MOBILE MARKETING: AN APPROACH ON ADVERTISING BY SMS

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ABSTRACT

The increasing use of mobile devices is becoming more important to the execution of marketing actions through mobile platforms. According to Ibope (2013), eMarketer estimates that global investment in mobile advertising will triple in 2015, which shows the growing importance of the mobile environment in the business world. This article aims to analyze the factors that influence the acceptance of advertising by SMS regarding students in public universities of Campina Grande/PB, utilizing Marisavo et al. (2007) model. From this proposed model, a survey was developed and answered by 200 students of two public universities. The results showed that the factor influencing positively the acceptance of advertising by SMS the most is the perception of control that consumers have about receiving this type of advertising.

Keywords: Acceptance. Mobile Marketing. SMS Marketing. Mobile Advertising.

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1 INTRODUCTION

The use and importance of mobile devices in the routine of people has been increasing. Cell phones, for example, have become essential items for various activities (CAVALLINI; XAVIER; SOCHACZEWSKI, 2013). According to data from ANATEL (2014), Brazil closed the month of August 2014, with approximately 276.2 million cellular handsets, representing 136.2 devices for each group of 100 inhabitants. By 2015, this number was 257.79 million active lines in mobile telephony.

Cell phones have become a new medium used by companies to impact consumers, a strategy used in a time when consumers use these devices as a form of hobby or as a way of looking for something that catches their attention (CAVALLINI; XAVIER; SOCHACZEWSKI, 2010). Analyzing the Brazilian case, mobile advertising is not a widely used practice and mobile companies are the ones that use this type of advertising the most (HORMEYLL; LIMA; FERREIRA, 2014).

The set of practices that uses mobile devices or networks and allows relevant communication and interaction between organization and target audience is called Mobile Marketing (MMA, 2014). The most used devices in the marketing campaigns are the mobile phones (EL-AMME, 2010), whose tool called the SIM card (Subscriber Identify Module) allows the identification of each device and its respective user (BAUER et al., 2005), making possible for marketing campaigns to individualize and target better. In Brazil, the SMS (Short Message Service) campaigns are the most used form of Mobile Marketing (EHRENBERG, 2011) and it is called SMS marketing (WATSON et al., 2013). For Román et al. (2007), the marketing tool with the greatest potential for future development is cell phone because it is one of the most effective means of interactivity and direct communication between businesses and consumers.

The fact that the theme is very current (PERSAUD; AZHAR, 2012) means that there is not a satisfactory number of in-depth studies (EL-AMME, 2010) and the information about the acceptance of mobile marketing by consumers from different countries is limited (ZHANG; MAO, 2008; VERNALLI; TOKER, 2010).

The importance of the messages and the usefulness of advertising content used in mobile marketing are convergent points between several studies and also identified as very influential factors for acceptability of the mobile marketing (MARISAVO et al., 2007, WATSON et al., 2013, HORMEYLL; LIMA; FERREIRA, 2014). Poorly designed SMS advertising campaigns can be considered annoying as shown in the study by Samanta et al. (2009). On the other hand, Zhang and Mao (2008) identified mobile advertising as more responsive than other forms of direct marketing and Muk (2007) approached cultural influence in the adoption of SMS advertising. Buying style, brand trust and customer perceived value were identified by Persaud and Azhar (2012) as quite influential in the acceptance of mobile marketing and the research developed by Gao et al. (2010) and Roach (2009) was also related to the acceptance of mobile marketing. It is noteworthy that in none of these studies the approach was focused on university students, and thus, this research collaborates with a new approach regarding respondents.

This article is focused on the acceptance of advertising via SMS, considering the following question: how the acceptance of advertising messages through SMS by students of public universities happens? It aims to analyze the factors that affect the acceptance of SMS advertising by students of public universities in Campina Grande, according to Marisavo et al. (2007) model. The specific goals are to: 1) identify the influence of "utility" in the acceptance SMS advertising; 2) identify the influence of "context" in the acceptance of SMS advertising; 3) identify the influence of "control" in the acceptance of publicity via SMS; 4) identify the influence of "sacrifice" on acceptance of SMS advertising; and 5) identify the influence of "trust" in accepting SMS advertising.

Next, the article will communicate aspects about SMS Marketing and explain the concepts found in studies already carried out regarding this theme. In the second section, several concepts about mobile marketing will be uncovered in order to make the definition of the subject clearer. The following section will bring results of studies on the acceptance of Mobile Marketing as a way of obtaining a general idea of what has already been identified by other researchers. And, finally, the Mobile Marketing acceptance model of Marisavo et al. (2007) will be presented.

