



# Demographic factors and consumer attitude towards unsolicited mobile-based marketing messages: A factorial design

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## ABSTRACT

The increasing number of mobile phone users and unethical practices of sending unsolicited mobile-based advertisement related messages without knowing the relevancy of customers have invited authors to this area of research. This study investigated the consumer attitude towards unsolicited mobile-based advertisement related messages in Pakistan. Data was collected via purposive sampling technique. Statistical tests such as t-test and one- and two-way ANOVA between groups were performed. Findings of the study revealed the existence of significant differences in the mean scores for age, education, and profession. Furthermore, results of two-way ANOVA revealed the presence of significant main effect for age and gender, whereas no interaction effect was found for such variables. The study, interestingly, found the interactive role of profession, which was further probed and confirmed via post-hoc test. The study concluded that mobile-based marketing is not unscrupulous in its true nature; however, doing mobile-based advertising at the cost of encroaching upon consumer privacy and without their permission is not the right way to achieve the desired benefits of the mobile-based advertising.

**Keywords:** communication and media, consumer attitude, unsolicited mobile-based marketing, digitization

## INTRODUCTION

The advancement of mobile technology not only changed one-to-one medium of communications but also altered the method of traditional advertising. One of the evolving tendencies in mobile communication is mobile-based marketing (Enwereuzorr, 2017; Gao & Zang, 2016; Martínez-Ruiz et al., 2017). Mobile-based marketing is a social media marketing strategy by which individuals are encouraged to purchase the advertised products or services via mobile (Aslam et al., 2016; Carroll et al., 2007; Haider, 2012; Makudza et al., 2020; Megdadi & Hammouri, 2016; Murillo-Zegarra et al., 2020; Noor et al., 2013).

According to Enwereuzorr (2017), mobile advertising involves persuading individuals to buy products and services using mobile devices. For this purpose, two types of mobile-based marketing strategies (i.e., push-type strategy and pull-based strategy) are used (Karjaluoto et al., 2004; Park et al., 2008). Under push-based approach information about specific products or services are sent direct to the recipients (non-permission-based), whereas in pull-based approach, information is sent subject to consumer consent (Hymavathi, 2015; Liu, 2008).

Marketers of the digital economies are of the view that mobile-based advertising via short messaging service (SMS) (push-based approach) is the best way of advertising, as they can reach to maximum customers in short period of time. A serious weakness with this argument, however, is that

1. marketers do not precisely know the activities in which the consumers are engaged in, for example, the time, the location, and their mood when their mobile rings for advertisement.
2. Marketers also do not know how the advertising information is processed in consumer minds at all stages (hierarchy effects perspective), as the thinking, feeling, and behavior of consumers vary from each other.

To put it differently, De Reyck and Degraeve (2003) found that mobile-based marketing related messages works only if it is permission-based. Several studies (e.g., Gao & Zang, 2016; Haider, 2012; Monk et al., 2004; Windham & Orton, 2002) suggests that non permission-based messages are annoying, irritating and violating consumer privacy. Thus, a negative relationship exists between irritating advertising messages and consumer attitude (Barckett & Carr 2001; Ducoffe, 1996; Haider, 2012, p. 757; Liu et al., 2012).

However, what is the attitude of consumer towards unsolicited mobile-based marketing related messages is not yet explored in literature. This paper will seek to address this question by considering consumer demographic factors. In their empirical examination Gao and Zang (2016, p. 213) calls for future research on the direct and intervening role of gender and age towards mobile advertisement. Similarly, Martínez-Ruiz et al. (2017) strongly recommended that future research need to be done to “identify demographic variables of consumer that help to explain differences between groups” (p. 9). Barckett and Carr (2001) argued that relevant demographic variables have a significant impact on attitude towards advertising and should be incorporated. Furthermore, this study also responds to future calls on mobile advertising (e.g., Aslam et al., 2016; Enwereuzorr, 2017). Therefore, there is dare need to examine appropriately consumer demographic factors in consumer attitude towards unsolicited mobile-based advertising in Pakistan. Since consumer in Pakistan quite frequently receive unsolicited mobile-based advertisement through SMS (see for detail [Appendix A](#)). Also, in Pakistani context we found no study that captured consumer experiences of unsolicited mobile-based advertising via SMS.

