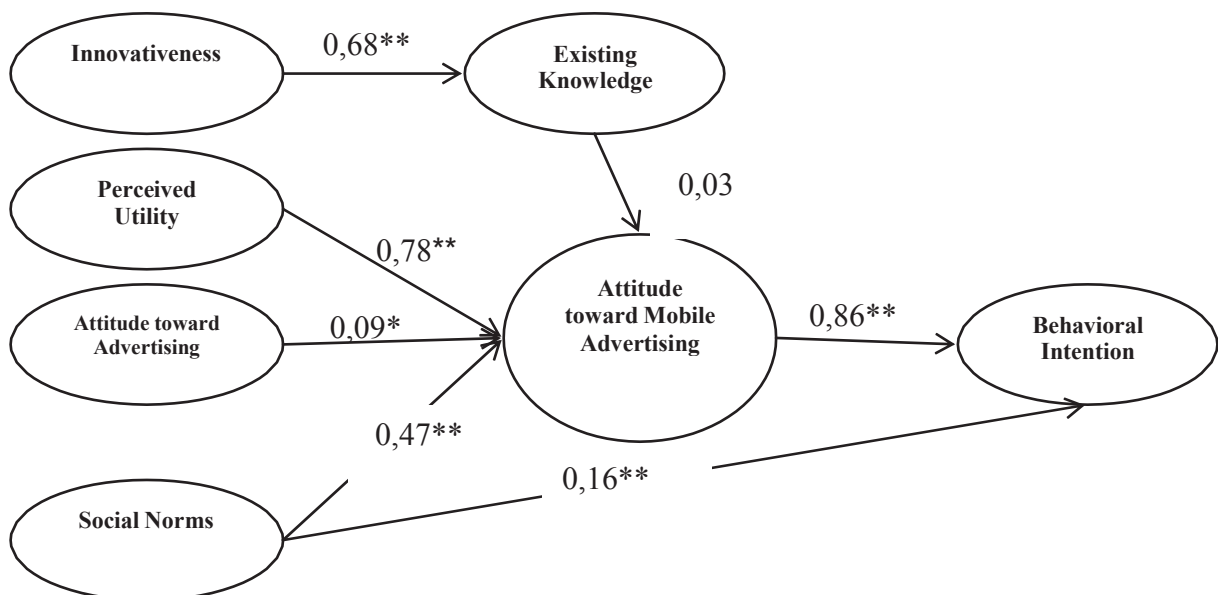


Figure 2 - Standardized path coefficients (\*p <0.05, \*\*p <0.001)

Social norms had the second highest significant effect on the attitude towards SMS advertising (0.47), a result that was first unveiled in the study of Leppäniemi and Karjaluoto (2005), while also being consistent with the findings of Zhang and Mao (2008), Yang (2007) and Bauer *et al.* (2005). The intention of teenagers to accept advertisements via SMS seems to

be a deliberate process, in which they take into account the opinions of other people considered relevant.

Teens use their mobile phones and services in the company of friends, in places where they can be seen by their peers (HARTMAN; SAMRA, 2008). So, if the use of mobile advertising becomes commonplace in teens' culture and widely used by their social groups, a teenager user will tend to form more favorable attitudes toward it and utilize it more often.

Social norms displayed both direct and indirect effects (mediated by attitude) on the intention to use mobile advertising. Even though the direct effects were less pronounced than the indirect effects (0.16 versus 0.41), which is consistent with results obtained by Bauer *et al* (2005), they were still significant, stressing the importance that social norms play in the intention to adopt mobile technologies as an advertisement media. It is interesting to note that Zhang and Mao (2008) also found a significant, but less pronounced, effect in the direct relationship between subjective norms and the intention to accept SMS advertisements.

Attitude toward advertisements in general also played a significant role in defining a consumer's attitude in relation to mobile advertising, although its effect (0.09) was less prominent than the effects of other constructs. This result suggests that, while a generally favorable attitude towards all kinds of advertisements does help in forming a better attitude toward mobile advertising, it is not as important a concept in defining attitude and adoption intention when contrasted with others, such as perceived utility and social norms.