2 THEORETICAL REFERENCE
2.1 SMS Marketing

Messages sent by companies and considered part of a mobile marketing action are those used in advertising or promotional campaigns and paid by the company, thus being free to the consumer (CAVALLINI; XAVIER; SOCHACZEWSKI, 2013). The service allows you to send messages with a maximum of 160 characters (MUK, 2007). Some studies have identified some limitations on this service, such as the fact that some consumers consider it an annoying type of advertising (MUK, 2007; SAMANTA et al., 2009). In contrast, other studies, such as Zhang and Mao's (2008) identify greater effectiveness of SMS advertising in terms of responses if compared to direct mail, for example.

He and Lu (2007), when defining mobile advertising, cite advertising through SMS as a form of direct communication between the company and its target audience. SMS technology can also be considered a kind of one-to-one marketing (WATSON et al., 2013, XU, 2006), since companies can use individualized messages targeted at specific customers (WATSON et al., 2013; Sultan et al., 2009). The Subscriber Identify Module (SIM) is the basis for these individualized campaigns, allowing the identification of each device and each user (BAUER et al., 2005). In addition, the SMS tool can be used in the execution of marketing actions in conjunction with other traditional media, such as television (CAVALLINI; XAVIER; SOCHACZEWSKI, 2010).

The studies of Barners and Scornavacca (2004) and Jayawardhena et al. (2009) show the importance of using mobile marketing backed by permission marketing. Custom messages sent with the permission of users are perceived with superior value and not as a nuisance (BARNERS; SCORNAVACCA, 2004). According to Bauer et al. (2005), the permission marketing approach requires explicit agreement of the recipient to accept the message and goes against the spam problem, which is quite common today.

In Brazil, since May 2010, the sending of advertising via SMS without the authorization of the user (spam) is prohibited by ANATEL. Now it is required that the user accepts this type of advertising explicitly so that the company can send the advertising messages – and this is usually done via SMS (CAVALLINI; XAVIER; SOCHACZEWSKI, 2013). This is considered positive, since only those who are really interested in receiving ads actually receive it. In addition to that, the segmentation of consumers by sex, age, type of device (among others) became possible (CAVALLINI; XAVIER; SOCHACZEWSKI, 2010).

2.2 Mobile Marketing

In their work, Leppäniemi and Karjaluoto (2005) presented the need for studies that are focused on definitions of terms that involve mobile advertising. While Tähtinen (2006) showed that different terms related to the mobile marketing universe are often used to name the same phenomenon and Vernalli and Toker (2010) considered the definitions of mobile marketing quite

controversial. Some studies that better define the term will be presented, therefore, so that a notion of the concept is plausible for the readers.

According to Huelsen (2009), mobile marketing can be considered as an alternative to gain the attention of consumers in a world in which the excess of information is an obstacle to the efficiency of communication. Thus, mobile devices provide segmented and individualized communication with the target audience (HUELSEN, 2009). For Markus et al. (2009), mobile marketing has no formal definition, constituting the creation, implementation and control of marketing activities through wireless technologies that have the ability to transfer data to mobile devices.

Scharl et al. (2005) argue that mobile marketing aims to provide consumers with personalized information through a wireless medium in order to promote goods, services and ideas, bringing benefits to both parties (businesses and consumers). Shankar and Balasubramanian (2009) define mobile marketing as communication that involves two or more channels and that promotes a given company using a mobile media, device or technology. In a simple definition, César (2006) defines mobile marketing as being marketing actions that use a mobile channel.

According to Kotler and Keller (2006), mobile marketing generally has the goal of creating a strong link between business and customers and uses marketing efforts through mobile devices, which are mostly cell phones. The Wireless Advertising Association (WAA) conceptualizes mobile marketing as the sending of advertising messages to cell phones or PDAs using wireless networks (XU, 2006).

For the Mobile Marketing Association (MMA, 2014) mobile marketing "is a set of practices that enable organizations to communicate and interact with their target audiences in an interactive and relevant way through any mobile device or network." In this study, the definition of MMA will be adopted to refer to mobile marketing.

2.3 Acceptance of Mobile Marketing by the Consumer

According to Vernalli and Toker (2010), Shankar and Balasubramanian (2009) and Persaud and Azhar (2012), the Theory of Rational Action (FISHBEIN; AJZEN, 1975) as well as the Theory of Planned Behavior (AJZEN, 1985) and the Theory of Innovation Diffusion (ROGERS, 2003) are being used in studies on the behavior (acceptability) of consumers regarding mobile marketing.

