

# Understanding the effects of SMS marketing on consumers' attitude and purchase decision: An Empirical study on Bangladesh

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## Abstract

**Purpose:** Telecom firms and businesses use short message marketing to convey information, advertise their products, and establish customer relationships. This study attempts to understand the effects of SMS marketing on consumer attitudes and purchase decisions from a Bangladeshi perspective. This study extends the Ducoffe model of advertising value (entertainment, informativeness, and irritation) by including two constructs: credibility and personalization.

**Research methodology:** A total of 220 mobile phone users were surveyed using non-probability convenience sampling techniques and data were collected across Dhaka City, Bangladesh. The research model was analyzed using structural equation modeling (SEM). The PLS-SEM (Smart PLS 3.3.9) software was used for path modeling. Before conducting the SEM, this study performed a series of tests to assess the reliability and validity of the data.

**Results:** The findings revealed that informativeness and credibility are the most decisive factors influencing consumer attitudes and purchasing decisions.

**Limitations:** This study neglects privacy concerns, social impact, effort anticipation, and monetary incentives that are crucial to customer attitudes and SMS marketing purchase decisions. This study was conducted using data from a single city in Dhaka, Bangladesh, indicating that the findings are limited to that country's scenario.

**Contribution:** The results of this research provide theoretical contributions to the existing research in this field of study and practical implications for marketing professionals, mobile operators, and third-party service providers in developing appropriate strategies and policies for SMS marketing.

**Keywords:** SMS marketing, SMS advertising, Ducoffe model, PLS-SEM, Attitude

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## 1. Introduction

With the advent of technology in the twenty-first century, the use of mobile devices is increasing worldwide. The number of mobile phone users is increasing. SMS is one of the simplest and most cost-effective methods for operators to notify subscribers of their services and other information. Owing to the rapid growth of the telecommunications industry in Bangladesh, most people now use mobile phones as their primary way of talking to each other. This has made SMS marketing a more effective way of reaching people.

SMS marketing functions as a direct marketing channel, comparable to direct selling, direct mailing, and social media marketing, in which advertisers receive quick client feedback (Amirkhanpour, Vrontis, & Thrassou, 2014). In recent years, marketing via short message services (SMS) has increased in popularity and acquired global importance (Henion, 2022). In 2020, global mobile business message traffic hit 2.7 trillion, up 10% from 2019 (Goldman, 2021). Recent marketers have actively leveraged the short messaging service (SMS) of mobile phones to introduce new media into the consumer communication channel structure. It could be launched independently or with other channels for promotional efforts by various marketers.

Through this virtual mobile channel, advertising, promotional offers, and relational marketing themes can be regularly conveyed to potential customers at a low cost. Consumers can view advertising messages from products or service suppliers at any time and location (G. S. Kim, Park, & Oh, 2008). Brands use SMS for various consumer communication applications, including marketing, customer service, and transactional. Telecom carriers and third-party service providers target mobile phone customers with daily advertisements (Hossan, Akter, & Ferdous, 2015). SMS advertising is a frequent component of telecom companies' marketing mix. Numerous firms have recognized the potential of SMS marketing by taking cues from telecom service providers.

SMS advertisements in Bangladesh have potential to be effective. Bangladesh has a population of 167 million (BBS, 2020). According to mobile service providers, Bangladesh has 90 million unique users with 170 million mobile connections as of July 2021 (BRTC, 2021). There are four mobile phone operators: Grameen Phone, Ltd. (GP), and Robi Axiata, Ltd. (Robi), Banglalink Digital Communications, Ltd., and Teletalk Bangladesh, Ltd. (Teletalk), which provides services to a large number of subscribers and maintains good relationships with their customers through different media. Massive growth in the telecom industry has ensured that most people in Bangladesh now use mobile phones as their primary mode of communication, thus expanding the potential for SMS marketing. Since SMS advertising now accounts for an increasing marketing budget for many businesses, determining the effects of SMS marketing has become critical (F. P. Chowdhury, Islam, & Rana, 2016).

### ***1.1. Problem Statement***

This study aims to understand the impact of SMS marketing on consumers' mindsets and their decisions regarding their purchases. The rapid development of the telecommunications sector in Bangladesh has resulted in the vast majority of the population shifting to using mobile phones as their primary means of communication, which has increased the scope of SMS marketing. As one of the fastest-growing marketing tools, SMS can be a highly effective customer communication channel; however, it also faces challenges (Goldman, 2021).

While SMS marketing is becoming popular, it is essential to understand the factors that influence consumers' acceptance or rejection of such ads before making a purchase. Even though "factors affecting customer attitude" have been thoroughly studied in earlier research, there is a general lack of studies examining SMS advertising's influence on purchase intention and behavior. Only a few studies have focused on the effects of SMS marketing on consumer attitudes and purchase decisions, particularly in Bangladesh. Further research is needed to assess whether consumers purchase SMS advertisements.

It is essential to understand the properties of SMS marketing that influence consumer perception and attitude, as an increasing number of businesses, organizations, and governments are expanding their efforts to reach consumers through such Short Message Services. This study will benefit mobile operators and third-party service providers in Bangladesh, who use SMS advertising as part of their marketing communication mix. With this information, marketing managers can better target SMS promotions to segments that are most likely to be malleable to promotions via the medium (Mamun, 2021).

### **1.2. Objectives of the Research**

The main objective of this study was to understand the effects of SMS marketing on consumers. Primarily the study is focused on-

1. To identify the factors influencing consumer attitudes and purchase decisions regarding SMS marketing.
2. To examine the factors in SMS marketing that affect consumers' attitudes and how such attitudes influence their purchase decisions.

### **1.3. Research Questions**

This study aimed to answer the following research questions:

RQ1: What factors influence consumers' attitudes and purchase decisions regarding SMS marketing?

RQ2: How can we examine the factors of SMS marketing that affect consumers' attitudes, and how such attitudes influence their purchase decisions?

