

# Analysis of the Effectiveness of SMS Marketing by Mobile Companies: A Case Study of Telecom Sector in Southern Punjab-Pakistan

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## Abstract

The objective of this study is to explore indirect effect of factors of SMS advertising i.e. trust, informativeness, and irritation on purchasing behavior through an intervening variable i.e. attitude of the customers. The relationship between these variables were measured through different statistical techniques such as descriptive statistics, correlation, principal component analysis (PCA), and multivariate regression analysis. Primary data was used in this study which was collected through field survey. A questionnaire was constructed through which the views of 319 students of universities belonging to three geographical regions of Pakistan i.e. Bahawalpur, D.G.Khan and Multan Divisions were recorded. Our Results shows positive relationship between trust and informativeness with attitude of the customers, while irritation is negatively related to the attitude of the customers. It may be mentioned that we have taken the attitude of the customers as a positive predictor of purchasing behavior and acts as a mediator.

**Keywords:** Emotional Intelligence, Personality Traits, Transformational Leadership, Leader's Effectiveness

## 1. INTRODUCTION

Mobile phone technology has brought a revolution in the lives of the people as well as in the working of business organization. It has enabled of the people to connect with one another while it has helped business organizations expand their business, promote their products and services. It is an easy and cheap source of business development and communication [1]. In recent times, mobile phone access has been increased across the world. In terms of access and penetration, the assumed ratio of mobile phone usage is 79% people of the developing countries and 87% of the world population which is compatible with SMS application [2]. The mode of advisements is also rapidly changing on account of fast technological progress and innovations in technological sector. It facilitates the leading business firms to adopt SMS marketing strategies, which is low cost and more effective. Through SMS marketing the business firms can easily introduce their products and customers to all types of customers. [3] The business firms reportedly are getting high and rate of response through SMS marketing as compared to traditional mode of advertising. Moreover, the response is quick making the marketing people more alert and efficient. In other words, SMS marketing has generated efficiency in the business operation such as production and delivery, keeping the marketing people all the time alert and efficient to capture of opportunity. [4]. Some early scholars suggest that SMS marketing provides the best opportunity of high response rate to marketers as compared to traditional mediums. The justification is that people working with SMS marketing network such as businesses firms, marketing managers, advertisers, brand developers and customers can interact in a more informal and creative way as compared to traditional way, which took long time to think about the product and services of any company by the customers. Now the customers' needs less time to think. He just think his need, availability of money and quality of products and services.[5] SMS Marketing companies producing high tech or green products mainly focus on educated customers because they are able to understand the product quickly, its importance and utility because they are more health-conscious. They less care that the product is costly but they importance to the quality and health benefits of products. [6]. Demographic factor is also playing key role in the expansion of SMS marketing because people on large scale are using mobile phone. For example, in Pakistan, the mobile phone subscribers are more 120 million. The same thing is in South Africa, where the use of landline phone was very low, but the number of mobile phone subscribers are in hundred million. Even common man having very low income are using mobile phone and keep him connect with his family, friends and businesses. The budgets of SMS marketing exceeded to 11 billion in 2011 from 1 billion in 2007. Around 22% of firms using online advertising have diverted towards SMS marketing. It shows the growing business of SMS marketing on large scale not only in Pakistan but also in other countries as well. [7].

### 1.2. Main Research Problem

The main research question of this research paper is to "Analyze the effectiveness of SMS Marketing by Mobile Companies: A case study of Telecom Sector in Southern Punjab." We will study whether SMS marketing

strategies of companies to introduce their products and services are effective and increasing their sales volumes and profitability.

### 1.3. Objectives of study

The objective of this study are stated as under:-

1. To determine the correlation between trust and attitude of consumers towards SMS marketing.
2. To determine the correlation between informativeness and attitude of consumers towards SMS marketing.
3. To determine the correlation between irritation and attitude of consumers towards SMS marketing.
4. To determine the correlation between attitude of consumers towards SMS marketing and purchasing behavior.
5. To test the mediation role of attitude of consumers towards SMS marketing between trust and purchasing behavior.
6. To test the mediation role of attitude of consumers towards SMS marketing between informativeness and purchasing behavior.
7. To test the mediation role of attitude of consumers towards SMS marketing between irritation and purchasing behavior.