## LITERATURE REVIEW

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### Theoretical Foundation

Hierarchy effect theory (HET) introduced by Lavidge and Steiner (1961) tells marketers to make advertisement in such way that the consumer goes through think, feel, and do stages. Under this marketing paradigm, the consumer first thinks about the advertise product (cognitive-containing awareness and knowledge), this led to feeling (affect-contain, linking, preference, and conviction), feeling convert to do (behavior-purchase decision). Several studies have cited this theory however, HET is not fit for unsolicited mobile-based advertising related messages since, when consumer received unsolicited mobile-based messages irritating they generally used the option delete it forthwith. Also, the advertiser does not know how the advertising information is processed in consumer minds at all stages. Therefore, the theoretical foundation of this study comes from psychological reactance theory presented by Brehm's (1966). The theory predicts that “*when an individual perceived freedom is threatened by the source, the individual will act in opposite direction*”. Based on the same logic, this study predicts that consumer privacy is consumer freedom and when consumer received un-solicited mobile-based advertisement related messages they become aware that marketers have acquired their personal phone numbers without their permission to send unsolicited mobile-based messages. Due to this intrusive message, consumer will feel a loss of control, and this will prevent them to act upon. To regain their control, they will act in the opposite way (delete unsolicited mobile-based messages without opening them) intended by marketers.

### Mobile Advertising

With the rapid progression of mobile technology, its diversified utility in terms of the clientele is also shaping up very swiftly (Enwereuzorr, 2017; Hai Ho et al., 2022). Top development in this behalf is the mobile advertising which involves approaching customers to induce them to purchase goods and services (Donga et

al., 2018; Leppäniemi & Karjaluoto, 2005; Statista, 2022<sup>1</sup>; Tsang et al., 2005). Advertising messages are delivered to the users generally through wireless communication devices such as mobile phones and the major objective of such advertising messages is to win the sponsorship of the targeted users (Aslam et al., 2016; Gao & Zang, 2017; MMA, 2009; Monk et al., 2007). Enwereuzorr (2017) noted three sources of mobile-based advertising: "phone calls," "SMS," and "multimedia messaging service." Unlike other studies, the current study opted for SMS-based advertising via mobile phones. SMS is proving to be quite rewarding (Deshwal, 2016; Enwereuzorr, 2017).

Prima facie, mobile advertising can be used to engage a customer with a brand through numerous means, such as text messages, mobile advertising, and permission-based marketing, the delivery of mobile content, user-generated content, and mobile commerce (Oztaş, 2015). However, mobile technology has its pros and cons while offering avenues of opportunities to companies it confronts them with challenges as well (Oztaş, 2015). Earlier studies pertaining to pre-smart phone era when marketing was via text or SMS messages demonstrated users' unhappiness over mobile marketing communications finding them to be vexing (Haider 2012; Muk, 2007), violating their privacy Windham and Orton (2002), and interfering Monk et al. (2004) putting their utility as a means of marketing in doubt (Grant & O'Donohoe, 2007).

SMS technology empowers marketers to convey their promotional messages to clients using the mobile phone (Huq et al., 2015; Zhang & Mao, 2008), which is categorized as a person-to-person promotion (Ahmad et al., 2016; Xu & Jingjun, 2006). Accordingly, SMS technology facilitates trademarks to sponsor their merchandise, services, and fresh concepts via customized communications sent direct to different users (Sultan et al., 2009). Another study undertaken by Izquierdo-Yusta et al. (2015) for the Spanish market established that response to a mobile promotional content was directly interrelated to the readiness to accept mobile promotional content among mobile users with or without access to Internet. Likewise, Wu (2016) endorsed that the significance of promotional strategies enhanced the possibilities of accepting the publicity content within mobile social networks particularly among undergraduates of a large United States' university.

In the Indian market context, Hymavathi (2015) while exploring incidence of users' interactive reaction to SMS-based mobile publicity content found users to be uncertain about taking note of messages received and generally used the options of 'read and reject', 'read it promptly', and 'delete it forthwith'. Based on responses from the Chinese universities' students, Gao and Zang (2016) verified that entertaining feature, credibility, and a personal touch in mobile publicity material had a positive link to users' approach to that material while annoyance had a negative connection to clients' approach to such material. Customers' sensitivity to bothersome SMS publicity material has a hostile relationship with their approach concerning SMS promotional content (Waldt et al., 2009). When clients have an antagonistic approach towards mobile promotional contents, vendors opt for a guarded policy while taking recourse to SMS for gaining prospective clients' receptiveness, particularly the younger segment of target population (Drossos et al., 2013).