### **1.4. Contribution**

This study provides both theoretical and practical contributions. From a theoretical perspective, to bridge the gap in the literature, this study proposes a model incorporating the Ducoffe model of advertising value, along with two other constructs: credibility and personalization. Based on SMS marketing, such constructs will help to better understand the factors affecting consumer perceptions and attitudes toward purchases. It also employs the popular structural equation modeling (SEM) approach to analyze the research model. From a practical perspective, this research will be helpful for different mobile operators, businesses, organizations, and the government to develop appropriate strategies to reach customers and induce them to make purchase decisions effectively. Using this information, marketing managers can better target SMS promotions to segments that are most likely to respond to promotions via the medium.

## **2. Literature review**

### **2.1. SMS Marketing**

Marketing is regarded as the core of every organization because it is essential to identify and meet client needs, wants, and desires. Consequently, marketing acts as a conduit between a business and its clients, enabling the equitable distribution of goods and services (Anoke, 2022). As cellphone usage has surged and technology has advanced, new marketing communication methods are being developed and have proven effective. In modern companies, marketing strategies are central along with product and personnel strategies (Sofi, 2019). While some traditional marketing roles have changed or become redundant, the rise in data science and the creation of new marketing channels, such as digital marketing, have resulted in the emergence of new marketing roles (Mayes, 2019). These new technologies allow marketers to customize customer communication based on their preferences (Al-Meshal & Almotairi, 2013). SMS marketing is one such technology that has been successful. SMS marketing refers to sending a small piece of binary or text data to anyone, indicating a virtual conformity for the appropriate message required by the receiver (Al-Dalahmeh, Al-Shamaileh, Aloudat, & Obeidat, 2018). It has two main goals: (1) to transmit updates, changes, and warning messages to customers and (2) to provide any offers or promotional activities without regard to location boundaries (Al-Dalahmeh et al., 2018). Because of its low cost and high return rate, a survey by Hanke (2010) indicated that SMS marketing is a valuable source for distributing brief marketing promotional messages compared to other mobile technologies, such as mobile applications (apps) or the mobile web. Businesses can now work with mobile operators to send frequent text messages to customers using mobile phone technology. SMS marketing can also be classified as SoLoMo marketing, with the following characteristics: (1) So (Social Media) SMS can be utilized in Social Media, (2) Lo (Local Based) SMS can be sent based on the location of the consumer, and (3) Mo (Mobile) SMS marketing is a type of mobile marketing (Amirkhanpour et al., 2014).

### **2.2. SMS Advertising**

SMS advertising presents exciting marketing opportunities, because it enables one-to-one customer engagement. Customized, time-, and location-sensitive information can benefit customers and

manufacturers (Binkley, 2012). SMS has been in use. However, the marketing applications of SMS have been understood far later. Short-message advertising is booming because of its diversity, low cost, personalization, and high response rates (Peker, 2021).

Mobile phones are becoming increasingly popular worldwide. They allow advertisers unprecedented access to a larger audience than ever. SMS enables users to send brief text messages with minimal graphics capabilities at a reasonable cost. Based on SMS marketing, such constructs will help to better understand the factors affecting consumer perceptions and attitudes toward purchases. The success of SMS advertising relies on information personalized to a target market or, better yet, an individual (Grewal, Bart, Spann, & Zubcsek, 2016).

### ***2.3. Consumer Attitude towards SMS Marketing***

SMS advertising has been around for a long time and is still in use today. Most customers respond positively to SMS marketing when their preferences are considered before receiving a message (Grewal et al., 2016). It also elicited unfavorable responses from confident respondents. Individuals complain about receiving messages inconveniently and are irritated by the intrusion of their privacy through excessive texting. Some replies even reported spam. According to several types of research, permission-based tactics in SMS ads are important (Rau, Zhang, Shang, & Zhou, 2011).

The practical importance of SMS marketing greatly influences a user's readiness to consider SMS ads (Shadkam, 2017). Customers' attitudes toward SMS advertisements are influenced by entertainment (Abdul & Muhammad, 2019). Well-targeted, humorous advertisements are more likely to convince customers to buy branded products (Dickinger, Haghirian, Murphy, & Scharl, 2004). (Krishnamurthy, 2001) discovered that exposing individuals to various interactive competitions can boost their acceptance and knowledge of SMS advertising.

The economic potential of SMS advertisements has affected client decisions to allow SMS marketing (Drossos, Giaglis, Lekakos, Kokkinaki, & Stavradi, 2007). The economic benefits of SMS advertising relate to individuals choosing to begin receiving advertisements on their mobile phones in exchange for a financial incentive that is either promised or expected. Additionally, irritation theory outlines a customer's adverse reactions to undesired messages. Customer annoyance with SMS negatively correlates with sentiments toward SMS advertising (Csikszentmihalyi & Larson, 2014). SMS advertising is valuable if sent with the receiver's consent (Ducoffe, 1996).

### ***2.4. Factors Affecting Consumer's Attitude***

The empirical investigations conducted by Barwise and Strong, who analyzed several types of promotional marketing via SMS on mobile phones, found that good advertising possesses particular qualities about their content (Barwise & Strong, 2002). The authors observed that compelling SMS-based promotional offers were typically brief and to the point (28%), funny or entertaining (26%), relevant to the target audience (20%), eye-catching (13%), and informative regarding rewards and promotions (12%). Several mobile marketing researchers, Durkin (2013) discovered that SMS content is the key driving force for the successful launching of this promotional channel within the existing marketing channel structure. They examined several additional factors that could influence the performance of an SMS-based mobile marketing channel, such as consent, timely communication, privacy, relevancy, and personalization. They concluded that marketers should be cautious when creating SMS contents.

According to the DuCoffe Model, primary variables, such as amusement, informativeness, and annoyance, influence advertising value, which drives mobile advertising attitudes (Ducoffe, 1996). In addition, entertainment directly affects advertising attitude, but according to most research findings, informativeness has a more significant effect on advertising value than entertainment (Y. B. Kim, Yoon, Kim, & Lee, 2012). Based on this model, numerous studies have incorporated external factors to predict the advertising value. Brackett and Carr (Brackett & Carr, 2001) proposed an integrated web advertising attitude model that includes the DuCoffe Model and other advertising attitude models. They examined

the demographic characteristics influencing advertising attitudes and added trust as a primary element of advertising value and perspective.