Muk (2007), in his study, uses the model of Muk and Babin (2006) combined with aspects of the Theory of Rational Action of Fishbein and Ajzen (1975) and aspects of the Theory of the Diffusion of Innovation of Rogers (2003) in order to predict the behavior of consumers in relation to the adoption of SMS Advertising and the effects of cultural influence on it. The survey was conducted in the US and Taiwan, showing that perceived risk of losing privacy is the most influential factor for Americans, while social pressure is the most influential factor for Taiwanese.

Rogers's Theory of Innovation Diffusion (2003) has also been used in the work developed by Wells, Kleshinski, and Lau (2012) that investigated attitudes and behavioral intentions of Generation Y consumers in the USA, France and China in relation to marketing mobile. The studies of Wells, Kleshinski and Lau (2012) and Muk (2007) analyzed the cultural aspects and country differences involved in the cultural research of Hofstede (1980).

The study developed by Noor et al. (2013) was based on The Planned Behavior Theory of Ajzen (1985) and Permission Marketing Theory (GODIN, 1999) and was applied in Malaysia. Using these theories, significant influences of attitude towards mobile advertising, subjective norms, perceived behavioral control and permission, and intention of consumers to buy because of mobile advertising were observed.

The classic work of Bauer et al. (2005) used Fishbein and Ajzen's Theory of Rational Action (1975) to construct a model that identified the value of entertainment and information as the most important drivers for acceptance of mobile advertising through cell phones. In this study, innovation and knowledge constructs on mobile communications were identified as positive influences regarding the acceptance of mobile advertising.

Marisavo et al. (2007) identified in his research that the perceived utility of messages and the use of contextual information are the most influential factors in the acceptance of SMS advertising. The Venkatesh and Davis Technology Acceptance Model (2000) confirms the role of perceived utility in accepting new technologies. The work was developed in Finland, which has very protective laws (MARISAVO et al., 2007), which may have conditioned the weak relationship between acceptability and the variables trust and control identified, despite previous work on permission marketing.

3 THE ACCEPTANCE OF MOBILE ADVERTISING

The model of Marisavo et al. (2007) was chosen to be applied in this research as an attempt to clarify the difference between the literature on permission marketing and the result obtained regarding annoyance. These authors have identified little connection between consumers' control over the receipt of messages and the acceptability of mobile advertising in Finland. While the literature on permitting marketing shows that permission plays a key role in providing a positive view of mobile advertising (WONG; TANG, 2008). Next, the hypotheses will be exposed based on the model of Marisavo et al. (2007), which was developed based on the existing literature on the acceptance of mobile marketing.

According to Zhang and Mao (2008) and Bauer et al. (2005), the value of entertainment and the value of information have important positive influence on the acceptance of mobile advertising. The study by Pura (2005) shows that the money saving involved in the use of the mobile service influences its acceptance. In Roach's research (2009), the perception of relative advantages gained by customers when adopting mobile marketing was identified as a strong influence on the acceptance of this type of service. Therefore, it is possible to affirm that:

H1: The perceived utility of consumers in mobile advertising is positively related to their willingness to receive mobile advertising.

According to Pura (2005), it has been suggested that consumers, when using mobile services, perceive the context related to time and place behind this service. That is, by using location services, companies can send advertising messages to consumers who are close to them and this can be perceived by them at a higher value. The study by Xu et al. (2009) has provided empirical evidence on the relationship between consumer behavior and the acceptance of forms of location-based advertising. Thus, one can say that:

H2: The use of contextual information in mobile advertising by consumers is positively related to the acceptance of mobile advertising.

For Leppäniemi and Karjaluoto (2005) and Nysveen et al. (2005), cellular phones are personal devices and, therefore, the perception of control when receiving mobile advertising becomes important and has influence when deciding whether or not to accept this type of advertising, that is, control issues causes this advertising to be linked to permission marketing (MARISAVO et al., 2007). According to Barnes and Scornavacca (2004), for mobile marketing to succeed it has to be supported by the permission of the consumer. The study by Noor et al. (2013) also identified the existence of such connection between users' permission and acceptance of mobile advertising. In this sense, it can be stated that:

H3: The perception of consumer control over mobile advertising is positively related to the acceptance of such advertising.