Finally, despite the fact that innovativeness displayed a significant direct effect (0.68) on teenagers' existing knowledge about mobile communications, such knowledge was found to not significantly affect their attitude toward mobile advertising. Bauer *et al* (2005) also encountered a significant, strong, and direct effect of an individual's innovative characteristic on their existing knowledge, but the effect of knowledge on attitude was in turn very low, although significant. A possible reason for this could reside in the fact that knowledge and day-to-day usage of mobile communications is so commonplace for the surveyed students that they have not seen those factors as relevant for defining their attitude toward mobile advertising.

## **7 CONCLUSIONS**

The findings showed some similarities with the results of studies conducted within the context of other cultures (SULTAN; RHOM; GAO, 2009; ZHANG; MAO, 2008; BAUER *et al.*, 2005; TSANG; HO; LIANG, 2004). Even though the markets, in different countries, with

different cultures and at different stages of economic and technological development, might show diverse characteristics in terms of the acceptance of promotional messages sent via SMS, the youths in these markets seemingly show interesting similarities regarding the factors of accepting mobile advertising. The cell phone seems to be considered by them as a technology that is intended for both personal and social usage, and is therefore subjected to social norms that might be similar because they are related to the age group and interests.

The results and relationships encountered in this study represent contributions to the theory of technology acceptance and to the research about mobile advertising and its effects on teen consumers. The findings confirm the importance of several constructs, as proposed by other authors (BAUER *et al*, 2005; ZHANG; MAO, 2008), in the understanding of attitude and intention of Brazilian teenagers to adopt mobile advertising.

The results also show that the indirect effects of perceived utility, social norms and attitude toward advertising, mediated by the attitude toward mobile advertising, contribute to a good explanation of the surveyed Brazilian teenagers' intention to accept and adopt such technology and media. The good explanatory power of the model suggests that it includes relevant relationships for the assessment of attitude and intention in relation to Brazilian teenage consumers' adoption of SMS advertising. The findings also support the direct influence of social norms on the intention of utilizing mobile advertising. Such effects should therefore be taken into account in future research, especially in studies dealing with highly connected and social consumers, like teenagers.

For researchers interested in more deeply examining the effects of accepting promotional messages in markets of distinct cultures, it would be useful to include the concept of social distance (HOFSTEDE, 1980).

## 7.1 MANAGERIAL IMPLICATIONS

Mobile advertising has potential to become a future trend, as pointed out by Tsang, Ho and Liang (2004). Companies connected to the production of content for mobile devices might benefit from the findings, since motivating factors for using mobile devices as a platform for communicating with consumer audiences were highlighted. Given that one the most important factors influencing the attitude of a recipient seems to be the perceived utility of the promotional messages, it is important that such messages present both informational and entertainment content that attracts the teenagers, a huge potential audience.



Text messages, that lack visual and auditory impact, or impersonal messages, intended to target mass audiences, should be avoided when sending advertisements and offers, since they might be perceived by the recipients as lacking interesting information and having no entertainment value.

Employing promotional materials based upon the location of the consumer, such as when they are in close proximity to a store (for example, in a shopping mall), can be a good way to achieve more relevance and utility to the recipient.

For policy formulators, this study can help support the development of market norms and regulations for advertisements for mobile devices and SMS messages, not yet covered by Brazilian laws.

## 7.2 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

An important limitation of the study is related to the collection and processing of data. Regarding the external validity of the results, because the data reflect only the perspective of the young Brazilian high-school students that were researched, it is quite possible that relationships found in this study do not apply to other types of consumers exactly as presented.

Regarding the data collection procedure, although effort was made to make it clear what mobile marketing was and what was being evaluated (with SMS examples even being sent to respondents), some respondents might not have had a full grasp of the concept before answering the questionnaire, which might have jeopardized the quality of information collected.

Given the limitations outlined above, the replication of the proposed model with teenagers with profiles different from those here surveyed would be a good way to validate and expand the scope of the results. Additionally, well-designed experiments, in which respondents evaluate in more depth the possible uses and meanings of mobile marketing, can be a viable alternative to explore how broadly the model's findings can be generalized.

Future research may also explore other scales for the constructs, or constructs that are conceptually similar, comparing results with those here obtained. Finally, it would be interesting to investigate possible moderating effects that certain demographic variables (e.g. gender, family income) might have on the relationships here observed.

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