Tsang, Ho, and Liang (2004) Extended the Brackett and Carr (2001) model by including user approval, trust, and incentive variables to propose a model that may predict user attitudes and intentions toward mobile advertising. According to Tsang et al. (2004), respondents expressed a negative opinion about receiving SMS advertisements without permission TsangTsang et al. (2004) because they thought it was an annoying practice. However, the respondents indicated that they would be receptive to the advertisements if they were sent with consent.

Graham examined the future of wireless advertising and discovered that 60% of respondents were interested in receiving text advertisements via mobile phones. Al-Alak and Alnawas (2010) found that brand awareness of the advertised brand increased by more than 80% among respondents who received an average of six SMS advertisements (Al-alak & Alnawas, 2010). Barwise and Strong (Barwise & Farley, 2005) evaluated SMS as a viable advertising medium for young people. They discovered that 51% of the respondents were delighted with a service that allowed them to receive interest-specific messages. 84% said they would recommend such a service to a friend, and 63% said they responded or took action in response to receiving an SMS advertisement. However, the authors emphasized the relevance of SMS content as a precondition for motivating young people to take action. In addition, the authors demonstrated that consumers prefer mobile advertising to location-sensitive and time-sensitive events.

Research on SMS advertising is abundant, but research on the attitudes of customers towards SMS marketing by mobile operators is scarce. Furthermore, research in this marketing area, particularly in the Bangladeshi market, is limited; a deeper understanding of the research context to unearth new insights and understand customer motivation and feelings is critical. Therefore, there is a considerable need for research to understand the customers' attitudes toward SMS marketing and their purchase decisions in Bangladesh (Khalil, Rasel, Kobra, Noor, & Zayed, 2020).

## **2.5. Theoretical Framework**

This study is designed based on the constructs of the Ducoffe model of advertising value to capture the effects on consumer attitudes after accessing mobile SMS. Ducoffe's model, expanded by Brackett and Carr, was found to help develop this research model. According to Ducoffe (1996), consumer attitudes toward SMS advertising are influenced by informativeness, entertainment, and irritation (Ducoffe, 1996). Brackett and Carr (2001) examined Ducoffe's findings in greater detail and identified two additional variables: credibility and relevant demographics (Brackett & Carr, 2001). This study used credibility as a construct from the expanded model proposed by Brackett and Carr. However, in a broader sense, to capitalize on consumer attitudes and purchase decisions reflecting the specific consumer behavior factors, this study also included another new construct- personalization taken from the analysis of Shareef, Dwivedi, Kumar, and Kumar (2017). These new constructs are yet to be implied, along with Ducoffe's model of advertising value. This additional construct will help further analyze consumer attitudes and purchase intention to bridge the gap in the literature; Advertising value is defined as consumers' perceptions of utility and the relative worth of advertising variables (Ducoffe, 1996). The advertising value model is the most commonly used theory for explaining user perceptions and attitudes toward advertising. Advertising value is a customer's subjective evaluation of an advertisement, which determines its weight and value. According to Ducoffe (1996), informativeness, entertainment, and irritation are antecedents of advertising value and are positively related to attitudes toward web advertising.

## **2.6. Research Hypothesis**

### **2.6.1. Informativeness**

Informativeness has been defined in several ways. As per Ducoffe (1996), informativeness is "advertising's ability to inform consumers about product alternatives for the most satisfying purchases." Informativeness is the ability of advertisements to provide consumers with current, relevant, and

conveniently accessible information (Altuna & Konuk, 2009). Because informativeness depends on matching the mobile service's content and the subscriber's information needs, ensuring accuracy, meaningfulness, and timeliness improves information quality perception. Advertising promotes a product or service by highlighting its unique qualities (Salem, 2016). Informative advertising delivers necessary and practical information and creates valuable offers (Daugherty, Logan, Chu, & Huang, 2008). Tsang et al. (2004) concluded that perceived informativeness influences consumers' opinions toward mobile advertising in general.

*H1: There is a positive relationship between perceived informativeness and consumer attitude.*

### 2.6.2 Entertainment

According to Ducoffe (1996), entertainment is "the ability to fulfill an audience's needs for escapism, diversion, aesthetic enjoyment, or emotional enjoyment." Entertainment advertising conveys positive social messages to consumers (Shavitt, Lowrey, & Haefner, 1998). Grabbing consumers' attention on social media is difficult because they view hundreds of messages daily. Advertising must be brief and exciting to attract consumers' attention (Haq, 2009). Mobile marketing depends crucially on entertainment (Katterbach, 2002). Another study discovered that mobile advertising's entertainment value strongly influenced consumers' views toward advertising (Ünal, Ercis, & Keser, 2011). According to recent research, entertainment positively affects attitude and is the most crucial factor impacting customers' opinions toward SMS advertising (Zabadi, Shura, & Elsayed, 2012).

*H2: There is a positive relationship between perceived entertainment value and consumer attitudes.*

### 2.6.3 Irritation

An advertisement is referred to as irritating when it generates consumer annoyance, discontent, and intolerance (Aaker & Bruzzone, 1985). Ducoffe (1996) defines irritation as "marketing strategies that are bothersome or against the consumer attitude or may offend consumer dignity and are perceived negatively by customers or irritate consumers." The number of messages, frequency of ads, content, and timing affect perceived irritation (Zabadi et al., 2012). Irritability affects SMS advertising, while information and entertainment help (Soroa-Koury & Yang, 2010). Moreover, psychological reactance, a theory of freedom and control, suggests that, when people realize that their freedom is endangered or lost, they react adversely (Wong, 2010). Mobile advertising can confuse people and invade privacy (Stewart & Pavlou, 2002). According to Tsang et al. (2004) and other experts, the perceived discomfort of mobile advertising affects users' purchase decisions. The buying decision is the consumer's action after conducting some steps until the last step is buying a thing or service from a company (Miswanto Muslim, 2019). Customers' opinions of marketed products will degrade if they find commercials annoying (Wong, 2010).