The adoption of Mobile Marketing is also influenced by the risks of using it. These risks are mainly linked to data security, privacy and unwanted tracking (BAUER et al., 2005). The risk that personal data can be used undesirably is perceived by consumers as the main sacrifice identified by previous research and also perceived by consumers as the annoyance of using mobile advertising (STRÖM et al., 2014). Then, the following hypothesis arises:

H4: The perceived sacrifice by consumers in receiving mobile advertising is negatively related to their willingness to accept mobile advertising.

Finally, the security provided by the norms that govern mobile advertising, consumer confidence in the use of personal data and the issue of privacy also influence the acceptance of mobile advertising (MARISAVO et al., 2007). Through mobile service, companies can track all the steps of consumers and also send advertising that they may not be interested in. As a result, consumers' confidence in companies that send advertising messages influences acceptance or non-acceptance of these messages (AZHAR; PERSAUD, 2012). Thus:

H5: Consumer confidence in privacy and mobile advertising norms is positively related to their willingness to accept mobile advertising.

Finally, Figure 1 from the graphical representation of the model of Marisavo et al. (2007), shows that acceptance can be influenced by five variables: utility, context, control, sacrifice and trust.

Figure 1: Marisavo et al. (2007) model
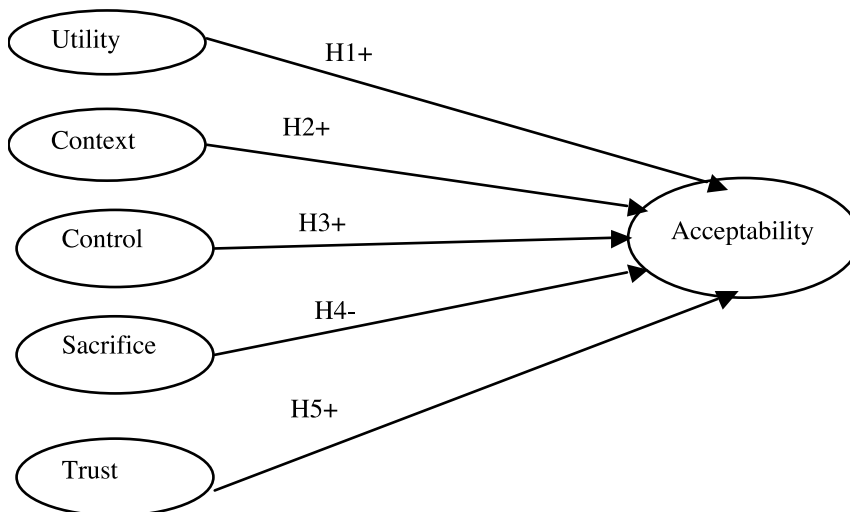
Source: Adapted from Marisavo et al. (2007)

4 METHODOLOGY

According to Cervo and Bervian (1996, p. 49), "Descriptive research seeks to discover, with viable precision, the frequency with which a phenomenon occurs, its relation and connection with others, its nature and characteristics, correlating facts or phenomena without manipulating it. As a descriptive research, we analyzed the factors that influence the mobile marketing acceptance phenomenon and identified the frequency with which these factors affected the respondents' acceptance of mobile marketing. The goal was to suppress the influence of the researcher towards the results.

According to Roesch (1999), when the project aims to measure the relationship between variables or to evaluate the outcome of a system, a quantitative research approach is recommended. For Cresswell (2007), the quantitative research is carried out to create knowledge through cause and effect reasoning. Castro (2006) shows that in the quantitative research the researcher already has his hypotheses on the subject and intends to test them in the field. Therefore, research approach utilized here was quantitative and the data obtained was quantified and analyzed statistically and objectively.

A questionnaire was used as a personal data collection tool and given to 200 students from the two public universities of Campina Grande: State University of Paraíba (UEPB) and Federal University of Campina Grande (UFCG). Previously, a pre-test with students from both universities was performed in order to identify possible problems of interpretation. The questionnaire was developed based on Marisavo et al. (2007) model. It was divided in two parts: in the first one, the profile of the respondents was identified; and in the second one, respondents' opinions on mobile marketing were singled out. The 5-point Likert scale was used and the value "0" meant zero agreement level. The value "2" meant moderate agreement level and "4" meant maximum agreement level. It aimed to recognize the degree of agreement of the respondents in relation to questionnaire affirmations. Table 1 shows the scale used in the research.