### 1.4. Scope of the Study

The scope of this study is wide because SMS marketing has been rapidly increasing as the number of mobile phone subscribers have exceeded 120 million in Pakistan. The results of this study will be useful for mobile companies and they can formulate their business strategies in the light of the recommendation of this study.

## 2. METHODOLOGY

### 2. Research Design

#### 2.1. Population

It is estimated that the users of cell phones from each state represent the demographic diversity and experience with usage of mobile phones. Apart from this cross section, there is also an extensive exposure towards technology and mass media by the population. Furthermore, a prudential social interaction is practiced by the population among themselves. As compared to lower degree of social interaction, there is a higher tendency of adopting new innovations due to higher degree of social interaction. In Pakistan, most of the users of cell phones are youth. Due to this reason, data collection was based on university students belonging to three geographical areas of Multan, D.G.Khan and Bahawalpur Divisions.

#### 2.2. Sampling Technique

For data collection, a random sampling technique was used because every unit got equal chance of selection from the population. A questionnaire was structured to collect data from sampling population. A field survey method was used and the respondents were asked to read the questionnaire carefully and answer the questions accurately. They were assured to keep the data confidential and would be used only for this study. The data was collected during February 2015 to April 2015. All questions were closed-ended so that the respondents fill them without any difficulty.

#### 2.3. Size of Sample

The size of sampling population was 375 and Questionnaires were distributed among 375 students who are the mobile phone users and in the past, they have received an SMS advertisement of a product or a service from any organization. The respondents were briefed about the objective of the study and nature of questions and then questionnaire were distributed in the class of graduate and post-graduate students.

#### 2.4. Selected variables

Three types of variables were used in this study. These variables are:-

1. Independent variables: - informativeness, Trust and Irritation.
2. Dependent variables: - purchasing behavior of customers.
3. Mediating variable: Attitude of customers.

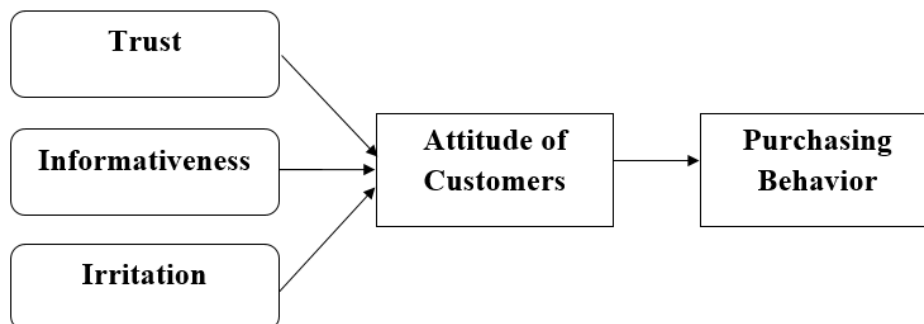
#### 2.5. Scales of Measurement

To analyze the data one tool is used in the current study. This tool is SPSS v. 16 and it is used to perform numerous tests on data set. These tests include missing value analysis, aberrant value analysis, reliability analysis, factor analysis, correlation, multivariate regression analysis, and mediation through regression. This software is specified to perform particular analysis of each construct e.g. factors of SMS advertising (trust,

Informativeness, irritation), attitude of consumers, and purchasing behavior of consumers towards SMS advertising. The major scales of measures are given below:-

- (a) Principle component analysis for consumer purchase behavior
- (b) Multivariate Regression Analysis
- (c) Mediation Analysis through Regression
- (d) Bivariate Correlation Analysis

## 2.6. Proposed Model



The proposed model depicts the relationship of all constructs. It clarifies the independent, dependent and mediator variables individually. This model states that trust, informativeness and irritation are the independent variables, attitude of consumers is mediating variable and purchase behavior of the consumers is dependent variable. It shows the factors of SMS advertising i.e. trust, informativeness and irritation are directly related with the attitude of consumers and attitude of consumer is directly related with the purchase behavior of the consumers. informativeness and trust are the positive constructs having positive impact on the attitude and purchasing behavior of the consumers, while irritation is considered as the negative construct having a negative impact on the attitude and purchasing behavior of the consumers.