*H3: There is a negative relationship between irritation and consumer attitude.*

*H4: There is a negative relationship between irritation and purchase decision.*

### 2.6.4 Credibility

In advertising, credibility is the extent to which consumers believe that they say their brands (MacKenzie & Lutz, 1989). Credibility is a consumer's belief that an advertisement's brand claims are authentic and believable and that the source has the knowledge and skills to provide accurate and unbiased information (Salem, 2016). SMS ad credibility and customer attitudes were positively correlated (N. Kim & Yu, 2015). F. P. Chowdhury et al. (2016) define credibility as customers' belief in a company's advertisement's accuracy and authenticity. Trust is associated with people, businesses, products and brands (Muhammad, 2020). The consumer-brand relationship is heavily influenced by trust, and it is a common finding that consumers generally do not trust advertising because of false marketing efforts (Rosenbaum-Elliott & Percy, 2021). Risk should be minimized by obtaining and retaining consumer trust. Customers also use credibility before using information based on their experience with an advertisement to decide whether a service or product is trustworthy (Christensen, 2013).

*H5: There is a positive relationship between the credibility of SMS advertising and consumer attitudes.*

*H6: There is a positive relationship between the credibility of SMS advertising and consumer purchase decisions.*

### 2.6.5. Personalization

Researchers investigating consumers' opinions of SMS commercials have long sought to show that relevance, such as focusing on specific needs, is a crucial predictor of a positive response (Shareef et al., 2017). The personalization of mobile marketing enables marketers to approach potential customers in a highly customized manner, thereby strengthening their relationships with consumers (Robins, 2003). Customers frequently seek personalization and demand it from the companies they conduct business (Mayes, 2019). If the message content matches the consumer's needs, they perceive value and usefulness (Liao, Li, & Xu, 2005). With personalization, the number of messages sent to customers decreases, and users would no longer receive many unnecessary notifications (Ho & Kwok, 2002). Marketing strategies based on an understanding of client characteristics, histories, and requirements are critical (Rao & Minakakis, 2003).

*H7: There is a positive relationship between personalization and consumer attitudes toward SMS commercials based on their content.*

### 2.6.6. Attitude and Purchase Decision

Attitude refers to a person's ideas, feelings, and views about something or someone and how they act or react to concepts, things, people, or events (H. K. Chowdhury, Parvin, Weitenberner, & Becker, 2006). There is evidence that customers dislike mobile advertising unless they have consented to it, and that there is a strong connection between consumer feelings and consumer behavior (Tsang et al., 2004). In the field of SMS advertising, attitude refers to a consumer's overall enduring evaluations of a mobile media advertising message. By contrast, intention can be defined as a course of action that one intends to follow or an aim that guides action (M.-J. Kim & Han, 2015). Previous research has found that behavioral outcomes can be harmful, such as ignoring an advertisement and deleting it Purch before or after reading it, or positive, such as responding to the message, forwarding it to friends, or making a purchase or subscribing to it (Salem, 2016). Consumer purchasing behavior refers to the purchase decision of final consumers, people, and households who purchase goods and services for personal use (Kotler, 2003)." Consumers' desire for a product or brand creates a reflection that may restrain them ((Ather Yeasir Fahim, 2022). Customers integrate all of their product information to evaluate two or more behaviors and choose one. This vital process directly affects consumer decisions.

*H8: There is a positive relationship between consumers' attitudes and purchase decisions.*

Consumers' definite perception of SMS marketing is more likely to lead to purchase decisions.

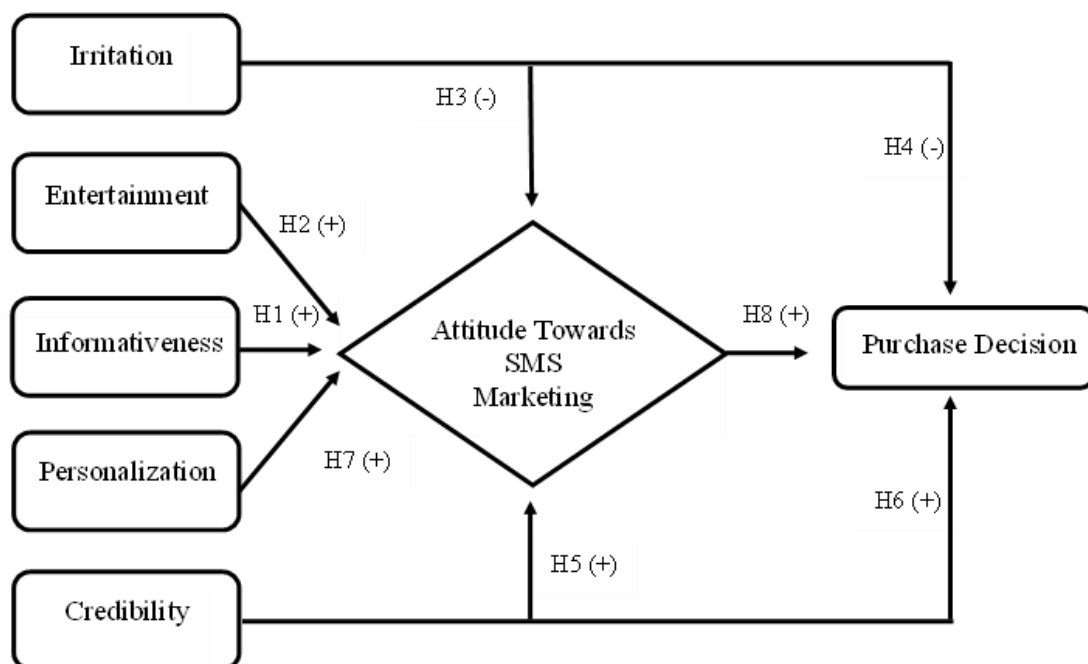


Figure 1. Proposed research model  
Source: Created by MS Word

### 3. Research methodology

#### 3.1. Research Type

A quantitative research method was used to analyze the effects of SMS marketing on consumers' attitudes and purchase decisions and to identify the factors influencing their attitudes. This study followed a descriptive method, the most logical and relevant way to describe the situation, and answer pertinent questions about factors influencing Bangladeshi consumers' attitudes and buying behaviors regarding SMS advertising. The research was conducted based on two data sources: primary and secondary sources and a review of relevant literature. A structured questionnaire collected most of the preliminary data using an online Google form and an in-person survey. Secondary data were gathered by reviewing journal articles, books, websites, and research papers in the literature.