Table 1 - Scale used in the study according to Marisavo et al. (2007)

Utility	0	1	2	3	4
1. Saving money is an important feature of mobile advertising via SMS;					
2. Saving time is an important feature of mobile advertising via SMS;					
3. The use of useful information is important in mobile advertising via SMS;					
4. Providing entertainment experience is important in mobile advertising via SMS.					
Context	0	1	2	3	4
5. I would like to receive special promotions and promotions via SMS related to some company or place to which I am close;					
6. I would like to receive special offers and promotions via SMS related to the period of the year or the commemorative date (Christmas, New Year, etc);					
7. I would be willing to spend time making my personal data available so that I receive SMS advertising in a way that is more targeted to my needs.					
Control	0	1	2	3	4
8. I am willing to receive only the advertising and promotional campaigns via SMS that I agreed to receive;					
9. It is important to me that I have the power to control the receipt of mobile advertising via SMS;					
10. It is important to me that I can refuse to receive mobile advertising via SMS;					
11. It is important to me that I can filter mobile advertising via SMS so that I receive only those targeted to my needs.					

Sacrifice	0	1	2	3	4
12. A negative point in receiving advertising and promotions via SMS is the loss of control;					
13. A negative point in receiving advertising and promotions via SMS is the loss of privacy;					
14. A negative point in receiving advertising and promotions via SMS is the time involved in dealing with them;					
15. A negative point in receiving advertising and promotions via SMS is that I consider them annoying or disturbing;					
16. A negative point in receiving advertising and promotions via SMS is that it hinders the distinction between home, work and leisure activities.					
Trust	0	1	2	3	4
17. I believe that my mobile operator uses my data only for the purposes I have agreed to;					
18. I believe that the companies that own my data use them only for the purposes I have agreed to;					
19. I believe that Brazilian data protection laws effectively protect consumers.					
Acceptability	0	1	2	3	4
20. I have a positive feeling about advertising via SMS;					
21. In the future, I will be willing to receive advertisements and promotions via SMS;					
22. In the future, I will read all the advertising and promotional campaigns via SMS that I receive on my cell phone.					

Source: Adapted from Marisavo et al. (2007)

Considering the number of research variables and the criteria for the use of multivariate data analysis techniques, the sample was non-probabilistic since the interviewees were chosen because they were in the right place at the right time (MALHOTRA, 2012). The reliability of the measurement scales came from the Cronbach's Alpha calculation, using internal consistency tests that represent an intercorrelation measure in a set of items (HAIR et al., 2009). The questionnaire was developed based on ideas present throughout the article, based on the model of Marisavo et al. (2007).

The data was initially screened to identify and analyze missing values and also identify some existing pattern in missing data that characterizes this process as well. Nevertheless, missing values were disregarded because they were completely random in nature. As for the outliers, there was no need for treatment and correction, since they did not interfere in the the data patterns to be analyzed (CORRAR, et al., 2009).

The normality of each variable was checked separately and then the multivariate normality showed that the combinations of the univariate variables were also normal. The Shapiro-Wilks and Kolmogorov-Smirnov tests were used to determine the level of significance for the differences in relation to the normal distribution.

Firstly, the Exploratory Factor Analysis (EFA) was used as the initial measurement of the constructs and as a way of explaining the variables by the factorial loads for each factor. The researcher did not know the dependence relations between the variables of the study so then the analysis was made with the aid of SPSS (Statistical Package for Social Sciences) Software 19.0 to utilize multivariate techniques. The method used was that of the Principal Components (PC), aiming at the identification of a linear combination between the variables, so that the maximum variance was explained by this combination.

In order to identify the relationships between the constructs and the acceptance of mobile advertising by the students, we used regression analysis. This technique makes it possible to predict the power of dependent variables in function of independent variables (explanatory or predictive variables), also allowing an analytical side in the relationships between the variables (HAIR et al., 2009). Through regression analysis, it was established a functional relationship between the variables of the study and then a description of the phenomenon was possible.

In order to evaluate the theoretical model, it was used the modeling of structural equations using the PLS (Partial Least Square) technique and the Smartpls 2.0 software. The analysis criteria were: the coefficients of each path, Cronbach's Alpha, convergent validity and Extracted Variance (EVA). Some of the parameters accepted in the literature are that factor loads and reliability should have levels above 0.7 and the explained variance must present levels above 0.5 (CHIN, 2000). The use of this method was justified by the fact that the research was configured as exploratory, since there was no consolidated theory about the object of study (CHIN, 2000; HAIR et al., 2009).

5 ANALYSIS OF RESULTS

This topic begins with the presentation of the socio-demographic characteristics of the interviewees who composed the sample, with 200 valid cases. Regarding the profile of the respondents, 81% were 25 years or less. 54.5% were male and 45.5% were female. In relation to the educational institution, 63.5% were studying in the UEPB and 36.5% were students of UFCG. Those who had a family income up to three (3) minimum wages totaled 56.5% and the vast majority of the respondents were single (91%). The research constructs will be analyzed below.

