



# Can SMS Marketing Enhance Mobile App Engagement?

## Examining the Mediating Role of Attitude Toward SMS in Driving Digital Engagement in Telco Industry

Sugeeth Patabendige  
 <https://orcid.org/0009-0002-4242-8200>  
*University of Kelaniya, Sri Lanka*

Dhuvveeshan Muthusamy  
 <https://orcid.org/0009-0003-1664-4206>  
*University of Kelaniya, Sri Lanka*

W. M. Tharushika Dulanjali Herath  
*University of Kelaniya, Sri Lanka*  
**Received:** April 27th, 2025 | **Accepted:** October 22nd, 2025

### ABSTRACT

The rapid advancement of mobile technology has revolutionised both communication and marketing strategies. However, while the use of mobile apps has exponentially grown, the use of traditional marketing tools such as push SMS messaging to promote digital engagement is pervasive within the telecommunication industry. This study empirically investigates this paradox, i.e., the use of traditional SMS marketing by telecommunication service providers in engaging with Mobile app users. The study also explores the mediating role of attitude towards SMS, exploring how perceptions of traditional marketing tools such as SMS notices influence more digitally savvy consumer engagement. Employing a positivist research approach, the study solicits evidence from 379 participants who extensively use mobile apps. The data collected was analysed using regression and correlation analysis. The findings of the study highlight a positive relationship between SMS marketing and digital engagement within the telecommunication industry. Moreover, the findings also suggest that this use of traditional marketing tools in advanced technological settings is heavily influenced by the attitudes of consumers towards such traditional marketing tools. These findings shed better light on the paradoxical relationship between modern technological developments and the use of traditional marketing tools to promote their usage, thus giving better insights to both academics and practitioners.

### KEYWORDS

Short Message Service (SMS) Marketing, Customer Engagement in Digital Mobile Apps, Mobile Telecommunication Industry, Attitude Towards SMS

### INTRODUCTION

Digital transformation has fundamentally reshaped industries across the globe, fostering innovation, agility, and operational efficiency. In the telecommunications sector, this transformation has been especially significant, enabling organizations to adapt to rapidly evolving consumer behavior

DOI: 10.4018/IJESMA.392619

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

and technological advancements (Kumar Roy, 2023). As part of this shift, mobile telecommunications have adopted various marketing strategies—both modern and traditional to enhance customer engagement (Ishaq & Ajibesin, 2022). Among these, Short Message Service (SMS) marketing continues to be used as a direct marketing tool, despite the emergence of more advanced digital channels such as social media platforms and mobile applications (Azhar & Persaud, 2012). While SMS marketing is valued for its direct reach and accessibility, its role in driving engagement within digital mobile apps remains underexplored (Nayma, Rahman, & Ratul, 2023).

The continued reliance on SMS marketing in the telecommunication industry presents a paradox: although digital platforms such as mobile apps have become mainstream for customer interaction, service providers persist in using traditional SMS campaigns to promote digital engagement. This raises important questions regarding the effectiveness and strategic rationale behind SMS marketing in an increasingly digital ecosystem. Previous studies have identified limitations associated with SMS marketing, including untargeted messaging, lack of personalization, and high mobile app abandonment rates (Amin, et al., 2019). Moreover, consumer responses to SMS campaigns are shaped by factors such as message relevance, cultural preferences, and perceived data costs (Varnali, 2012). While the literature has explored consumer attitudes toward SMS and their behavioral responses (Jayasuriya & Knight, 2015), limited empirical evidence exists on how these attitudes mediate the relationship between SMS marketing and mobile app engagement (Tian, et al., 2021).

Despite the proliferation of digital marketing channels, the intersection of traditional SMS marketing and mobile app engagement remains insufficiently studied especially in terms of how consumer attitudes toward SMS shape this relationship. Much of the existing literature has examined either the technical or psychological aspects of SMS marketing (e.g., timing, personalization, and sentiment) or focused on user experience in mobile applications (Varnali, 2012; Amin, et al., 2019). However, few studies have bridged these two streams to investigate whether traditional SMS campaigns still hold relevance in encouraging digital app usage, and if so, under what conditions—particularly with respect to consumer perceptions (Aydin & Karamehmet, 2017). Addressing this gap is essential for both scholars and practitioners seeking to optimize traditional tools in digital-first environments.

Globally, the telecommunication industry has experienced exponential growth due to technological innovation and widespread mobile adoption. According to GSMA (2024), mobile connections have surpassed 8 billion worldwide, and mobile applications have emerged as key platforms for service delivery and customer interaction. While telecommunication providers around the world increasingly embrace internet-based marketing strategies, many still incorporate SMS campaigns as part of their communication mix. The Sri Lankan market presents a compelling case in this context. Despite its relatively small population (TRC, 2025), Sri Lanka has over 32 million mobile connections and a high number of competing telecommunication service providers (GSMA, 2024). This saturated, competitive landscape creates a unique environment where traditional SMS marketing continues to be used aggressively to promote digital mobile app engagement. As such, Sri Lanka offers a distinct and valuable setting for examining the role and effectiveness of SMS marketing in the digital age.

This study aims to address the aforementioned research gaps by empirically examining the effectiveness of traditional text-based SMS marketing in driving customer engagement with mobile applications, while also exploring the mediating role of consumer attitudes toward SMS (Maddodi & Upadhyaya, 2023). Specifically, the research investigates which factors influence the success of SMS marketing campaigns, how consumers' perceptions shape their responses to such messages, and how these attitudes ultimately impact digital engagement. By focusing on this intersection, the study provides insights into how traditional marketing tools can be effectively integrated within modern digital platforms to enhance user engagement and support business outcomes (Rida, Ali, Nadeem, & Ahmed, 2023).