#### 3.2. Survey Development

A survey was conducted using a structured questionnaire to collect most primary data. The survey was conducted in two parts. In the first part, there were four questions, including the respondent's demographics, such as age, gender, educational qualifications, and number of SMS received on a particular day. The next part of the survey contained 17 questions regarding the different constructs of the proposed model. The questionnaire is provided at the end of the paper in the appendix. A five-point Likert scale was used to collect the data. The measurement instruments were derived from previously published studies to improve the content validity. Overall responses were gathered based on three constructs of the Ducoffe model (Entertainment, Informativeness, and Irritation), two constructs (Credibility and Personalization) used in the literature review of other research, and consumers' attitudes and purchase decisions. Table 1 presents a table consisting of all constructs and their relevant items.

Table 1. Items of Construct

Construct	Item	Sources
Entertainment	EN1: I feel that receiving an SMS advertisement is pleasant and entertaining.	Salem (2016), Murillo (2017), Aktan, Aydogan, Aysuna, and Cad (2016)
	EN2. SMS advertisement makes me satisfied.	
Informativeness	IN1: In my opinion, it is a good source of timely information.	Salem (2016), Murillo (2017), Aktan et al. (2016)
	IN2: It supplies relevant product or service information.	
	IN3: I believe SMS advertising is helpful.	
Irritation	IR1: I find SMS ads and their contents irritating and annoying.	Salem (2016), Murillo (2017)
	IR2: When I'm using a mobile phone, it disturbs me.	
	IR3: SMS advertisements are excessive and uncontrollable.	
Credibility	CR1: SMS ads are trustworthy and convincing to me.	Salem (2016), Murillo (2017), Aktan et al. (2016)
	CR2: SMS marketing provides sufficient evidence to believe.	
Personalization	PR1: The content of SMS ads is relevant to my personal needs.	Chellappa and Sin (2005)



	PR2: The language used in SMS is tailored to my specific needs.	
Attitude towards SMS advertising	ATT1: Overall, I appreciate SMS marketing.	Salem (2016)
	ATT2: SMS marketing is an excellent way to get product ideas.	
Purchase Decision	PD1: Generally, I make my purchasing decisions based on SMS advertising.	Salem (2016), <a href="#">Schulze, Schöler, and Skiera (2015)</a>
	PD2: It influences me to purchase a product I have never tried.	
	PD3: It has induced me to purchase more of the same product.	

Source: Created by MS Word

### 3.3. Data Collection

This study included 220 mobile phone subscribers who used different mobile services in Bangladesh. A convenience sample of consumers was chosen from a list of significant mobile provider consumers for this study. Convenient sampling is a type of non-probability sampling in which a sample is obtained from a portion of the population that is close to the hand. The study's sample population included people from the urban areas of Dhaka, the capital of Bangladesh. Dhaka is Bangladesh's cultural, economic, and political center, representing people from all corners of the country. The sample included people between the ages of 15 and 55 years who had mobile phones and received SMS advertising from four telecommunication operators, the government, and other commercial companies.

Table 2. Demographic data of the respondents

Gender			Age		
	Frequency	Percentage		Frequency	Percentage
Male	104	53	15-25	97	44
Female	116	47	25-35	89	40
<b>Academic Level</b>			35-45	17	8
			45-55	13	6
Graduate/ Postgraduate	144	65	Above 55	4	2
Under Graduate	47	21	<b>Number of SMS received on a single day</b>		
HSC/ A Level	8	4		Frequency	Percentage
SSC/ O Level	11	5	1-3	26	12
Below SSC	10	5	4-6	87	39
			7-10	107	49

Source: Created by MS Word

### 3.4. Data analysis

The software versions SPSS 23.0 and SmartPLS 3.3.9 were used to analyze the data. SEM was used to examine the constructs' reliability and validity and test the suggested model and hypotheses (Chin, 1998). The SEM technique was chosen because it allows researchers to examine numerous interactions simultaneously. By contrast, other statistical methods (such as multiple regression or multivariate analysis of variance) are limited to examining the relationships between each construct individually (H. K. Chowdhury et al., 2006).

### 3.5. Analysis

#### 3.5.1. Common method bias and multi-collinearity test

The Harman's single-factor test was used to check for common method bias (CMB). Principal axis factor analysis was also used to determine the number of critical factors for describing variance (PAF) (Harman & Harman, 1976). The findings revealed that a single construct accounted for 33.78% of the total variance, which was significantly lower than 50% (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The CMB was also evaluated using the variance inflation factor (VIF) values of the constructs given by the comprehensive collinearity test (Table 3). These numbers are lower than the recommended 3.3 (Kock, 2015). Consequently, CMB was not identified as a threat in this study. Furthermore, this study had no multicollinearity problem based on the VIF values, which were considerably below the threshold of 10 (O'Brien, 2007).

Table 3. Collinearity Statistics (VIF)

Constructs	ATT	CR	EN	IN	IR	PD	PR
ATT						1.315	
CR	1.500					1.266	
EN	1.557						
IN	1.520						
IR	1.344					1.121	
PD							
PR	1.656						

Note: ATT- Attitude, CR- Credibility, EN- Entertainment, IN- Informativeness, IR- Irritation, PD- Purchase Decision, PR- Personalization

Source: Created by PLS-SEM

#### 3.5.2. Measurement Model

The measurement model was derived using the study instrument's reliability, convergent validity, and discriminant validity (Joseph F Hair, Black, Babin, Anderson, & Tatham, 2006). The internal reliability of the constructs was assessed using Cronbach's alpha, Dijkstra–Henseler's rho (rA), and composite reliability. The loadings of the indicators were used to determine their reliabilities (Table 4). Similarly, average variance extracted (AVE) values were used to determine convergent validity. The reliability coefficients in this study were higher than the proposed standard of 0.70 validity (Joseph F Hair et al., 2006; Henseler, Hubona, & Ray, 2016), and the AVE values for all variables were more significant than 0.50 (Fornell & Larcker, 1981), as shown in Table 5.

The item loading values (>0.70) indicated that a more significant proportion of variation was shared between an item and its construct (Joe F Hair, Sarstedt, Ringle, & Mena, 2012). This study found that the internal reliability and convergent validity were acceptable. In addition, the square roots of all AVE values were more significant than the equivalent cross-correlation, and each item was heavily loaded on its related construct (Table 6). These demonstrated the constructs' discriminant validity (Henseler, Ringle, & Sarstedt, 2015).