### Influence of Unsolicited Messages on Consumer Attitude

Attitude is a key aspect in research on marketing Deshwal (2016). According to Kotler (2001), "an attitude is a person's enduring favorable or unfavorable evaluations, emotional feelings, and action tendencies toward some object or idea." In the initial phases of research, mobile users demonstrated affirmative approach to publicity but subsequently the majority of researchers discovered in them a negative outlook towards promotional strategies (Hai Ho et al., 2022; Marcus, 2018; Monk et al., 2007; Nasco & Bruner, 2008; Strivastava, 2010). Gao and Zang (2016) found that Chinese consumer hold negative attitude towards irritating mobile-based messages. In their comparative analysis Liu et al. (2012) found that Japanese customers are more irritated towards mobile advertisement than Australian customers.

Testing cognitive, affect, and conative aspects of Nigerian consumer in telecom sector, Akanji and Adeleke (2018, p. 43) concluded that comparatively the effect of unsolicited text messages (spamming) on cognitive component of attitude is high, signifying that unsolicited text messages is not a viable marketing strategy. in

<sup>1</sup> Spending on mobile advertising has increased from 17.2% compared to 2021 and this spending is projected to reach a record amount nearly \$399.6 billion by 2024. Similarly, the source also projected that spending on digital advertisements will increase from \$521.02 billion in 2021 to 876 billion dollars.

contrast, in Pakistani context Javeed (2015) found no relationship between irritating messages and attitude towards SMS advertisement. Examining behavior response to marketing messages, Hymavathi (2015, p. 298) found that 127 respondents read and reject marketing messages, 64 respondents ignore it completely, 45 respondents delete it immediately, 136 respondents read it occasionally, and only 21 respondents read and accept it. Given the variance between users' reactions to mobile-based advertising, it remains uncertain that which types of messages are irritating as the construct irritation in mobile advertising literature has been used too generic, is it the characteristics of mobile message that irritate consumer? or is it the techniques employs by marketers that annoy and make them unhappy? or is it the time, location, their mood when their mobile rings make them unhappy? The current study assume that unsolicited mobile based advertisement related messages are considered to be irritating (irrespective of time, location, mood, etc.). So, what is the attitude of consumer towards unsolicited mobile-based marketing related messages from consumer demographic perspective is not that explored because, the advertiser does not know how the advertising information is processed in consumer minds at think, feel and do stages. Thus, a clear understanding of consumer demography with respect to unsolicited mobile-based marketing related messages will help marketers in designing a fit marketing strategy.

### Relevant Demographic Variables

Advancing Ducoffee (1996) model on attitude towards advertising, Brackett and Carr (2001) added credibility and relevant demographic factors Ducoffee (1996) advertising model, they concluded that relevant demographic variables are significant and thus should be incorporated. Thus, in the current study it is postulated that gender, education, age, and profession are relevant variables that need to be explored in the context of unsolicited mobile-based advertising.

Regarding gender, Irshad and Ahmad (2019) found that females' attitudes towards social media marketing are more favorable than males. Shao et al. (2019) recently found differences between male and female in the context of mobile payment. Hamid Saleh et al. (2013) revealed that variable gender has confirmed dissimilarities in customers' decision-making procedures. In terms of demography, Zolfaghar et al. (2010) have referred to the interest shown by researchers in gender influence on the choice of response to publicity drives on mobile phones. In this specific context, Zolfaghar et al. (2010) subscribed to the views held by Haghirian and Madlberger (2005) and Zhou et al. (2014) that males and females react differently to the promotional campaigns on mobile phone. Keeping in view the sparse research undertaken on the role of gender in customers' behavioral response to unsolicited text messages, the study attempts to learn the gender's effect on consumer attitude towards unsolicited text messages in the backdrop of Pakistani market.

With reference to age youngsters are observed to have mobile phones regularly (Scharl et al., 2005). For them mobile gadgets are communication appliances as well as fashion boasting (Zolfaghar et al., 2010). According to Shavitt et al. (1998), comparatively younger customers are happier and more prone to be receptive to publicity drives and display more affirmative approach towards customary publicity campaigns. Unal et al. (2011) found difference in youth and adult attitude towards mobile adverting, they concluded that youth are more positive towards mobile advertising than adults. In a similar study, Javeed (2015) found that the attitude of younger customers towards mobile advertising are favorable than older customers. In contrast, Faldu (2020, p. 113) found no significant difference between age and consume attitude towards mobile-based marketing. On, average earlier studies have amply validated that age has a great sway on customers' reaction to mobile advertising (e.g., Hamid Saleh et al., 2013, Vipul, 2010). The present study also intends to find out the effects of age on customers' attitude specifically towards unsolicited text messages in Pakistani context.