The contributions of this research are twofold. Theoretically, the study enriches the literature by linking traditional SMS marketing to mobile app engagement and highlighting the mediating influence of attitude a dimension that has received limited empirical attention. Practically, the findings offer

actionable insights for telecommunication marketers operating in hybrid communication environments (Adhami & Rabiee, 2015). Although SMS does not require an internet connection and is commonly used for transactional messages such as one-time passwords (OTPs) and service alerts, it competes with Over-the-Top (OTT) messaging platforms like WhatsApp, Facebook Messenger, and Instagram Direct, which offer richer, more interactive communication (Shan, Lim, & Yeik, 2023). These OTT platforms typically achieve higher engagement rates through features such as multimedia content, voice notes, and clickable buttons. In contrast, SMS campaigns are increasingly perceived as intrusive and are often dismissed as spam, contributing to message fatigue and reduced effectiveness. Over time, consumer attitudes toward SMS have shifted, making it critical to understand how these perceptions influence campaign outcomes in a modern context (Varnali, 2012).

The remainder of this paper is structured as follows: the next section presents a review of the relevant literature, identifying conceptual gaps and establishing the theoretical model. This is followed by the methodology section, which details the research design, sampling, data collection, and analytical procedures. The results section presents the key empirical findings, while the discussion interprets these findings in light of theoretical and practical implications. The paper concludes by summarizing the contributions, outlining limitations, and suggesting avenues for future research. This structure ensures a logical progression of ideas and underscores the significance of the study in addressing a timely and relevant research question.

## LITERATURE REVIEW

This paper reviewed and justified the literature contribution gathered within the main concepts of short message services marketing, customer engagement in Mobile App, and attitude toward SMS. Each of these concepts plays a vital role in understanding how traditional marketing tools intersect with digital engagement strategies.

### Short Message Service (SMS) Marketing

This mode of communication, SMS, has become one of the most convenient and widely used means of both personal and professional messages. According to Sharma et al. (2021), one of the primary mobile communication technologies is SMS, which allows its subscribers to send short text-based messages that are targeted to recipients instantly. It has thus helped companies reach their customers in regard to making them aware of value-added services. Despite the rise of internet-based communication, SMS continues to stand out as a distinctive channel for reaching real, identifiable customers.

This form of marketing allows businesses to deliver highly personalized, timely, relevant, and instantly accessible messages to their customers (Giaglis, et al., 2013). Besides, the ease and low level of technological demands of SMS advertising make it a very lucrative option for businesses (Khan & Hossain, 2019). The Mobile Marketing Association (2009) classifies SMS marketing into two strategies: pull, where customers initiate communication, and push, where marketers send messages proactively. Companies in the telecommunications sector, such as Dialog, Mobitel, and Airtel, use SMS marketing to promote their brands through informative and persuasive messages. Government and commercial organizations also partnered with telecom operators to communicate or Promote their services.

SMS advertising is defined as a medium through which advertisers send product-related information directly to consumers (Rau, et al., 2011). Research by Bakr and Tolba (2019) revealed that over 90% of SMS messages are opened within 15 minutes of receipt, emphasizing the effectiveness of this channel. Moreover, SMS advertising consistently achieves significantly higher response rates than email marketing (Aydin & Karamehmet, 2017). With a 98% open rate within 24 hours, SMS advertising remains a vital tool for engaging target audiences (Sharma, et al., 2021).

The adoption of mobile communication technologies has significantly increased in recent years, offering advertisers new opportunities to engage with their target markets (Wang & Genç, 2019). SMS remains a preferred choice due to its reachability, mobility, and cost-effectiveness. It facilitates one-to-one information exchange, making it highly effective for interacting with current and potential customers (Bamoriya & Singh, 2012). Despite the proliferation of smartphones, SMS continues to play a key role in cross-media advertising strategies due to its unique features and advantages (Garba, Mohamad, & Saadon, 2021).

**Table 1. Factors affected for SMS marketing**

Journal Article	Source	Factors effected to SMS Marketing
Analysis of the effectiveness of SMS Marketing by Mobile companies: A case study of Telecom sector in Southern Punjab-Pakistan	(Awan, 2015)	Informativeness Irritation
The impact of SMS Marketing on consumer behavior	(Ahmed, 2018)	Entertainment Informativeness Irritation Credibility
SMS Advertising? How message relevance is linked to the attitude toward the brand?	(Varnali, 2012)	Intrusiveness Informativeness
Influencing factors of customer attitude towards SMS marketing- a case of mobile telecommunication industry in Bangladesh	(Amin, et al., 2019)	Intrusiveness Irritation Informativeness Entertainment credibility
Impact of SMS advertising on purchase intention for young consumers	(Kumar Roy, 2023)	Informativeness Entertainment Credibility Message relevancy Irritation
A conceptual investigation of variables affecting he success and acceptance of SMS Marketing in Iran	(Adhami & Rabiee, 2015)	Intrusiveness

The literature underscores that the success of SMS advertising depends on balancing these factors to maximize engagement while minimizing negative perceptions. By leveraging SMS's unique advantages, businesses can effectively engage customers and drive marketing success (Awan, 2015; Kumar Roy, 2023; Amin, et al., 2019; Ahmed, 2018; Varnali, 2012).

### **Customer Engagement**

Mobile applications, commonly known as “mobile apps,” are software programs designed specifically for smartphones (Lockergnome, 2012), Unlike traditional software app that are built for laptops and desktop computers, mobile apps cater to the ever-increasing smartphone user base. Dubreuil and Joubert (2012) highlighted that the widespread adoption of smartphones has made mobile apps an integral part of daily life, with users carrying their devices everywhere. A global traffic and market analysis by Ericsson (2022) revealed that 70% of smartphone users worldwide begin their day by engaging with mobile apps and the internet. This trend is particularly pronounced in the United States, where 88% of mobile downloading activity is app-related, and users spend 85% of their mobile time using apps (Nielsen, 2023).