Table 4. Outer Loadings

Construct	Items	ATT	CR	EN	IN	IR	PD	PR
Attitude	ATT1	0.921						

	<b>ATT2</b>	<b>0.867</b>			
<b>Credibility</b>	<b>CR1</b>	<b>0.900</b>			
	<b>CR2</b>	<b>0.915</b>			
<b>Entertainment</b>	<b>EN1</b>	<b>0.938</b>			
	<b>EN2</b>	<b>0.927</b>			
<b>Information</b>	<b>IN1</b>	<b>0.843</b>			
	<b>IN2</b>	<b>0.827</b>			
	<b>IN3</b>	<b>0.891</b>			
<b>Irritation</b>	<b>IR1</b>		<b>0.895</b>		
	<b>IR2</b>		<b>0.846</b>		
	<b>IR3</b>		<b>0.798</b>		
<b>Purchase Decision</b>	<b>PD1</b>			<b>0.854</b>	
	<b>PD2</b>			<b>0.891</b>	
	<b>PD3</b>			<b>0.864</b>	
<b>Personalization</b>	<b>PR1</b>				<b>0.912</b>
	<b>PR2</b>				<b>0.872</b>

Source: Created by PLS-SEM

Table 5. Measurement Model

<b>Constructs</b>	<b>Items</b>	<b>Cronbach's Alpha</b>	<b>rho_A</b>	<b>CR</b>	<b>AVE</b>
<b>Attitude</b>	<b>ATT</b>	<b>0.753</b>	<b>0.784</b>	<b>0.889</b>	<b>0.800</b>
<b>Credibility</b>	<b>CR</b>	<b>0.787</b>	<b>0.791</b>	<b>0.904</b>	<b>0.824</b>
<b>Entertainment</b>	<b>EN</b>	<b>0.851</b>	<b>0.855</b>	<b>0.931</b>	<b>0.870</b>
<b>Information</b>	<b>IN</b>	<b>0.815</b>	<b>0.824</b>	<b>0.890</b>	<b>0.730</b>
<b>Irritation</b>	<b>IR</b>	<b>0.807</b>	<b>0.857</b>	<b>0.884</b>	<b>0.718</b>
<b>Purchase Decision</b>	<b>PD</b>	<b>0.838</b>	<b>0.839</b>	<b>0.903</b>	<b>0.756</b>
<b>Personalization</b>	<b>PR</b>	<b>0.745</b>	<b>0.761</b>	<b>0.886</b>	<b>0.796</b>

Source: Created by PLS-SEM

Table 6. Correlation matrix and the square root of AVE

<b>Constructs</b>	<b>ATT</b>	<b>CR</b>	<b>EN</b>	<b>IN</b>	<b>IR</b>	<b>PD</b>	<b>PR</b>
<b>ATT</b>	<b>0.894</b>						
<b>CR</b>	<b>0.444</b>	<b>0.908</b>					
<b>EN</b>	<b>0.406</b>	<b>0.325</b>	<b>0.933</b>				

<b>IN</b>	<b>0.571</b>	<b>0.439</b>	<b>0.470</b>	<b>0.854</b>		
<b>IR</b>	<b>-0.306</b>	<b>-0.242</b>	<b>-0.409</b>	<b>-0.132</b>	<b>0.847</b>	
<b>PD</b>	<b>0.488</b>	<b>0.503</b>	<b>0.375</b>	<b>0.329</b>	<b>-0.437</b>	<b>0.869</b>
<b>PR</b>	<b>0.405</b>	<b>0.517</b>	<b>0.414</b>	<b>0.403</b>	<b>-0.406</b>	<b>0.634 0.892</b>

Note: ATT- Attitude, CR- Credibility, EN- Entertainment, IN- Informativeness, IR- Irritation, PD- Purchase Decision, PR- Personalization

Source: Created by PLS-SEM

### 3.5.3. Structural model

After establishing the appropriate psychometric properties of the measurement model, the structural model was evaluated. The significance level of the path coefficients was used to evaluate the validity of the structural model (Joe F Hair et al., 2012). Using the bootstrap approach (5000 resamples), the significance levels of the paths were determined (Table 7). Table 5 presents the findings of the hypotheses. Hypotheses H1 ( $p < 0.01$ ), H3 ( $p < 0.01$ ), H4 ( $p < 0.01$ ), H5 ( $p < 0.01$ ), H6 ( $p < 0.01$ ), and H8 ( $p < 0.01$ ) are statistically significant. In contrast, the paths for H2 ( $p > 0.05$ ) and H7 ( $p > 0.05$ ) were not supported. These results reveal that information, irritation, and credibility significantly affect attitudes. Therefore, the impact of these constructs was significant. Again, irritation and credibility directly affect consumers' purchase decisions regarding SMS marketing. Except for entertainment and personalization, all constructs of this study significantly influence consumers' attitudes toward SMS marketing. Attitude, irritation, and credibility directly influence purchase decisions.

Table 7. Structural Model

<b>Hypotheses</b>	<b>Path</b>	<b>Coefficient (b)</b>	<b>t- statistics</b>	<b>p-values</b>	<b>Decision</b>
<b>H1</b>	<b>IN -&gt; ATT</b>	<b>0.424</b>	<b>6.399</b>	<b>0.000</b>	<b>Supported</b>
<b>H2</b>	<b>EN -&gt; ATT</b>	<b>0.063</b>	<b>0.806</b>	<b>0.420</b>	<b>Not Supported</b>
<b>H3</b>	<b>IR -&gt; ATT</b>	<b>-0.161</b>	<b>2.598</b>	<b>0.009</b>	<b>Supported</b>
<b>H4</b>	<b>IR -&gt; PD</b>	<b>-0.280</b>	<b>5.071</b>	<b>0.000</b>	<b>Supported</b>
<b>H5</b>	<b>CR -&gt; ATT</b>	<b>0.170</b>	<b>2.071</b>	<b>0.038</b>	<b>Supported</b>
<b>H6</b>	<b>CR -&gt; PD</b>	<b>0.319</b>	<b>5.353</b>	<b>0.000</b>	<b>Supported</b>
<b>H7</b>	<b>PR -&gt; ATT</b>	<b>0.055</b>	<b>0.800</b>	<b>0.424</b>	<b>Not Supported</b>
<b>H8</b>	<b>ATT -&gt; PD</b>	<b>0.260</b>	<b>4.281</b>	<b>0.000</b>	<b>Supported</b>