With respect to education and profession, Dedeoglu (2012) explored the link between educational qualification and the users' approach toward mobile publicity; the younger educated users irrespective of the gender have a positive approach to mobile promotional drives. These findings have also been endorsed by Zolfaghar et al. (2010) who theorizes that education has been one of the critical variable in shaping up users' outlook and their disposition toward mobile promotional campaigns (Haghirian & Madlberger, 2005). Findings of study undertaken by Sarker and Wells (2003) highlight that users of mobile phones with lower educational qualifications and falling in lower income groups have comparatively higher positive outlook toward publicity campaigns on mobile gadgets (Hadi et al., 2019; Shavitt et al., 1998).

**Table 1.** t-test for gender

Gender	n	Mean	Standard deviation	SEM				
CATM_BM Male	184	2.51	0.932	0.068				
Female	71	2.74	0.970	0.123				
CATM_MB Lenene's test	t-test for equality of means							
F	Sig.	T	df	Sig.-2	MD	SED	Lower	Upper
2.32	0.129	-1.647	253	0.101	-0.221	0.134	-0.486	0.043

Note. CATM: Consumer attitude towards mobile-based marketing; SEM: Standard errors means; MD: mean difference; SED: Standard errors difference; & Sig.-2: Sig. two-tailed

Very pertinently however, study undertaken by Mostafa and Yasmin (2017) vis-a-vis educated mobile users' approach towards promotional drives revealed that 48% notice and ignore those SMSs; 34% notice and delete them; 10% respond whereas only 2% share such messages, meaning thereby that only about 12% of the qualified professionals pay heed to the promotional SMS. With reference to profession, consumer engaged in different professions will perceive unsolicited mobile-based marketing related differently, since purchasing power of consumer vary from profession to profession (e.g., teachers, general administrators, and bureaucrats<sup>2</sup>) among others. Thus, the present study attempts to figure out the effects of demographics on consumer attitude toward unsolicited text messages. Based on the above discussion it hypothesized that:

1. **H1:** Differences exist in consumer attitude towards unsolicited mobile-based marketing messages from gender perspective.
2. **H2:** Differences exist in consumer attitude towards unsolicited mobile-based marketing messages from age perspective.
3. **H3:** Differences exist in consumer attitude towards unsolicited mobile-based marketing messages from level of education perspective.
4. **H4:** Differences exist in consumer attitude towards unsolicited mobile-based marketing messages from profession perspective.
5. **H5:** Profession affects the relationship between age and consumer attitude towards unsolicited mobile-based marketing messages.

## MATERIALS AND METHODS

To investigate the attitude of consumers towards unsolicited mobile-based messages, the present study opted for factorial design by collecting 301 responses using purposive sampling technique from Islamabad, Rawalpindi, and Peshawar. Questionnaire forms were distributed among teachers, administrators, and bureaucrats (see [Appendix B](#)).

Purposive sample suits the study well since the study focused on consumers' demographic variables. 255 valid responses were analyzed via SPSS, 73% of the respondents were male and 27% of the total respondents were female, 72% of 183 respondents were married, and 28% unmarried. 26% of respondents fall under the age bracket of 20-30, 51% between the age bracket of 31-40, and 23% between 41-50. 44% of the respondents were general administrators, 34% were teachers and 32% bureaucrats. 59% of the respondents were master holders, 14% were PhD holders, whereas the remaining were graduates. All of the respondents were using different mobile networks (i.e., Telenor, Warid, Ufone, Jazz, and Zone). To identify consumers' attitude towards unsolicited mobile-based messages, t-test and one- two-way ANOVA between groups were performed in SPSS.

## ANALYSIS AND RESULTS

To compare consumers attitude towards unsolicited mobile-based advertising for males and females, it is found that there was no significant difference in the mean scores for males ( $M=2.51$ ,  $SD=0.932$ ) and females ( $M=2.74$ ,  $SD=0.97$ ), ( $t[253]=-1.647$ ,  $p>0.05$  two-tailed), see [Table 1](#) for detail.

<sup>2</sup> Teachers in this study means teaching at universities. General administration in this study means public servants (BPS 17 and above), whereas bureaucrats mean civil servants.