The growth of mobile app usage is reflected in the significant investments in mobile advertising. According to Nielsen (2023), marketers are projected to spend \$667.7 billion on mobile advertising by 2026. Schonfeld (2020) emphasized that this growth is not limited to the United States but is spreading globally. For example, over 80% of Australians own smartphones, with 94% of users engaging in mobile shopping, while in the UK, 95% of the population owns a smartphone, with 77% using it for e-commerce activities (Ross, 2020; Dubreuil & Joubert, 2012).

The mobile era has revolutionized how businesses engage with customers, offering a cost-efficient and effective means of reaching and retaining their customer base. O'Kane (2019) noted that businesses leveraging mobile apps can achieve a higher return on media investment by engaging customers quickly and efficiently. Retaining existing customers through mobile apps is particularly cost-effective, with Murphy and Murphy (2002) stating that selling to an existing customer costs five times less than acquiring a new one. Apps also enable brands to deepen customer engagement through opt-in communications and targeted push campaigns, which can influence customer behavior and drive app store searches (Littman, 2014).

Millennials, the largest group of mobile users, are key drivers of this trend, with their shopping habits fueling the growth of mobile ad spending (Vasquez, 2011). Mobile apps play a critical role in various sectors, including shopping, gaming, and social networking, and offer unique opportunities for marketers to engage with consumers effectively.

Mobile apps are versatile tools used across industries such as travel, health, politics, and entertainment (McCabe, 2016). They allow users to plan activities, interact with others, and access information effortlessly. Draper and Stucky (2013) observed that apps are often used during “me time” for relaxation or entertainment, such as gaming or social media activities on platforms like Facebook and Twitter. Apps also provide users with practical information, such as the best deals, new market arrivals, and dining options (Tak & Gupta, 2021).

Mobile apps have transformed the retail experience by cataloging brands and products for mobile consumers more extensively than ever before (Kumar & Mukherjee, 2022). Businesses are increasingly integrating localization and personalization features into their apps, allowing for tailored user experiences. Additionally, apps have integrated advanced functionalities such as barcode scanning and mobile ticket delivery, further enhancing their utility (opticon, 2015). By providing seamless access to information and services, mobile apps enable businesses to build customer loyalty and recover costs associated with app development (Rushan & Huda, 2022). European companies, for instance, are investing heavily in developing efficient apps tailored to tourists' needs, such as airport guides and travel assistance tools (Samy, 2022).

In conclusion, mobile apps have revolutionized customer engagement by offering practical, personalized, and socially appealing solutions. As businesses continue to integrate apps into their marketing strategies, they must focus on factors such as usability, reliability, and personalization to maximize user acceptance and satisfaction. Future sections of this study will delve deeper into specific app of mobile app marketing, including branded apps, in-app advertising, and the advantages and challenges of app-based strategies.

## **Attitude Towards SMS**

Consumer attitudes can be broadly defined as a psychological state of being equipped and willing to behave in a specific way, influenced by one's character and predispositions (Tsang, Ho, & Liang, 2017). Tyler (1969) emphasized that attitudes hold significant value in marketing decisions, as they serve as a foundation for understanding consumer behavior. Similarly, MacKenzie and Lutz (1989) described attitudes as the consumers' process of forming positive or negative responses to advertisements. In essence, the way individuals express their opinions about something—whether favorable or unfavorable—reflects their underlying feelings and potential behavioral intentions.

Hoeken and den Ouden (2022) posited that attitude and decision-making are two primary variables influencing advertising perception (AP), as supported by Sharma et al. (2021). These variables

are shaped by factors such as informativeness, entertainment, credibility, message relevance, and irritation associated with advertisements. Earlier research by Giaglis et al. (2013) demonstrated that attitudes towards SMS advertising could significantly affect behavioral intentions, including customer involvement. Wang and Genç (2019) and Aydin and Karamehmet (2017) further explored attitudes towards SMS marketing, highlighting its impact on consumption patterns. For instance, Wang and Genç (2019) identified a positive attitude as a key driver that motivates customers to shop online. Similarly, Korgaonkar and Wolin (2002) reaffirmed this perspective by pointing out that favorable attitudes toward brand web advertisements could enhance online spending and buying behaviors.

Over the past fifty years, attitudes toward SMS advertising have undergone notable shifts. In the 1970s, public sentiment was generally favorable, but this perception gradually turned negative in subsequent decades (Mittal, 2004). Current studies frequently indicate negative perceptions of mobile advertising, aligning with this broader trend (Tsang & Liang, 2004). Interestingly, regional differences in attitudes toward mobile advertising have also been identified. For example, Asian consumers tend to hold slightly more positive views on average, whereas U.S. consumers are generally less favorable (Vishnani, Tripathi, & Srivastava, 2022).

These findings point to the importance of cultural and regional contexts in understanding consumer attitudes toward mobile advertising. Such research, extending the scope beyond Western cultures, may provide valuable insights that complement the existing body of knowledge. Such studies can enhance marketers' ability to design and deliver mobile advertising strategies that resonate with diverse consumer bases.