Note: ATT- Attitude, CR- Credibility, EN- Entertainment, IN- Informativeness, IR- Irritation, PD- Purchase Decision, PR- Personalization

Source: Created by PLS-SEM

## 4. Results and discussions

### 4.1. Discussion

This study investigates the effects of SMS marketing on consumer attitudes and purchase decisions. This study examined the influence of five factors on a client's attitude and transaction decisions based on short message advertising. The findings of this empirical study show that all formulated hypotheses

were in the same direction, except for two. This study confirms that credibility, informativeness, and irritation significantly influence attitudes toward purchase decisions. In contrast, entertainment and personalization were found to indirectly affect attitudes. Simultaneously, irritation and credibility directly influence consumers' buying decisions and attitudes. Individual attitudes were measured by different factors related to SMS marketing. According to the statistical data presented in the preceding section, the research model proposed in this study attained an acceptable degree of predictive power for the dependent variables (attitude and purchase decision). Furthermore, all measurement parameters and structural models were within the prescribed limits. The following are the most critical conclusions drawn from the study after a comprehensive, detailed, and statistical analysis of the collected data.

The data showed that the informativeness of SMS content was the most significant factor affecting people's mindsets and attitudes. There was a robust statistical relationship between informativeness and attitude. Informativeness positively affects attitude because SMS marketing is a good source of timely information and provides information on consumer needs. In addition, it can help consumers keep products up-to-date. Consumers who believed that SMS advertising messages were helpful and relevant to their interests expressed more positive opinions. The ability of SMS to deliver beneficial information or services enhances user perceptions of its usefulness. One key objective of advertising is to create awareness and illustrate the uniqueness of an advertised product or service. Consumers who are informed about this tend to accept SMS messages positively. Consequently, consumers were convinced that SMS advertising messages were useful in expressing the desire to buy the advertised products. This finding is supported by existing research (Al-alak & Alnawas, 2010).

Likewise, a user's attitude and intent to purchase are influenced by credibility, which is another crucial predictor. Credibility was the second most influential factor in cases affecting purchase decisions. This has a significant and robust influence on consumers' purchase intentions. The data analysis shows that credibility also has a favorable impact on attitudes. This explains why perceived credibility and trust have a more significant effect on the choice to buy than on a person's attitude. Consumers often use SMS advertising as a reference for purchasing when they are impressed with SMS advertisements. According to this study, purchase intention and philosophy tend to be influenced when consumers believe SMS ads are trustworthy and convincing. They also examine whether such marketing provides sufficient evidence to believe. Credibility is built on the quality of the current information and simplicity of the message content. This result can be strengthened by other research that has proven that credibility significantly impacts attitude and directly affects purchase intention (Saleem & Mustafa, 2020).

The findings show that irritation directly affects attitudes and purchase decisions. Irritation hurts consumers' attitudes and directly affects their willingness to purchase. The initial analysis revealed that purchase decisions were more affected by annoyance than by attitude. Irritation has a significant and robust influence on customers' purchase decisions and a moderating effect on their attitudes. According to this study, most consumers find short messages annoying. Frequently, they are irritating, offensive, excessive, or out of control. This advertising method mainly invades the privacy of individuals. In addition, customers frequently perceive SMS marketing content as highly unpleasant. Owing to the excessive number of messages sent regularly, they also feel annoyed while using mobile phones. SMS advertising should be specific and short to avoid or reduce discomfort, and consumer permission should be obtained in advance. This outcome was consistent with the findings of (Zabadi et al., 2012).

The hypothesized relationship between entertainment and client attitudes was hostile and insignificant. According to the survey, consumers do not perceive entertainment as a significant component of SMS marketing. This finding shows that the residents of Bangladesh prefer other factors, such as relevant information, reliability, prior permission, etc., in deciding to purchase an advertised product rather than the entertainment of message content. However, consistent with this finding, another study concluded that entertainment did not significantly affect attitudes (Christensen, 2013). Therefore, it is possible to assert that entertainment is culture dependent, although other variables may also play a role. Thus, in the case of SMS marketing, consumers are less concerned with entertainment in Bangladesh and other nations such as Denmark.

This study found no positive relationship between personalization of SMS and the client's attitude. Typically, consumers recognize value and usefulness if the content of the message is designed to be compatible with their specific requirements. This result contradicts the claims of Shareef et al. (2017), in which personalization showed a direct relationship in pursuing consumers' attention to SMS commercials. In this study, the indirect relationship demonstrated that consumers frequently care less about SMS content specifications. It was found that short message content and language had minor effects on a client's attitude. According to the results of this study, the relationship between personalization and behavioral attitude was insignificant, which means that residents in Bangladesh seem to be least interested in customization in SMS content, and they can put money into it even though the contents are not coherent with their specific requirements.

Finally, a positive link exists between consumer attitudes and purchase decisions. Consumers who have a strong opinion about SMS marketing are more likely to make purchase choices. This construct had a moderate effect on purchase decisions, with an average significance level of . Respondents were shown to have the intention to accept SMS advertising and to keep SMS advertising for future purchase references, as indicated by the findings. Accordingly, the results showed that respondents mostly make purchase decisions based on their attitudes toward SMS marketing. In addition, a positive attitude has induced respondents to buy a product that they have never tried before and purchase more of it. The findings confirmed that residents' acceptance of SMS marketing could be improved by increasing information quality, making them more authentic and reliable, and reducing unnecessary content. However, a positive consumer attitude leads to both purchase and repeat purchases. Salem (2016) and Schulze et al. (2015) confirmed similar findings in their research on consumer attitudes, intentions, and behaviors toward SMS advertisements.