## 3. DATA ANALYSIS

As this study concentrates on “relationship between factors of SMS advertising, attitude and purchasing behavior of consumers towards that SMS advertising” For preliminary data screening, missing value analysis, aberrant value analysis, normality analysis and Bivariate correlation were performed in SPSS. Further, principal component analysis, regression analysis and mediation analysis were also performed to measure the model of every construct and to prove the entire hypotheses. As this is quantitative research so, results are obtained in the form of values which confirm the acceptance or rejection of the proposed hypothesis.

### 3.1. Preliminary Data Screening

Data screening is done at initial level to ensure the suitability of data file for further analysis. This preliminary data screening is performed through the analysis of missing values, abnormal or aberrant values, normality, descriptive statistics, and Bivariate correlation [9]. All these tests are performed for initial data screening to make the data suitable for further analysis.

### 3.2. Missing value Analysis

For the purpose of data screening, firstly missing value analysis is performed, because presence of any missing value in data set can create problems or troubles by providing some sort of incorrect or incomplete results. In case, if missing values exist in the data set then more frequently these missing values are replaced by mean substitution method in SPSS software [9]. In this study, when missing value analysis was performed, it shows the absence of any missing value in data set. Thus, this data file is suitable to perform further analysis.

### 3.3 Aberrant Values

Aberrant values are those values in the data set that fall outside the response categories. As the scale of current this ranges from 1 to 5 so those values which lie outside this range will be recognized as aberrant values.

### 3.4. Descriptive Statistics and Normality Test

Descriptive statistics and normality test confirms the normal distribution of the data set. Results of descriptive statistics show that data is normally distributed. This was found by observing the values of kurtosis and skewness. A condition of data to be normally distributed is that the values of kurtosis and skewness should lie between +3 and -3. In this study, the values of kurtosis and skewness are in range of +3 and -3 which confirms that data is normally distributed and it also confirms that data is suitable to perform further analysis with

accuracy as all values lay within the recommended range.

**Table 1: Mean and Standard Deviation for all variables: (N= 319)**

Variables	N	Mean	Std. Deviation
ATT	319	3.6277	.72626
IRR	319	1.2665	.55507
TR	319	3.6552	.81999
INF	319	3.8401	.82578
PB	319	3.8997	.76075

Moreover, estimated mean and standard deviation of all variables are also the part of descriptive statistics. The results show that means of all variables except Irritation are above 3 that is the midpoint of the study. As purchase behavior (M=3.899) and Informativeness (M=3.840) have the highest means, trust (m=3.655) and attitude (M=3.628) have the also mean above 3, but irritation (M=1.267) have much lowest mean showing that it has negative impact as compared to other variables. Similarly, standard deviation also shows highest values confirming the acceptance of the hypothesis.

### 3.5. Reliability of Scales

Reliability of all scales was measured by cronbach's alpha to assess the reliability of the overall data set. The values of Cronbach's alpha for the constructs are given in Table 5.2, most of the methods of research guides that the alpha value should be greater than 0.7, that is recommended and acceptable value. Alpha values of trust, Informativeness, irritation, attitude, and purchasing behavior are 0.810, 0.832, 0.778, 0.712 and 0.810 respectively. As all values are above 0.7, so it shows that data is suitable for further analysis and it is also generally acceptable in scientific research.

**Table 2. Reliability Coefficients for items in each variable (N=319)**

Variable	Reliability
Trust	.810
Informativeness	.832
Irritation	.778
Attitude	.712
Purchasing Behavior	.810

### 3.6. Bivariate Correlation Analysis

It's important to observe the correlation matrix for co-linearity, prior to the measurement of validities, reliability analysis and factor analysis of the proposed constructs [10]. Correlation is the statistical technique to find the relationship between the two variables that to what extent they are correlated. It is most common and useful technique to test whether two variables are changing simultaneously or not. Correlation coefficients allow to assess that is there significant relationship between the constructs. If the value of the correlation is above than 0.30 it shows that correlation is significant. Significant correlation value is reliable for the satisfactory results of factor analysis. The analysis of the proposed constructs shows that variables are positively and significantly correlated with each other.