5.1 Analysis of constructs

In this phase of the study, the results of the indicators integrating the model to be tested in the research were presented as follows: each indicator measured in the construct first and then the number of responses for each item. In addition, results of descriptive statistics were also exposed and showed: mean, standard deviation, coefficient of variation, asymmetry and kurtosis indexes. It has been that the asymmetry and kurtosis indexes sought to know a priori the indications of normality of the distributions.

The evaluation of the indicators of the constructs was initiated through an EFA, using the main components analysis method, in order to obtain factors that contained the highest degree of explanation of the possible variance. The criterion of eigenvalues (Eingenvalues) was used. The identified factors obtained eigenvalues greater than 1,000, with the proposition of two factors. The identified factors obtained eigenvalues greater than 1,000 with the proposition of two factors that together show an explained variance of 68.04% according to Table 1.

Table 1 - Total variance of study constructs

Compo-nent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Vari-ance	% Acumu-lated	Total	% Variance	% Acumu-lated	Total	% Variance	% Acu-mulated
1	4,269	19,403	19,403	4,269	19,403	19,403	2,660	12,092	12,092
2	2,927	13,305	32,708	2,927	13,305	32,708	2,559	11,630	23,722
3	2,301	10,458	43,166	2,301	10,458	43,166	2,474	11,245	34,967
4	1,780	8,091	51,257	1,780	8,091	51,257	2,243	10,195	45,163
5	1,505	6,843	58,100	1,505	6,843	58,100	1,852	8,419	53,582
6	1,158	5,265	63,365	1,158	5,265	63,365	1,822	8,281	61,862
7	1,029	4,676	68,040	1,029	4,676	68,040	1,359	6,178	68,040
8	,865	3,934	71,974						

Extraction Method: Principal Component Analysis.
Source: Research Data (2015).

The first factor was responsible for the explanation of 19.40% of the variance, the second one was responsible for 13.30%, the third factor was 10.45%, the fourth was 8.09%, the fifth was 6.84% the sixth by 5.26% and the seventh by 4.76%. Another test was the calculation of Cronbach's Alpha, in order to verify the consistency of the scales. The constructs obtained 0.723 for the twenty-two items in the scale. Based on the fact that a good consistency is obtained from 0.70, according to Hair et al. (2009), it is considered that the items of the Usability construct scale, for this study, presented a satisfactory consistency.

Thus, based on the model of Marisavo et al. (2006) and on the factorial loads, factor 1 adds aspects related to the "control" construct in advertising acceptance while the second factor is related to the "context" construct regarding permission to use and regulation. The third which is "utility" refers to the perceived value of the client in relation to the use of time and place, the fourth is related to the acceptance of advertising, the fifth factor is connected to confidence regarding the use information, and the sixth and seventh factors are related to the "sacrifice" construct – since some risks (for example, user privacy are perceived when using this type of communication. According to matrix of factorial loads presented in Table 2.

Table 2 - Matrix of factorial loads

	Componentes						
	1	2	3	4	5	6	7
control of receipt	,873						
filter receipt	,846						
refuse receiving	,826						
agreement with receipt	,558						
period of the year		,782					
company or location		,771					
personal data		,720					
useful information			,740				
entertainment			,698				
willing to receive advertising			,656				
positive feeling			,589				
read all advertising campaigns			,585				
data for company				,916			
operator data				,882			
protection laws				,708			
loss of privacy					,803		
loss of control					,754		
time involved					,687		
save money						,868	
save time						,840	
hampers work / leisure							,840
annoying / disturbing							,513

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 11 iterations.
Source: Research Data.

Thus, it was observed that the pertinent hypotheses were H1, H2 and H5. Given this, the context influenced 36.7% in the acceptance, the trust influenced 20,6% in the acceptance and the utility influenced 22,7% in the acceptance. Those results suggest that the permission and regulation of advertising via SMS, the trust and value perceived by the user are important for a better acceptance of the via SMS. These results corroborate the results of Bauer et al. (2005), Pura (2005), Roach (2009) and Zhang and Mao (2008).

5.2 Acceptance of advertising via SMS by students of public universities.

In this stage, the analysis demonstrate the relation between variables and acceptance of the researched students regarding SMS advertising. Bivariate correlation analysis was performed to identify the existence of relations between the antecedents and the acceptance of the advertising by the researched students. And then, through the Pearson correlation coefficient, significance test direction (positive or negative) and strength of the relation between variables were considered.