#### ***4.2. Theoretical Implication***

This study provides academics and researchers with numerous insights. First, to understand the effects of SMS marketing on consumers' attitudes and purchase decisions, it extends the literature by incorporating two more constructs into Ducoffe's model: credibility and personalization. The outcomes of this study provide insights for SMS marketing research by analyzing different aspects that influence an individual's attitude and decision to purchase. Prior studies have examined a variety of antecedents that influence client attitudes, including informativeness and amusement (N. Kim & Yu, 2015), credibility (N. Kim & Yu, 2015), and personalization (Liao et al., 2005). However, consumers' attitudes toward purchasing decisions have received little attention. By incorporating Ducoffe's model and two potential constructs, this study identifies the factors that affect consumer perception, behavior, and purchase intention based on SMS marketing. Applying two additional constructs to Ducoffe's model also addresses the limitations of several studies on attitudes toward SMS marketing.

Second, structural equation modeling (SEM) was used to examine the research model. SEM was used to detect the significant factors influencing customers' attitudes and purchase intentions. It was used to comprehend the relationship between the independent and dependent constructs. Structural equation modeling was used to assess the validity and reliability of the collected data. Third, from a theoretical perspective, this study adds more knowledge regarding SMS advertising, providing further research scope for researchers and practitioners.

#### ***4.3. Practical Implication***

The findings have practical implications for SMS marketing professionals regarding the effective use of SMS advertising. First, it provides insights into the practical aspects of SMS advertising. This study's outcome will assist Bangladeshi mobile service providers in developing appropriate strategies and policies to entice more individuals to make purchases affected by SMS. To generate favorable views about their advertising, mobile marketers must improve the sophistication of advertising messages to make them more meaningful and helpful. To achieve this, marketers must use informative and compelling content to reduce unpleasant components.

The second implication relates to targeted marketing on mobile platforms. This study demonstrates that consumer responses to SMS advertising must be more consistent, and marketers must sincerely send standard advertising messages. To maximize the efficacy of mobile advertising, marketers must categorize consumers based on their motivational orientation and send messages tailored to their requirements. While designing the content of the promotional offer through SMS marketing, marketers should differentiate between consumers based on their self-identity and needs. Suppose that the content design in terms of statement, language, phrase, presentation, organization, and structure is incompatible with the target audience's requirements. In such cases, they are unable to reach customers and make customers read their SMS. Therefore, marketers must segment consumers based on their message content.

Finally, when designing messages, marketers must consider consumers' affective and hedonic motivations. According to the findings, sending several messages to consumers without considering their characteristics, the sender's credibility, or their specific needs may hurt their attitude.

#### ***4.4. Practical Implications for Asian Business***

Bangladesh is an Asian nation with 160 million people, making it the fifth-most populated nation. The cultures of Bangladesh and India, the world's second most populous nations, are highly similar. Asians have similar feelings and perspectives. Therefore, the findings of this study can be applied to the Asian environment. Bangladesh has four major telecommunication companies. One of them is Robi Axiata Limited, which has the second-most subscribers in the country. Robi is currently owned by two Asian companies, Axiata and Bharti Airtel. Axiata also owns a large number of other Asian telecom companies. Thus, they can use what this study found when formulating policies.

The findings show that respondents planned to accept SMS advertising and keep it as a reference for future purchases. Therefore, Asian businesses can use SMS advertising as long as the people they want to access are willing to receive it. The results showed that residents are more likely to accept SMS marketing if the quality of the information is improved; this seems more accurate and reliable. There was less content that was not required. Therefore, if Asian businesses want to make more profit, they should send beneficial SMS messages. This could cause more individuals to want to return.

Many new businesses are starting in Asia because the information technology (IT) industry is rapidly changing. Apps for delivering food, buying tickets, and sharing rides are online. However, they advertise their businesses using text messages, social media, and TV. These types of companies can use the results of this study to map SMS marketing. SMS marketing is a cost-effective advertising method; as this study shows, people still accept SMS marketing, but SMS should be trustworthy and full of information. Thus, businesses can use SMS marketing because it costs less than advertising on social media, TV, or radio. Moreover, SMS is sent to people's phones, which is a benefit. As a result, many people view the message. People in Asian countries such as Japan, the Philippines, Thailand, and Malaysia spend more time on their phones than people in other countries (Howarth, 2023). Thus, SMS marketing is a better choice in Asia.

This study shows that consumers sometimes respond differently to SMS advertising; therefore, marketers need to send standard advertising messages. To get the most out of mobile advertising, marketers need to categorize people into groups based on what motivates them and send them messages that fit their needs. Businesses in Asia can use this finding to help determine how to market themselves. There are some similarities in emotions and attitudes among Asian people, so that customers can be categorized and different messages can be used for each group. This categorized strategy can make marketing plans more likely to work.

## **5. Conclusion**

### ***5.1. Conclusion***

SMS marketing is one of the most cost-effective promotional platforms for modern business. In Bangladesh, telecom operators and e-commerce businesses have adopted SMS marketing. This study

explored Bangladeshi consumers' attitudes toward SMS marketing. The study's virtue is that it attempted to cover some factors influencing consumers' attitudes and purchase decisions and checked the apparent effect of entertainment, irritation, informativeness, personalization, and credibility on customer attitude, among which informativeness and credibility substantially affected attitude and purchase decisions. Furthermore, the findings indicated that entertainment and personalization did not influence consumer behavior. This indicates that Bangladeshi residents are not influenced by customized SMS content or perceived entertainment when purchasing. It was also found that consumer attitudes and behaviors were negatively affected by irritation caused by excessive SMS. Consumers purchase through promotion when they receive timely, helpful, trustworthy, convincing, and relevant information. This research will benefit marketers and advertising professionals in this area, with a greater ability to create positive and effective SMS marketing campaigns.

### **5.2. Limitation and Future Research Direction**

This study has several implications for researchers, managers, and practitioners. Nonetheless, these limitations could lead to future research agendas. First, while this study considers the critical constructions connected to consumer attitudes and purchase decisions regarding SMS marketing, it leaves out several vital constructs such as privacy concern, social influence, effort expectancy, and monetary benefits. This can influence customer attitudes and behaviors. Second, this study used data from a single city in Dhaka, Bangladesh, indicating that the findings are limited to that country's scenario. Cross-country longitudinal data could be used in future studies. Finally, the SEM technique used in this study was linear. More profound research using a mixed analytical approach that combines linear and nonlinear methods will provide more insight into consumer attitudes and buying decisions.

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