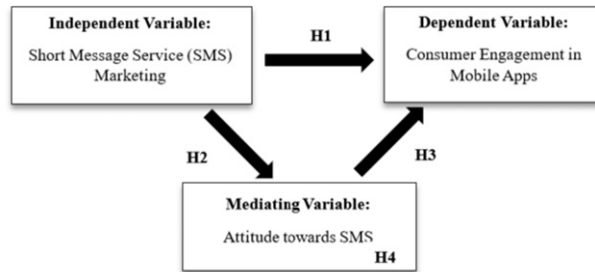
Research has extensively explored mobile app and SMS marketing individually, but the combined impact of SMS marketing, mobile app engagement, and consumer attitudes toward SMS remains underexplored. Limited studies have addressed the direct relationship among these variables, creating a promising area for further research. Existing evidence suggests that timely, personalized SMS messages can enhance app usage habits, brand perception, and user engagement. Positive app interactions also improve attitudes toward SMS as a communication tool, increasing participation in SMS marketing campaigns. Addressing this gap and further investigation into the synergies between SMS marketing, consumer engagement with mobile app could provide valuable insights for optimizing integrated marketing strategies (Misra, Mahajan, & Singh, 2022).

While extensive research exists on SMS marketing, customer engagement via mobile apps, and consumer attitudes, few studies explore how these variables interact within an integrated framework. Particularly, the role of attitude as a mediator between SMS marketing and customer engagement in mobile apps is underexplored. Addressing this gap is crucial for understanding how traditional communication methods like SMS can still influence modern digital consumer behavior. Therefore, this study contributes by examining the mediating role of attitude in the relationship between SMS marketing and mobile app engagement.

## **RESEARCH MODEL AND HYPOTHESES**

SMS marketing and mobile app features go hand in hand to provide users with relevant, timely, and personalized experiences. This includes the sending of personalized SMS notifications that encourage the use of an app but also ensures that the app lives up to its promises in terms of usability, relevance, and value. When SMS marketing is in good harmony with the app's services and functionality, it creates habitual usage of the app, enhances user perceptions, and strengthens consumer engagement.

Figure 1. Conceptual Model of the Research



Effective SMS marketing campaigns can serve as a trigger for consumer interaction with mobile apps by offering timely, relevant, and personalized content. Prior studies have found that SMS advertising positively influences behavioral outcomes such as purchase intention, loyalty, and mobile app usage frequency (Follad, Akpinar, & Tiltay, 2021). Research suggests that when SMS marketing messages resonate with consumer needs, they can boost customer interaction with the app and sustain user engagement over time (Rettie, George, & Deakins, 2005; Sultan, Wong, & Azam, 2021).

H1: There is a significant impact of short message Service (SMS) Marketing on Consumer Engagement in Mobile apps.

Consumers develop attitudes toward SMS marketing based on perceived informativeness, entertainment, trust, and credibility (Tsang & Liang, 2004). When SMS advertisements are seen as useful, relevant, and non-intrusive, they are more likely to evoke positive consumer attitudes. Studies show that well-executed SMS marketing efforts can enhance the consumer's perception and acceptance of SMS as a viable communication tool, strengthening its overall impact (Muk & Chung, 2015).

H2: Short message Service (SMS) Marketing is significantly associated with Attitude towards SMS.

Attitude plays a critical role in shaping consumer behaviors, particularly in mobile app usage contexts. A positive attitude towards SMS marketing increases the likelihood of consumers acting upon the message and engaging with the mobile application (Wang & Genç, 2019). Favorable perceptions of SMS advertising contribute to behavioral intentions, such as revisiting the app, making purchases, or interacting with app features (Amin, et al., 2019).

H3: There is a significant association between Attitude towards SMS and Consumer Engagement in Mobile apps.

Attitude acts as a psychological filter through which marketing stimuli, such as SMS, are interpreted. Rather than exerting a direct influence, SMS marketing often shapes engagement behavior indirectly by influencing consumer attitudes first (Awan, 2015). When consumers hold favorable attitudes toward SMS, they are more likely to perceive promotional messages positively and interact meaningfully with the app (Kim & Han, 2014). Therefore, this study proposes that the mediating role of attitude toward SMS explains how traditional mobile communication techniques still contribute to digital engagement.

H4: Attitude towards SMS significantly mediates the relationship between Short message Service (SMS) Marketing and Consumer Engagement in Mobile apps.

## RESEARCH METHODOLOGY

The rapid increase of mobile phone usage and technological advancement enhanced consumer preferences and customization. Short message service (SMS) marketing is one of the key factors that is a

convenient accessible tool for customers to engage with products or services. Also, customer Attitudes toward SMS also vary time to time with the evolution of various features and the development of the market landscape. Our research aims to evaluate the effectiveness of short message services (SMS) marketing on customer engagement in mobile apps in mobile telecommunication industry in sri lanka: mediating effect of attitude towards SMS. Figure 1 presents the conceptual model for our study, developed based on insights from the research conducted by (Ahmed, 2018; Adhami & Rabiee, 2015 ; Amin, et al., 2019; Kumar Roy, 2023; Varnali, 2012).

## **Sample and Data Selection**

Given the constraints of time and cost in data collection, The size of this population of mobile smart phone subscriptions in the mobile telecommunication industry is higher in Sri Lanka. It thus became possible to neither distribute surveys and collect data from the population. Therefore, to pursue this research further the author collected data from the sample of the mobile smart phone subscribers. Hence, the defined sample was Sri Lankan mobile smart phone subscribers. it is necessary to choose enough elements in the population to be able to transfer sample characteristics to the entire population. Therefore, the relative population utilized for this study is 29.79 million following the available data in this study. Due to the inaccessibility of data regarding the total number Sri Lanka mobile smart phone subscribers, we employed a convenience sampling technique for our study. In the absence of information on the average characteristics of our primary sample, we calculated the necessary sample size using a 95% confidence interval, a 5% margin of error, and a population ratio of 0.50, ultimately establishing a minimum sample size of 384 (Worcester & Downham, 1986). Given the impracticality of reaching the entire population due to time and cost limitations, we conducted an online survey using Google Forms involving 418 participants. In the initial section of the survey, we asked participants if they receive SMS from ISP, allowing only those who answered “yes” to proceed. Data collection occurred over one month, After excluding twenty four incomplete or inaccurate responses, we were left with 394 valid questionnaires for our analysis.