**Table 3: Bivariate Correlation**

	mATT	mIRR	mTR	mINF	mPB
mAT	1				
mIRR	-.119*	1			
mTR	.517**	-.124*	1		
mINF	.370**	-.037	.365**	1	
mPB	.357**	-.049	.339**	.621**	1

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

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

### 3.7 Interpretation of the values:

- 0.0 to 0.2 shows very negligible or weak correlation
- 0.2 to 0.4 shows low or weak correlation
- 0.4 to 0.7 shows moderate correlation
- 0.7 to 0.9 shows high or strong correlation
- 0.9 to 1.0 shows very strong correlation

### 3.8. Correlation between Independent and Dependent Variable

Table 3 shows that the correlation between all independent and dependent variables is positive and significant except irritation whose correlation is negative. The correlation between trust (independent variable) and purchasing behavior ( $r=.339^{**}$ ), informativeness and purchasing behavior ( $r=.621^{**}$ ), and irritation and purchasing behavior ( $r=-.049$ ) is significant at the 0.01 level (2-tailed).

### 3.9. Principal Component Analysis

SPSS version 16 was used for principal component Analysis of 4 items of trust, 4 items of irritation, 3 items of informativeness, 4 items of consumer's attitude and 4 items of consumer's purchasing behavior. Through data screening it was made sure that data is appropriate and suitable for factor analysis or principal component analysis. Many coefficients in correlation matrix have value of .3 or above which is significant. Different values are considered in PCA which are required for it. The first item obtained from factor analysis is Kaiser-Meyer-Olkin (KMO) and Bartlett's tests. KMO is used to measure the sample adequacy and its value should be above 0.6 which is a threshold value. If a KMO value is less than 0.6 then it will be unsatisfactory (Kaiser, 1974). The values of these tests for all constructs are in given below.

#### 3.9.1 Principal Component Analysis for Trust

**Table 4: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.770	
Bartlett's Test of Sphericity	Approx. Chi-Square	408.144
	Df	6
	Sig.	.000

The value of Kaiser Meyer Olkin measure is .770 which exceeds the recommended value of KMO that is 0.6. (Kaiser, 1974). The Bartlett's test of sphericity (Bartlett, 1954) is also significant because probability value less than value of 0.05 is significant and here the value is .000 so, it supports the factorability of correlation matrix.

### 3.10 Mediation Analysis through Regression

Attitude of consumers acts as a mediator between factors of SMS advertising (trust, informativeness, Irritation) and purchasing behavior. As the research states that attitude of consumers plays a mediating role between the factors of SMS advertising (trust, informativeness, irritation) and purchasing behavior of consumers towards SMS advertising. The mediating relationship of attitude of consumers between the factors of SMS advertising (trust, informativeness, irritation) and purchasing behavior of consumers towards SMS advertising is shown in the diagram given below. To judge the impact of independent variables on dependent variable and the mediating effect of Attitude of consumers, Regression Analysis was carried out, depicted that few conditions should be met to test the mediating effect of a variable. First of all, there should be a relation of independent and mediating variable with each other. Secondly, there must be a significant relationship between independent variable and dependent variable. Thirdly, the impact of independent variable on dependent one should decrease, when mediating variable is added [11]. The results have been shown in Table 5.

**Table 5: Mediation Analysis through Regression**

Step	Dependent Variable	Independent Variable	Standardized Regression coefficients ( $\beta$ )	F	T	Sig.	Adjusted R <sup>2</sup>
1	Attitude of Consumers	Factors of SMS Advertising	0.574	88.925	11.983	.000 .000	.342
2	Purchasing Behavior	Factors of SMS Advertising	0.339	54.686	6.388	.000 .000	.397
3	Purchasing Behavior	Attitude of Consumers	0.531	71.284	10.803	.000 .000	.503
		Factors of SMS Advertising	0.190	40.135	2.966	.062	.291