**Table 2.** Multiple comparisons (age)

(I) Age	(J) Age	Mean difference (I-J)	Standard error	Sig.	95% confidence interval	
					Lower bound	Upper bound
20-30	31-40	.652*	.139	.000	.324	.980
	41-50	.733*	.166	.000	.340	1.127
31-40	20-30	-.652*	.139	.000	-.980	-.344
	41-50	.081	.146	.844	-.263	.426
41-50	20-30	-.733*	.166	.000	-1.12	-.340
	31-40	-.081	.146	.844	-.426	.263

Note. \*The mean difference is significant at the 0.05 level & Dependent variable: CATM\_BM

**Table 3.** Multiple comparisons (education)

(I) Education	(J) Education	Mean difference (I-J)	Standard error	Sig.	95% confidence interval	
					Lower bound	Upper bound
Graduate	Master	.372*	.135	.018	.052	.693
	Doctorate	.829*	.196	.000	.366	1.291
Master	Graduate	-.372*	.135	.018	-.693	-.052
	Doctorate	.456*	.177	.029	.037	.875
Doctorate	Graduate	-.829*	.196	.000	-1.290	-.366
	Master	-.456	.177	.029	-.875	-.037

Note. \*The mean difference is significant at the 0.05 level & Dependent variable: CATM\_BM

**Table 4.** Multiple comparisons (profession)

(I) Profession	(J) Profession	Mean difference (I-J)	Standard error	Sig.	95% confidence interval	
					Lower bound	Upper bound
GAs	Bureaucrats	.372*	.135	.018	.052	.693
	Teachers	.829*	.196	.000	.366	1.291
Bureaucrats	GAs	-.372*	.135	.018	-.693	-.0522
	Teachers	.456*	.177	.029	.037	.875
Teachers	GAs	-.829*	.196	.000	-1.29	-.366
	Bureaucrats	-.456	.177	.029	-.875	-.037

Note. \*The mean difference is significant at the 0.05 level; Dependent variable: CATM\_BM; GAs: General administrators

To examine the impact of age towards unsolicited mobile-based messages a one-way ANOVA between groups was conducted, participants were divided into three categories as per their age (group 1: 20-30 years; group 2: 31-40 years, and group 3: 41-50 years). The study found a statistical difference between three categories ( $F=13.3$ ,  $p\text{-values}\leq 0.05$ ). From post-hoc comparisons the study also found that the mean differences between groups 1 was significantly different from group 2 and 3. Group 1,  $n=66$  ( $M=3.08$ ,  $SD=1.14$ ), group 2,  $n=132$  ( $M=2.42$ ,  $SD=0.77$ ), and group 3,  $n=57$  ( $M=2.58$ ,  $SD=0.966$ ). Details of multiple comparisons are shown in **Table 2**.

Findings of one-way ANOVA for the level of education variable revealed that the differences between three categories (graduate, master, and doctorate) were statistically significant ( $F=9.2$ ,  $p\leq 0.05$ ). From multiple comparisons it was found that the key differences were found between doctorate and graduate groups. Graduate group,  $n=69$  ( $M=2.9$ ;  $SD=0.99$ ), doctorate group,  $n=34$  ( $M=2.0$ ,  $SD=0.57$ ), see for detail **Table 3**.

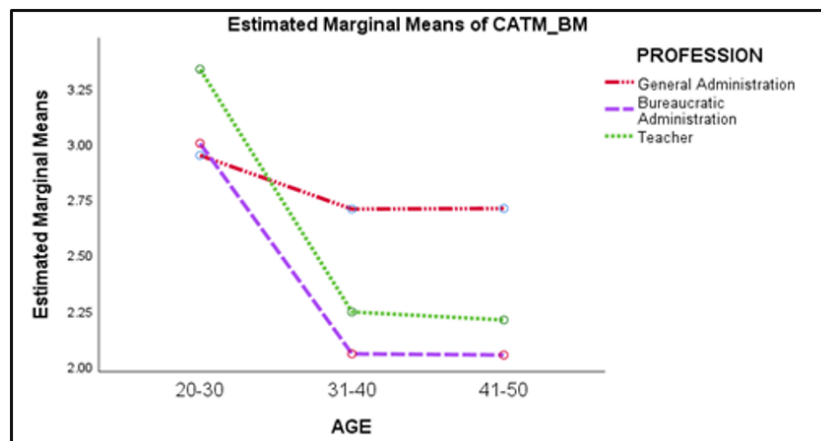
Significant results were found for profession variable, profession has three categories- general administration, teachers, and bureaucratic administration. General administrators (114) attitude towards mobile-based messages were high with ( $M=2.7$ ,  $SD=0.837$ ). Bureaucrats and teachers' attitude towards mobile-based unsolicited messages were found to be low, bureaucrats  $n=56$  ( $M=2.3$ ,  $SD=0.67$ ), teachers  $n=85$  ( $M=2.5$ ,  $SD=0.61$ ). No significant differences between bureaucrats and teachers' groups were found. However, the difference between general administrators' group and bureaucrats group were found to be statistically significant ( $F=4.5$ ,  $p\leq 0.05$ ). A multiple comparison of profession variable is shown in **Table 4**.