## **Measurement Item**

Initially, ISP information regarding usage and the purpose of having the app was collected, including the ISP name to ensure the sample's relevance. The second section of the survey focused on SMS marketing which include of entertainment, informativeness, irritation, credibility and intrusiveness were assessed. Thereafter respectively customer engagement in mobile apps and attitude toward SMS measured. As a final section participants demographic and personal information was collected. The survey comprised 26 statements on a five-point Likert scale.

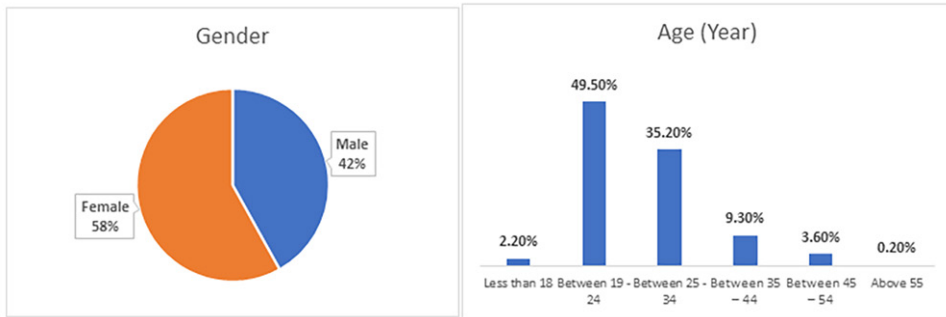
## **DATA ANALYSIS AND RESULTS**

The Cronbach's alpha was calculated to evaluate the internal reliability of the assumptions derived from the study's factors. Exploratory factor analysis determined whether each research statement aligned with the predicted factors. The validity and reliability of the research model were examined through confirmatory factor analysis. Additionally, the study's hypotheses were tested using the simple linear regression. To assess the mediating effects of attitude toward SMS Hayes's (2013) PROCESS Model 1 was utilized. The analysis was conducted using SPSS (Statistical Package for the Social Sciences) 25.0 software.

## **Sample Characteristics**

Table 1 depicts respondent demographics, wherein most respondents were females (243), followed by 175 male respondents. A majority of the respondents were aged between 19 and 24 years old, followed by 147 respondents aged between 25 and 34 years old and only 1 respondent aged above 55 years old.

Figure 2. Respondent Demographics



### Reliability and Validity

The SPSS software was utilized to analyze the reliability of variables. Concerning the scales' reliability, it used Cronbach's alpha **Invalid source specified**, with a cutoff value of 0.7 **Invalid source specified**. When it considering the independent and dependent variables of the study, SMS marketing has recorded 0.904 of reliability Cronbach alpha value which is greater than 0.7. consumer engagement in mobile apps, the dependent variable of the study states that the reliability Cronbach alpha value is 0.891 which is greater than 0.7. attitude toward SMS has stated the reliability Cronbach alpha value is 0.854. Hence all the Cronbach alpha values of major variables are greater than 0.7. Summarily, the findings indicated that all indicators were within the acceptable range, thus establishing validity.

Table 2. Reliability Results of the Research Model

Construct	No of Items	Cronbach's Alpha
SMS Marketing	19	0.910
consumer engagement in mobile apps	4	0.810
Attitude toward SMS	3	0.791

The table shows that the overall KMO value and the Bartlett's Test (sig) value is 0.000, KMO test variables are greater than 0.5 and Bartlett test of all variables are also significant because the obtained 95% significance P Value 0.000 is less than the benchmark value 0.05. Therefore, it can he said that the operationalization measure of the current study had a standard and an acceptable validity level.

Table 3. Validity results of the research model

Construct	df	KMO	Approx. Chi Square	Significance
SMS Marketing	19	0.769	546.704	0.001
consumer engagement in mobile apps	4	0.826	965.247	0.001
Attitude toward SMS	3	0.702	572.536	0.001

## Coefficient

Simple regression analysis has been used to test the direct hypothesis. This paper hypothesized two hypotheses out of which one hypothesis was direct path hypothesis. According to the results received from SPSS 25 simple regression analysis concluded summarized statistical estimates mentioned in the Table below. According to the results given in the table, there is a positive and significant relationship between SMS marketing and consumer engagement in mobile apps.

Table 4. Coefficient results of the research model

	Relationship	R Square	P Value	Coefficient	Status
H1	SMSM	0.648	0.001	0.803	Accepted

Note. SMSM: SMS Marketing, CE: consumer engagement in mobile apps

## Reporting Result of Mediator

The Mediator analysis will be done by using SPSS 25 Process v3.0 Andrew F. Hayes model as the Mediator effect of Attitude toward SMS investigated with impact of SMS marketing on consumer engagement in mobile apps.

Table 5. Mediator results of the research model

Relationship	Effect	Se	T	P	LLCI	ULCI	Status
H4	0.5537	0.0478	11.5907	.0000	.2100	.5415	Accepted

The above table 6 reflects the Mediator effect for the relationship between SMS marketing and consumer engagement in mobile apps. By examining the data table, it reflects that the mediator effect is significant while P value is recorded as 0.000 which is lower than 0.05. Both lower level of confidence interval (LLCI) recorded as a positive value and upper level of confidence interval (ULCI) recorded as a positive value. Which means it does not include a zero in confidence interval. For the mediator effect to be significant either both LLCI and ULCI should be recorded as positive or both should be negative (Hayes, 2020). As conclusion, the mediator effect of the study has a significant impact to the relationship between SMS marketing on consumer engagement in mobile apps.