The study sought to determine the mathematical function that estimates the behavior of a given variable based on the values of other variables (HAIR et al., 2009). We used the Stepwise method to analyze the contribution of each variable to the model, starting with the independent variable with the highest coefficient of correlation with the dependent variable. The purpose of the multiple regression analysis, for this study, was understanding the relations between the dependent variable (acceptance of advertising) and other variables of the research.

When the dependent variable to measure advertising acceptance was "availability in receiving advertising" (V21), the Stepwise method selected as statistically significant the variables: positive feeling regarding SMS advertising (V20), reading all advertising and promotional campaigns via SMS (V22), availability of personal data (V7), and refuse to receive mobile advertising via SMS (V10). The model that best explains the students' acceptance of the advertising presented a R2 of 0.604, showing an explanation of 60.4%, according to Table 3.

Table 3 - Coefficients of the advertising acceptance regression model

Modelo	Coeficientes padronizados			
	Beta	**t**	**Sig.**	R^2
Zscore: V20	,405	7,655	,000	
Zscore: V22	,380	7,315	,000	
Zscore: V7	,146	2,916	,004	
Zscore: V10	,134	2,848	,016	0,604

Source: Research Data (2015)

Nota: a. *Dependent variable* (*disponibilidade em receber publicidade*).

When the dependent variable to measure advertising acceptance was the positive feeling regarding advertising (V20), the Stepwise method selected the following variables as statistically significant: provide entertainment experience in relation to advertising via SMS (V4), availability (V21), refuse to receive mobile advertising via SMS (V10), filter mobile advertising via SMS (V11), a negative point in receiving advertising and promotions via SMS is the time involved in dealing with them (V14) . The model that best explains students' acceptance of advertising presented an R^2 of 0.490, showing an explanation of 49%, according to Table 4.

Table 4 – Coefficients of the advertising acceptance regression model

Modelo	Coeficientes padronizados			
	Beta	t	Sig.	R^2
Zscore: V20	,584	10,339	0,000	
Zscore: V4	-,248	-3,705	0,000	
Zscore: V21	,139	2,486	0,014	
Zscore: V10	,167	2,489	0,014	
Zscore: V11	-,131	-2,516	0,013	
Zscore: V14	-,115	-2,166	0,032	0,490

Source: Research Data (2015).

Nota: a. *Dependent variable* (*sentimento positivo em relação a publicidade*).

When the dependent variable to measure advertising acceptance was read all advertising and promotional campaigns via SMS (V22), the Stepwise method selected as statistically significant the variables: availability to receive advertising (V21) and variable a negative point in receiving advertising and promotions via SMS is the loss of privacy (V13). The model that best explains students' acceptance of advertising acceptance presented an R^2 of 0.420, showing an explanation of 49%, according to Table 5.

Table 5 – - Coefficients of the advertising acceptance regression model

Model	Coeficientes padronizados			
	Beta	t	Sig.	R^2
Zscore: V21	,632	11,572	0,000	
Zscore: V13	-,115	1,998	0,047	0,420

Source: Research Data (2015)

Nota: a. *Dependent variable (ler todas as campanhas publicitárias e promocionais via SMS).*

From the regression analysis, we can see that the variable that most influences the acceptance of SMS advertising in the context studied was the variable (V21) availability to receive advertising with a beta of 0.632.

5.3 Analysis of the structural model

In order to evaluate the theoretical model to be tested, we used the modeling of structural equations using the PLS (Partial Least Square) technique through the Smartpls 2.0 software. For each construct, the exploratory factorial analysis was made by grouping the indicators in each factor according to significance of factorial loads, communality and procedures related to the statistical use of Cronbach's Alpha.

A confirmatory factorial analysis was performed with the purpose of analyzing each construct separately. The criteria of the analysis were based on: coefficients of each path, Cronbach's Alpha, convergent validity and Extracted Variance (EVA). The parameters accepted in literature are that factor loads and reliability should have levels above 0.7 and the explained variance must present levels above 0.5 (CHIN, 2000), according to Table 6.