**Table 6 Summary of Tests of Hypotheses**

	<b>Hypothesis</b>	<b>Results</b>
<b>H1</b>	High trust of SMS marketing is positively related to the attitude of consumers towards SMS marketing.	Accepted
<b>H2</b>	High Informativeness of SMS marketing is positively correlated to consumers' overall attitudes towards SMS marketing.	Accepted
<b>H3</b>	Irritation of SMS marketing is positively related to the attitude of consumers towards SMS marketing.	Accepted
<b>H4</b>	Consumers' attitude towards mobile advertising has a significant relationship with purchase behavior.	Accepted
<b>H5</b>	Attitude of consumers acts as a mediator between trust and purchase behavior	Accepted
<b>H6</b>	Attitude of consumers acts as a mediator between Informativeness and purchase behavior	Accepted
<b>H7</b>	Attitude of consumers acts as a mediator between irritation and purchase behavior	Accepted

#### 4. Findings and Results

A positive relationship is found between Trust and Attitude of the consumers ( $R^2=0.467$ ,  $p < .001$ ). In this case, the coefficient of determination for impact of trust (TR) on attitude of the consumers (ATT) (Adjusted  $R^2 = 0.465$ ) implies that 46.5 % variance in the attitude of the consumers can be explained by the variation in the perception of the trust value of consumers for SMS advertisements. This is supporting our hypothesis 1. A positive relationship is found between informativeness and Attitude of the consumers ( $R^2=0.505$ ,  $p < .001$ ). In this case, the coefficient of determination for impact of informativeness (INF) on attitude of the consumers (ATT) (Adjusted  $R^2 = 0.501$ ) implies that 50.1 % variance in the attitude of the consumers can be explained by the variation in the perception of the informativeness value of consumers for SMS advertisements. This relationship is supporting our hypothesis 2.

A negative relationship is found between Irritation and Attitude of the consumers ( $R^2=0.308$ ,  $p < .001$ ). In this case, the coefficient of determination for impact of Irritation (IRR) on attitude of the consumers (ATT) (Adjusted  $R^2 = 0.302$ ) implies that 30.2 % variance in the attitude of the consumers can be explained by the variation in the perception of the irritation value of consumers for SMS advertisements. This is supporting our hypothesis 3.

A positive relationship is found between Attitude and Purchasing behavior of the consumers ( $R^2=0.509$ ,  $p < .001$ ). In this case, the coefficient of determination for impact of attitude of the consumers (ATT) on purchasing behavior (PB) (Adjusted  $R^2 = 0.503$ ) implies that 50.3 % variance in the purchasing behavior of the consumers can be explained by the variation in the perception of the attitude value of consumers for SMS advertisements. This is supporting our hypothesis 4.

#### 5. Conclusion

Based on the results and finding of the research, it is concluded that in Pakistan, the young customers are the major users of SMS advertising, because for them the perception of using SMS is useful and comfortable for their lives. Thus, by taking into consideration this point of view of young generation; the marketers can use SMS as a target medium to convey their messages. Except irritation, trust and informativeness had a positive influence on the attitude of the consumers that leads towards more purchase behavior of those young customers. However, permission of consumers and reference group play a vital role for the SMS advertisement acceptance and behavior of purchasing those products or services.

#### 6. Future Implementation of the Study

As this study is conducted only on educational sector due to its scope and presence of more youth using cell phones, but its scope can also be broadened by applying this study in other sectors having presence of more youngsters. Moreover, this study is the first one of its nature in Pakistani scenario. This research provides a direction to the decision makers regarding the dimensions of service quality those require high level of attention. Future researchers can use different instruments of research and a bigger sample of respondents to determine their attitude and behavior of purchasing towards SMS advertising.

#### 7. Limitations

There are few limitations of this study, which are stated as follows:

- 1) The scope of this research focused on the data that is pertinent to only Pakistan.
- 2) Time is one of the constraints for current research study.
- 3) *The researchers' knowledge is restricted to only research objectives*

## 8 Contribution and Implications

The theoretical contribution of current study is based on outlining the most important factors that can influence attitude of the customer and behavior of purchasing towards SMS advertising. An unprecedented way of marketing communications is mobile or SMS advertising. Without encouraging the users of mobile to first accept mobile or SMS advertisement, it is difficult to ensure them the processing of mobile advertisement. Although the acceptance and adoption of mobile advertising is on the rise, without an unambiguous understanding of the fundamentals that can affect the responses of customers to advertising professionals, mobile marketing and mobile advertising, will have a very limited power of constantly generating the most effective and positive yields in the long run..

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