## DISCUSSION

The findings of this study offer valuable insights into the continued relevance of traditional Short Message Service (SMS) marketing in enhancing consumer engagement with mobile applications, particularly within the Sri Lankan telecommunication sector. While the study demonstrates significant relationships among SMS marketing, consumer attitudes, and app engagement, the findings should be interpreted within the contextual boundaries of Sri Lanka rather than overgeneralized to other markets without comparative evidence. Despite the growing dominance of internet-based and social media marketing strategies, SMS marketing remains a widely adopted tool by telecom service providers. Although its effectiveness has been questioned due to decreasing engagement rates and evolving consumer preferences, the present study illustrates that SMS marketing can still play a critical role in driving user engagement especially when messages are synchronized with app functionalities and tailored to user needs. The results indicate that SMS marketing, when strategically executed, exerts a

significant positive influence on consumer engagement with mobile apps. Specifically, the study confirms that dimensions of SMS marketing such as entertainment, informativeness, credibility, and intrusiveness meaningfully shape consumer attitudes toward SMS communication. These attitudes, in turn, significantly mediate the relationship between SMS marketing and app engagement, reinforcing the importance of user perceptions in determining campaign effectiveness.

The study's support for all four hypotheses aligns with prior research emphasizing that favorable attitudes enhance marketing outcomes, especially in digital environments (e.g., Varnali, 2012; Wang & Li, 2012). In particular, the mediating role of attitude toward SMS is crucial, suggesting that consumers are more likely to engage with mobile apps when they perceive SMS messages as valuable, trustworthy, and non-intrusive. This finding contributes to the ongoing discourse on integrating traditional and modern communication tools for maximizing consumer engagement in mobile-first ecosystems. Furthermore, the empirical evidence affirms that SMS remains an effective communication channel when personalized and contextually relevant offering timely, informative, and engaging content. These insights are particularly relevant for Sri Lankan telecom providers seeking cost-effective methods to enhance app usage and customer loyalty in a highly competitive industry.

## IMPLICATIONS

**Theoretical Implications:** This study extends existing literature by integrating the “Stimuli-Organism-Response (SOR) Model” into the context of SMS marketing within Sri Lanka’s mobile telecommunication industry. By applying the SOR model, this research provides a comprehensive framework for understanding how different elements of SMS marketing influence consumer behavior, specifically their engagement with mobile app. The model offers new theoretical insights by highlighting the mediating role of consumer attitudes toward SMS in shaping customer engagement, which has been a relatively underexplored area in prior research. Future studies could build upon this framework to further explore how various components of SMS marketing impact consumer behavior and decision-making processes in digital environments.

The findings of this study contribute to theoretical understanding of SMS marketing’s role in mobile app engagement, offering a foundation for further research. Researchers can use the developed conceptual model to evaluate the impact of SMS marketing on consumer activity in mobile apps, focusing on different sectors and geographic regions. Future work may also explore the moderating influence of cost-effectiveness, message frequency, and perceived intrusiveness to better contextualize SMS marketing against other digital channels.

**Practical Implications:** From a practical standpoint, the findings of this research offer valuable insights for telecommunication service providers in Sri Lanka and beyond. Understanding the factors that influence consumer attitudes toward SMS can help companies design more effective SMS marketing campaigns. Telecommunication companies can enhance customer engagement by tailoring SMS campaigns to be more entertaining, informative, credible, and non-intrusive. These elements have been shown to significantly impact consumer perceptions and behaviors, which can lead to higher engagement rates with mobile app.

For example, SMS messages that provide timely and relevant information can increase customer satisfaction and build stronger relationships between consumers and service providers. By leveraging SMS marketing alongside mobile app usage, telecommunication companies can encourage higher app downloads, more frequent usage, and improved customer retention. Additionally, by analyzing consumer responses to SMS campaigns, companies can gain valuable insights into customer preferences and behavior, allowing them to refine their marketing strategies and improve the overall customer experience.

This research also suggests that telecommunication providers can increase customer loyalty by delivering personalized and targeted SMS messages. By addressing specific consumer needs

and preferences through SMS, providers can create more engaging experiences and improve brand perceptions, thereby fostering long-term relationships with customers.

## **LIMITATIONS OF THE STUDY**

When the researcher was initializing to study about the relevant concept in the relevant context, when referring to the literature, researcher faced some difficulties in finding previous research works relevant to the current concept and the context. In Sri Lankan context, minimum number of researches have been carried out covering this area. To overcome this challenge the researcher referred to many international research works to carry out the study. However, caution must be exercised in extending the findings beyond the Sri Lankan context without comparative cross-country validation. The next limitation is that the sample was limited to 379 shoppers considered as the sample through convenient sampling. The sample does not represent the entire Sri Lanka due to the financial and time limitations that the researcher faced. And data will collect through only the online (Google form) method. Therefore, it is little difficult to gather data from the relevant sample and the results may be biased as a result, on the other hand it is unable to clarify any doubts face by respondents on a particular question when filling the questionnaire on the spot. Future research should address this by adopting more rigorous sampling strategies and comprehensive statistical reporting. The researcher conducted the research with above mentioned limitations.

## **CONCLUSION**

In conclusion, this study provides compelling evidence that SMS marketing continues to play a vital role in enhancing customer engagement in mobile app within the Sri Lankan telecommunication sector. Despite the rise of alternative digital marketing channels, SMS remains an effective tool for telecommunication companies seeking to engage and retain customers. Theoretical insights derived from the SOR model offer a valuable framework for understanding how different elements of SMS marketing impact consumer behavior, while practical implications highlight the importance of crafting SMS campaigns that align with consumer attitudes and preferences. Telecommunication providers can leverage these insights to design more effective marketing strategies that foster stronger customer relationships and improve brand loyalty.