To test the impact of age and gender on consumer attitude toward mobile-based messages, it was found that age do affect attitude towards unsolicited messages ( $F=12.6$ ,  $p\leq 0.05$ , partial eta squared=0.092, a medium effect size<sup>3</sup>) whereas the direct role of gender ( $F=0.335$ ,  $p\geq 0.05$ , partial eta squared=0.002), and education

<sup>3</sup> Eta squared 0.01 is small, 0.06 is medium, and 0.13 is large (Cohen, 1988).

**Table 5.** Tests of between-subjects effects

Source	Type III sum of squares	df	Mean square	F	Sig.	Partial eta squared
Corrected model	39.0 <sup>a</sup>	8	4.883	6.050	.000	.165
Intercept	1,368.40	1	1,368.400	1,698	.000	.873
Age	2.54	2	13.273	16.47	.000	.118
Profession	5.70	2	2.850	3.536	.031	.028
Age*profession	7.79	4	1.949	2.418	.049	.038
Error	198.20	246	.806			
Total	1,935.20	255				
Corrected total	237.30	254				

**Figure 1.** Slope analysis (age\*profession)

( $F=1.88$ ,  $p=0.14$ , partial eta squared=0.070) on attitude towards unsolicited messages were found to be insignificant in the same model. Similarly, the relationship between age and unsolicited mobile-based messages were not affected by the intervening role of gender ( $F=0.787$ ,  $p=0.459$ , partial eta squared=0.011) and education ( $F=0.366$ ,  $p=0.832$ , partial eta squared=0.019).

Interestingly, a significant main effect was found for age and attitude towards unsolicited mobile-based messages relationship ( $F=16.4$ ,  $p\leq 0.05$ , partial eta squared=0.118) and profession and attitude towards unsolicited mobile-based messages relationship ( $F=3.53$ ,  $p\leq 0.05$ , partial eta squared=0.028). The interaction effect of profession between age and consumer attitude towards unsolicited mobile-based advertisement was also found to be statistically significant ( $F=2.41$ ,  $p\leq 0.05$ , partial eta squared=0.049). This indicates that the relationship between age and unsolicited mobile-based messages is affected by profession see for details **Table 5** and **Figure 1**.

As shown in the **Figure 1**, a little differences exists between general administration, bureaucratic administration, and teachers at 20-30 age group, however, the differences for general administration category and bureaucratic category are different at different age level (i.e., 41-50). No significance differences were found between age group 31-40 and 41-50. A statistically significant differences between age group (20-30) and two categories of profession (general administration and bureaucratic administration) at 41-50 age group were found to be considerable, signifying the intervening role of profession on the relationship between age and consumer attitude towards unsolicited mobile-based messages.

## DISCUSSION ON FINDINGS

This empirical study attempted to bridge the gap indicated by earlier researchers (e.g., Aslam et al., 2016; Enwereuzorr, 2017; Gao & Zang, 2016; Martínez-Ruiz et al., 2017). The aim was to determine the effects of consumer demographics (age, gender, education, and profession) on consumer attitudes towards unsolicited mobile-based messages. This study appears to be the first to empirically demonstrate that demographic variables like gender do not play any important role in explaining the attitude of the Pakistani consumer while on the other hand, age, education, and profession have a very crucial role in defining the attitude of the consumer towards unsolicited mobile-based marketing related messages.

The study analyzed responses of both genders. The mean value of male was (M=2.5) whereas the female was (M=2.7), which exhibits that there is no difference between male and female reactions towards the unsolicited text messages. Previous researches (e.g., Irshad & Ahmad, 2019; Shao et al., 2019; Zhou et al., 2014) contradicts the results of current study in the perspective of attitude of consumer towards mobile advertisement. The disparity between the results can be explained through the difference in the parameters—the current study has attempted to ascertain the effect of gender particularly on unsolicited text messages whereas earlier researchers studied the over-all effect of gender on mobile advertisement. With regard to education variable, findings of one-way ANOVA revealed the differences between three categories are statistically significant. The key differences were found between graduate group and doctorate group. This findings match the results of Sarker and Wells (2003), they found that consumer having low qualification have comparatively high attitude towards mobile advertisement. The indirect role of education on the relationship between age and attitude towards unsolicited messages were found to be insignificant matching the results of research work of Javeed (2015). For the purpose of analyzing the effect of profession on customers' attitude towards unsolicited text messages, three categories were formed i.e., administrators, teachers, and bureaucrats. A significant main effect was found for profession and attitude towards unsolicited mobile-based messages relationship. The results explain that professions have significant effect on attitudes of costumers when encountered with unsolicited text messages. Results of the study undertaken in this behalf by Mostafa and Yasmin (2017) also corroborate the current study findings.