Table 6 – Performance index of the analyzed constructs

	AVE	Composite Reliability	R Square	Cronbachs Alpha	Communality	Redundancy
Aceitação	0,7197	0,8848	0,3901	0,8048	0,7197	0,0295
Confiança	0,7039	0,8769	0,0000	0,7996	0,7039	0,0000
Contexto	0,6706	0,8591	0,0000	0,7534	0,6706	0,0000
Controle	0,5124	0,7421	0,0000	0,7401	0,5124	0,0000
Sacrifício	0,5264	0,7607	0,0000	0,6125	0,5264	0,0000
Utilidade	0,4631	0,7609	0,0000	0,6583	0,4631	0,0000

Source: Research Data (2015)

The analysis of the final research model demonstrated that acceptance of SMS advertising is positively related to the use of contextual information, consumer confidence in privacy, mobile advertising rules and the perceived utility of mobile advertising. On the other hand, it has been noted that acceptance is negatively related to the perceived sacrifice by consumers in receiving mobile advertising. Figure 2 shows the definitive confirmatory model of the study.

Figure 2: Confirmatory model of the research
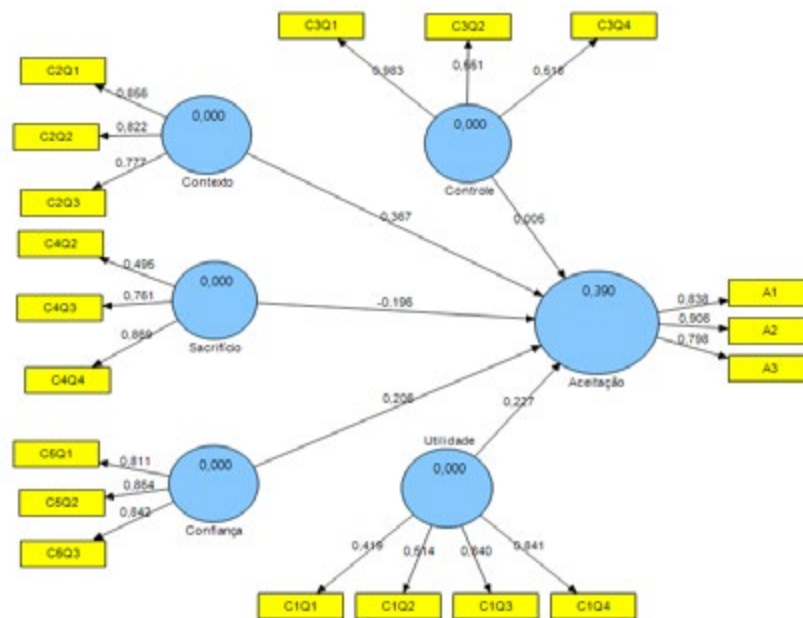
Source: Research Data (2015)

6 FINAL CONSIDERATIONS

The study produced some academic and managerial contributions to the use of SMS in mobile advertising. The most expressive result was the control variable, which was identified as irrelevant to the acceptance of mobile advertising. This result goes against the literature on permission marketing, such as Godin (1999) and Noor et al. (2013), which identified the importance of permission marketing support. Perceived utility of messages, however, was a variable identified as positive, which is supported by the literature on technology acceptance, such as the Davis (1989) model. The studies of Hor-Meyll, Lima and Ferreira (2014) and Nysveen et al. (2005) also support this result.

The variable sacrifice was identified as an important negative variable. This result is supported by the studies of Marisavo et al. (2007) and Bauer et al. (2005). In contrast, the results of this specific case suggest that there is a positive relationship between context and trust variables regarding the acceptance of mobile SMS advertising. In relation to the context, the result of this research corroborates the study of Marisavo et al. (2007) who identified it as a strong factor for the acceptance of mobile advertising. Regarding confidence, however, this research did not converge with the study by Marisavo et al. (2007), since the presented result was significant.

Regarding the managerial implications of this study, it is important to highlight that companies that use SMS advertising are careful to provide the consumer with the possibility of accepting this type of message or not. It was clear from the results that most respondents considered irritation and loss of control as the main sacrifices, which can be minimized by supporting mobile marketing campaigns in permission marketing, as shown in the studies by Barners and Scornavacca (2004) and Jayawardhena et al. (2009). The usefulness of messages should also be a point to be observed by companies in the development of their advertising messages.

The tendency to accept mobile advertising has been rather low. Regarding the main sacrifices that may influence the poor acceptance of this type of advertising are loss of control and irritation among respondents; and a lack of trust demonstrated regarding their personal data being made available to companies for use in marketing campaigns – which may be influenced by the lack of trust in Brazilian data protection legislation that was also identified in the study.

Overall, this study was able to show the importance of control and usefulness of the messages and future studies should focus their efforts on context and confidence because those have not yielded significant results. More research needs to be done to fill this gap and it is also important that new studies bring more aspects related to control, due to the expressiveness of the results obtained in this research.

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