Future research can build upon these findings by expanding the sample size, incorporating regional variations, and exploring additional factors that may influence SMS marketing's impact on consumer engagement in mobile apps.

## **COMPETING INTERESTS STATEMENT**

The authors of this publication declare there are no competing interests.

## **FUNDING STATEMENT**

No funding was received for this work.

## **CORRESPONDING AUTHOR**

Correspondence should be addressed to Dhuvveeshan Muthusamy; dhuvveeshan08@gmail.com.

## REFERENCES

- Adhami, A., & Rabiee, A. (2015, July 27). *A conceptual investigation of variables affecting the success and acceptance of SMS marketing in Iran*. Academic Press.
- Ahmed, F. (2018). The impact of SMS marketing on consumer behavior. *The Business and Management Review*, 10(1), 116.
- Amin, M., Mahathy Hasan, M., Mahmudul, H., Morimoto, M., Shimp, T., Mitchell, A., & Rettie, R. (2019). Influencing factors of customer attitude towards SMS marketing-A case of mobile telecommunication industry in Bangladesh. *Jagannath University Journal of Business Studies*, 65.
- Awan, A. G. (2015). Analysis of the effectiveness of SMS marketing by mobile companies: A case study of telecom sector in southern Punjab-Pakistan. *Journal of Marketing and Consumer Research*, 16, 65.
- Aydin, & Karamehmet, B. (2017). A comparative study on attitudes towards sms advertising and mobile application advertising. *International Journal of Mobile Communications*, 15(5), 514-536.
- Azhar, I., & Persaud, A. (2012). Innovative mobile marketing via smartphones: Are consumers ready? *Marketing Intelligence & Planning*, 418-443. DOI: 10.1108/02634501211231883
- Bamoriya, H., & Singh, R. (2012). SMS advertising in India: Is tam a robust model for explaining intention? *Organizations and Markets in Emerging Economies*, 3(1), 5.
- Dubreuil, C., & Joubert, S. (2012). Research goes mobile: findings from initial smartphone application research. *3d Digital Dimensions*.
- Edwards, S. (2011). A social media mindset. *Journal of Interactive Advertising*, 12(1), 1-3.
- Fesenmaier, D., Klein, S., Buhalis, D., Bamoriya, H., Kasera, M., & Meshreki, H. (2000). *Information and communication technologies in tourism*. Academic Press.
- Follad, , & Akpınar, , ATiltay, , M. (2021). Mobile marketing: Current state and future research directions. *Journal of Advertising Research*, 23-32. DOI: 10.2501/jar-41-5-23-32
- Garba, S., Mohamad, R., & Saadon, A. (2021). Web service discovery approaches for dynamic mobile environment: A systematic literature review. *International Journal of E-Services and Mobile Applications*, 13(4), 1-23. DOI: 10.4018/ijesma.2021100102
- Giaglis, G., Vlachos, P., Zamani, E., Lekakos, G., Vrontis, D., & Thrassou, A. (2013). Consumer responses to sms advertising: Antecedents and consequences. *International Journal of Electronic Commerce*, 18(1), 105-136.
- Gsma, I. (2024). *Definitive data and analysis for the mobile industry*. <https://www.gsmainelligence.com/>
- Ishaq, A. T., & Ajibesin, A. A. (2022). Performance evaluation of mobile network operators based on inputoriented constant return to scale model. *International Journal of E-Services and Mobile Applications*. Advance online publication. DOI: 10.4018/ijesma.300265
- Jayasuriya, S., & Knight, M. (2015). *Sri Lankas's telecommunications industry: From privatisation to anti-competition?* [https://www.researchgate.net/publication/2537061\\_sri\\_lanka's\\_telecommunications\\_industry\\_from\\_privatisation\\_to\\_anti-competition](https://www.researchgate.net/publication/2537061_sri_lanka's_telecommunications_industry_from_privatisation_to_anti-competition)
- Khan, M., & Hossain, S. (2019). Factors affecting garments employees perception on job performance: Evidence from Bangladesh. *International Journal of Management and Sustainability*, 8(1), 32-47.
- Kim, Y. J., & Han, J. (2014). Why smartphone advertising attracts customers: A model of web advertising, flow, and personalization. *Computers in Human Behavior*, 256-269. DOI: 10.1016/j.chb.2014.01.015
- Kumar, A., & Mukherjee, A. (2022). Shop while you talk: Determinants of purchase intentions through a mobile device. *International Journal of Mobile Marketing*, 8(1), 23-37.
- Kumar Roy, S. (2023). Impact of SMS advertising on purchase intention for young consumers. *International Journal of Financial, Accounting, and Management*, 427. Advance online publication. DOI: 10.35912/ijfam.v4i4.1276