Similarly, the results for age reveal a significant effect of age on attitude towards unsolicited mobile-based messages. Hamid Saleh et al. (2013) also found that age is likely to have an impact on consumer purchasing receptiveness. Similarly, Unal et al.'s (2011) findings also support our findings that attitude of youth are positive towards mobile advertisements than adults. On the contrary, results of Javeed (2015) research are completely different where the age does not have any effect on the attitude of Pakistani consumer towards mobile advertisements. The major factor responsible for dissimilar results appears to be the perspective of both studies (attitude towards mobile advertising vs attitude towards unsolicited mobile advertising). However, when profession was introduced to investigate the impact of consumer attitude towards unsolicited text messages the results when analyzed were found to be overwhelming. Like, profession has significant role between age and attitude, which shows that people who are serving as administrators get the impact more when their age is between 20 to 30 and 41 to 50 years. On the contrary, the teachers' attitude gets more influenced when they are young between the ages of 20-30 and it decreases when they become mature. Similarly, the bureaucrats get more influenced when they are between the ages of 20-30 and are gradually less influenced when they become 31-40. These distinctive differences at different categories of age and profession led us to the conclusion that profession plays a major role in establishing a strong relationship between age and attitude towards unsolicited mobile-based text messages.

These findings help us to understand that two factors, that is, age and profession play an important role in explaining the consumer attitude toward unsolicited text messages in Pakistani market. The current findings can be also expounded in terms of psychological reactance theory which confirms that if recipients perceive loss of freedom they will act in opposite way. As already mentioned, two types of mobile advertising i.e., (i) push type and (ii) pull type. Our study results favor quite manifestly pull approach for mobile based advertising. The telecom firms, however, prefer to resort to unsolicited text messages for tempting fresh clienteles to boost their returns. This methodology enables the business houses to try additional avenues for telecom companies to disseminate their data on cost efficient basis with exclusive focus on one-to-one clients (Akanji & Adeleke, 2018; Fatima & Abbas, 2016; Raganathan et al., 2015).

The current study also found that unsolicited text messages are intrusive into consumer daily activities. Moreover, the absence of permission to use the consumer data might be irritating for many with respect to age and professions in the context of Pakistan. The findings of Marcus (2018) are quite akin wherein the unsolicited text messages were found to be irritating to Nigerian clientele. The current study therefore favors pull strategy wherein the customers' permission is a condition to send text advertisements.



## CONCLUSIONS

The present study concludes that gender do not influence the customers' attitude towards unsolicited text messages whereas the age, education and profession are the most significant factors that impact the consumer attitude. The findings of the study open up new avenues for the companies to ponder upon the effectiveness of advertisement strategy depending on the consumer age, education, and profession. The interplay of profession vis-a-vis age and consumer attitude defines that marketers need to be very careful while handling the consumer data meaning thereby that they must have complete information of the recipients 'demographics so that the right addressees can be approached. Quite appositely our study results also support very strongly the application of pull strategy to mobile-based advertising.

### Theoretical Implications

Current empirical work extended the scope of research beyond pervious research studies as the previous studies (e.g., Aslam et al., 2016; Enwereuzorr, 2017; Gao & Zang, 2016; Martínez-Ruiz et al., 2017) did not consider the demographic variables to study the consumer approach towards unsolicited text-based publicity and promotional drives. The current study proved that demographic variables contribute to defining the customers' attitude towards unsolicited mobile-based marketing related messages, which is a significant addition to the marketing research literature. The study also extended the scope of psychological reactance theory in consumer research. Testing empirically the surface level diversity and linking them with deep level diversity (attitude) of consumes via factorial design also added methodologically to the literature on consumer behavior.

### Managerial Implications

Inferences of the current study in terms of managerial implications can be generalized to other product and service industries. However, with a specific focus on demographic variables the results highlight some guiding principles for marketers to follow. Surprisingly, the study showed that gender do not have a key role in explaining the consumer attitude in Pakistani market, whereas age, education, and profession have an important role in defining the customers' attitude towards unsolicited text messages.

Based on the findings of this research the study recommends that marketing managers should pay more attention to age, education and profession while planning and devising marketing strategies so as to obviate the frustrating and irritating behavior of the consumer. Furthermore, it is recommended that extensive efforts should be exerted in applied market research to spot the right customers keeping in view the age, education, and profession of the customers rather than just using and collecting data regarding gender identification.