- Littman, R. (2014). *Turning service calls into new car sales: who needs a magic wand when you've got a mobile app?* Academic Press.
- Lockergnome. (2012). *What is the difference between apps and programs - Crowdsourcing questions & answers*. Author.
- Maddodi, C. B., & Upadhyaya, P. (2023). In-app advertising: A systematic literature review and implications for future research. *Spanish Journal of Marketing - ESIC*, 334–352. DOI: 10.1108/sjme-05-2022-0120
- McCabe, M. (2016). Case study: Hispanic use of mobile devices U.S. Hispanics go mobile: adoption and marketing engagement trends. *International Journal of Mobile Marketing*, 8(2), 67–74.
- Misra, R., Mahajan, R., & Singh, N. (2022). Analysis of factors affecting intent to use mobile commerce services in India. *International Journal of E-Services and Mobile Applications*, 15(1), 1–21. DOI: 10.4018/ijesma.300268
- Mittal, B. (2004). Public assessment of tv advertising: Faint praise and harsh criticism. *Journal of Advertising Research*, 34, 35–53.
- Muk, A., & Chung, C. (2015). Applying the technology acceptance model in a two-country study of SMS advertising. *Journal of Business Research*, 68(1). Advance online publication. DOI: 10.1016/j.jbusres.2014.06.001
- Nayma, J., Rahman, S. B., & Ratul, S. S. (2023). Understanding the effects of SMS marketing on consumers' attitude and purchase decision: An empirical study on Bangladesh. *International Journal of Financial Accounting and Management*, 215-233. DOI: 10.35912/ijfam.v5i2.1445
- Nielsen. (2023). *The mobile media report: state of the media*. Author.
- Opticon. (2015). *Mobile ticketing*. Author.
- Rau, P., Zhang, T., Shang, X., Zhou, J., Brey, E., & Kaplan, A. (2011). Content relevance and delivery time of SMS advertising. *International Journal of Mobile Communications*, 9(1), 19–38.
- Rettie, R., George, U., & Deakins, B. (2005). Text message advertising: Response rates and branding effects. *Journal of Targeting Measurement and Analysis for Marketing*, 304-312. DOI: 10.1057/palgrave.jt.5740158
- Rida, Ali, Nadeem, & Ahmed. (2023). The impact of SMS advertisements on purchase intention of apparel brands' consumers in Quetta. *Jinnah Business Review*, 49 - 67. <http://jbr.c.pk/volumes/article-4.pdf>
- Ross, M. (2020). *Smartphone penetration booms*. Academic Pres.
- Rushan, R. I., & Huda, S. (2022). Demystifying the effect of flow experience for mobile app-based e-services: A moderated mediation study. *International Journal of E-Services and Mobile Applications*, 14(1), 1–26. DOI: 10.4018/ijesma.285548
- Samy, H. (2022). Exploring the use of mobile phone technology in marketing airline services in Egypt. *International Journal of Mobile Marketing*, 7(3), 82–94.
- Shan, L. H., Lim, W. M., & Yeik, K. K. (2023). Advertising value and privacy concerns in mobile advertising: The case of sms advertising in banking. *Journal of Financial Services Marketing*, 1135–1153. DOI: 10.1057/s41264-023-00263-3
- Sharma, A., Dwivedi, Y., Arya, V., Siddiqui, M., Barwise, P., & Amir Khanpour, M. (2021). Does SMS advertising still have relevance to increase consumer purchase intention? A hybrid PLS-SEM-neural network modelling approach. *Computers in Human Behavior*, 124, 106919.
- Sultan, P., Wong, H., & Azam, M. (2021). How perceived communication source and food value stimulate purchase intention of organic food: An examination of the stimulus-organism-response (SOR) model. *Journal of Cleaner Production*, 312(11). Advance online publication. DOI: 10.1016/j.jclepro.2021.127807
- Tak, P., & Gupta, M. (2021). Examining travel mobile app attributes and its impact on consumer engagement: An application of s-o-r framework. *Journal of Internet Commerce*. Advance online publication. DOI: 10.1080/15332861.2021.1891517
- Tian, Z., Zhangyu, S., Cheng, Q., Walshe, P., Schonfeld, E., & Shahid, A. (2021). *Examining the antecedents and consequences of mobile travel app engagement*. DOI: 10.1371/journal.pone.0248460

- TRC. (2025). *Telecommunications regulatory commission of Sri Lanka*. [https://www.trc.gov.lk/index\\_e.php](https://www.trc.gov.lk/index_e.php)
- Tsang, M., Ho, S.-C., & Liang, T.-P. (2017). Consumer attitudes toward mobile advertising: An empirical study. *International Journal of Electronic Commerce*, 65–78. DOI: 10.1080/10864415.2004.11044301
- Tsang, M., & Liang, T. (2004). Consumer attitudes toward mobile advertising: An empirical study. *International Journal of Electronic Commerce*, 8(3), 65–78.
- Varnali, K. (2012). SMS advertising: How message relevance is linked to the attitude toward the brand? *Journal of Marketing Communications*, 1. Advance online publication. DOI: 10.1080/13527266.2012.699457
- Vasquez, D. (2011). *Why mobile is the hot local media*. lifemagazine.com. [http://www.medialifemagazine.com/artman2/publish/new\\_media\\_23/whymobile-is-the-hot-local-ad-medium.asp](http://www.medialifemagazine.com/artman2/publish/new_media_23/whymobile-is-the-hot-local-ad-medium.asp)
- Vishnani, S., Tripathi, S. N., & Srivastava, S. (2022). Achieving recommendation intention in mobile banking: A serial mediation approach. *International Journal of E-Services and Mobile Applications*, 14(1), 1–21. DOI: 10.4018/ijesma.296580
- Wang, Y., & Genç, E. (2019). Path to effective mobile advertising in Asian markets: Credibility, entertainment and peer influence. *Asia Pacific Journal of Marketing and Logistics*.

*Dr. Sugeeth Patabendige holds a PhD in Accountancy from RMIT University, Australia, and is a Fellow Member of the Chartered Institute of Management Accountants (UK) as well as a Chartered Global Management Accountant (CGMA) of AICPA. With extensive experience as an educator and strategic planner in both academia and industry, his research interests focus on sustainability accounting, ESG reporting, and strategic marketing education, reflecting his dedication to advancing responsible business practices and academic excellence.*

*Mr. Dhuvveeshan Muthusamy holds a Bachelor's degree in Marketing from the University of Kelaniya. His research interests lie in Brand Management, ERP, and Digital Marketing. He is passionate about exploring the intersection of technology and marketing strategy to enhance business performance and customer engagement.*