In general, the marketing managers tend to track the data based on gender, birth date, location, education, occupation, and the likes and dislikes of the potential customers to be targeted that assist them to figure out the consumer behavior effectually (Hashim & Zolkepli, 2014; Rangunathan et al., 2015). The inferences of current empirical work provide a guiding principle to Pakistani marketing managers to focus on pull based strategy wherein the customers' permission is a pre-requisite to use their data for promotions. This will, for sure, generate a positive response from the customers as they will feel good to be taken into confidence by the companies. The empirical study also calls upon advertising firms and mobile network carriers to observe contemporary advertising norms wherein privacy and permission of using clients' data are upheld and such practices are discouraged which can prompt the negative attitude of the consumer.

In essence, the study strongly recommends close collaboration among the regulatory entities of Pakistan including Pakistan Telecommunication Authority, Pakistan Advertising Association, and Consumer Rights Commission of Pakistan to protect the privacy of the clientele using mobile phones. They must devise a strong mechanism and enact laws to safeguard the consumer data within the framework of the Constitution of Pakistan. Besides, in light of those laws carefully designed policies regarding SMS keeping in view both demographics and psychographics aspects may be implemented for the mutual benefit of both the businesses and their consumer.

## Limitations and Future Directions

Albeit, the study has provided insightful considerations to the companies, it has its own limitations just like other research works. The first limitation being its small sample which may put a limit on the findings to the extent those can be generalized to the general population. However, in factorial design the current sample size is acceptable. Secondly, the data was collected from the respondents within the limited age bracket ranging from 20-50. Lastly, while selecting professions, only a few professions were opted based on purchasing power. In future research, other professions may be considered to validate the findings of this study.

Results of the current study suggest to the future researchers to broaden the scope of their sample size by adding other professions to secure generalizations. Though currently in Pakistan mobile advertisements are being used at massive scale, existing consumer attitude regarding such advertisements may still be at embryonic stage. Future researchers, therefore, need to probe further this aspect for better understanding of customers' attitude towards unsolicited text messages specifically in terms of demographics by including additional features such as income, location and disabilities.

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**Data availability:** Data generated or analyzed during this study are available from the authors on request.

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## APPENDIX A

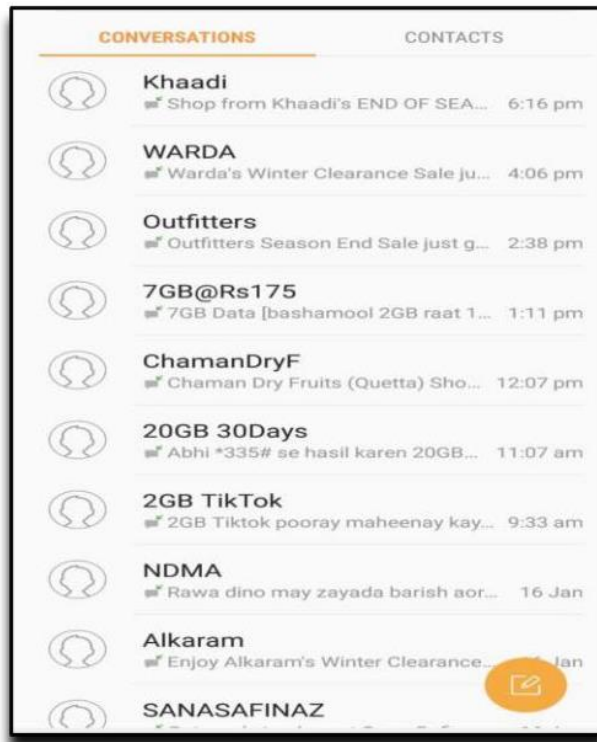


Figure A1. Showing unsolicited mobile-based messages

## APPENDIX B

**Table B1.** Consumer attitude towards unsolicited mobile-based advertisement messages

No	Consumers' attitudes	Scale				
1	Unsolicited mobile-based messages are generally irritating.	1	2	3	4	5
2	Unsolicited mobile-based messages are generally deceptive.	1	2	3	4	5
3	Unsolicited mobile-based advertisement related messages are my references in purchase decision.	1	2	3	4	5
4	I am glad to receive unsolicited mobile advertisement messages on my mobile phone.	1	2	3	4	5
5	I have positive views of receiving unsolicited advertisement related messages on my mobile phone.	1	2	3	4	5
6	Unsolicited mobile-based advertisement related messages are waste of time and are annoying.	1	2	3	4	5
7	I value and like unsolicited mobile-based advertisement messages.	1	2	3	4	5

Note. Anchored by strongly disagree to strongly agree

