The Journal of Contemporary Issues in Business and Government
2020 Volume 26, Number 1, pp 1 - 22

Moderating effect of government regulations on the determinants of customer loyalty for cellular service providers in Pakistan

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Abstract

Customer loyalty has become essential for the survival/success of cellular service providers with the saturation and maturity of the cellular service sector of Pakistan. This research focuses on the direct determinants of customer loyalty of the prepaid segment in the cellular service sector of Pakistan. This study investigates the direct influence of perceived service quality, sales promotion and perceived corporate social responsibility on customer loyalty, and explores the role of government regulations as a moderator that affects the relationship between customer loyalty and its determinants (perceived service quality, sales promotions, perceived corporate social responsibility). This study also provides some valuable insights for the cellular service sector of Pakistan.

Keywords*: Cellular service sector; customer loyalty; perceived service quality, sales promotion, perceived corporate social responsibility; government regulations*

Introduction

The cellular sector is a significant contributor to the development of Pakistan's economy. It is a source of about 50% of foreign investment in Pakistan. This sector consists of four national and multinational cellular service providers with a huge subscriber base of 161.24 million consumers (Pakistan Telecommunication Authority, 2019). Mobilink (a subsidiary of Orascom, an Egypt-based multinational company) is the pioneer and the market leader with the largest market share of 36.82% in the cellular sector of Pakistan (Pakistan Telecommunication Authority, 2019). Mobilink was the service provider that launched the Global System for Mobile Communications (GSM) services in Pakistan in 1994. At that time, it was a high-end service which only affluent people could afford. Telenor is the second-largest cellular service provider in Pakistan with a market share of 27.52% (Pakistan Telecommunication Authority, 2019). Telenor obtained its GSM license in the year 2004 and started its services in 2005 (Telenor, 2016). Zong (a subsidiary of China Mobile Company) started its operations in April 2008 (Zong, 2009) and captured 21.60% of the market within a relatively shorter period of time compared to other cellular service providers in Pakistan (Pakistan Telecommunication Authority, 2019). Ufone (the national cellular service provider of Pakistan) introduced its GSM cellular services in 2001 and currently holds the smallest share of the market with 14.05% subscribers (Jahanzeb, Fatima, & Khan, 2011; Pakistan Telecommunication Authority, 2019). The presence of these four cellular service providers and licensing of 3G/4G technology in 2014 made this sector hyper-competitive and saturated (Pakistan Telecommunication Authority, 2015).

Pakistan has observed considerable growth in the cellular subscriber base within the last 15 years (Pakistan Telecommunication Authority, 2014, 2019). This huge increase of cellular subscribers is driven by government regulations and policies to promote cellular services. However, during the past few years, the cellular sector of Pakistan has fallen short of the government's expectation to contribute to the economic well-being of Pakistan. One of the obvious reasons for this is the lack of customer loyalty in the cellular sector as cellular service providers are spending excessive amounts on attracting new customers and customer retention. At the same time, average revenue per user (ARPU) is decreasing, making the cellular sector less profitable. Since the market is quite competitive and saturated with a high switching rate, Pakistan's cellular service providers are facing difficulty in developing and maintaining loyalty among consumers (Chen & Cheng, 2012; Tariq, Awan, & Ghouri, 2014). One of the outcomes of the lack of customer loyalty is the merger of cellular service providers. For instance, Warid telecom merged with Mobilink in 2018, because Warid telecom had lost significant market share over time (Junaidi, 2017). The instability of the cellular sector can cause harm to the economic well-being of the country as well.

To avoid harm to the economic sustainability of the cellular sector and the country at large the government of Pakistan introduced the Cellular Mobile Network Quality of Service Regulations 2011, which describe the quality of services (QoS) standards for cellular service providers (Pakistan Telecommunication Authority, 2011a). To ensure the quality of services, Pakistan Telecommunication Authority (PTA) performs audits/surveys of QoS and accuracy of billing and visits the customer service centres of cellular service providers (Pakistan Telecommunication Authority, 2011b). All QoS surveys are performed with state-of-the-art drive test tools to analyze the service quality of cellular service providers and the results are shared with the general public after proper analysis (Pakistan Telecommunication Authority, 2016).

Furthermore, the government also plays an important role in regulating the advertising of sales promotion tariffs by publishing a tariff awareness guide. This guide helps consumers to make well-informed decisions regarding the purchase of cellular services (Rab, 2012). In addition, according to the Telecommunication Consumer Protection Regulations (2012), cellular service providers are required to publish all key features of their service packages (Gul, 2016). Moreover, the Telecommunication Policy 2015 clearly states the environmental obligations for the telecommunication sector including the cellular sector of Pakistan. In addition, cellular operators are encouraged to participate in corporate social responsibility activities and encouraged to promote the well-being of society at large.

Though the government has improved the existing regulations governing service quality, sales promotions and corporate social responsibility, there is a lack of empirical studies to address the impact of these government regulations on cellular consumers' behaviour, particularly on customer loyalty (Kumar, Sharma, Shah, & Rajan, 2013). In summary, the objective of this study is to address the lack of empirical evidence on the moderating role of government regulations for the linkages between perceived service quality and customer loyalty, between sales promotions and customer loyalty, and between perceived corporate social responsibility (CSR) and customer loyalty in the cellular sector of Pakistan.

Literature review

Customer loyalty

Oliver (1999) defines loyalty as ''a deeply held commitment to rebuy or re-patronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behaviour" (p. 2). Patrons' loyalty can result in retention since patrons who are loyal to a product/company often make repeated purchases and practice positive word-of-mouth behaviours for the product/company (Clauss et al., 2018). Therefore, academics and practitioners have always emphasized the importance of customer loyalty for organizational profitability, success and survival in the long run. It is an especially important factor in saturated and hyper-competitive markets e.g. the cellular service sector of Pakistan (Hyun, 2010; Kaur & Soch, 2012; Pumim, Srinuan, & Panjakajornsak, 2017). This fact is elaborated by Gerpott, Rams, and Schindler (2001) in the following manner:

> *"Especially in telecommunications services, it is frequently pointed out that once customers have been acquired and connected to the telecommunications network of a particular operator; their long-term relations with the focal operator are of greater importance to the success of the company in competitive markets than they are in other industry sectors (Gerpott et al., 2001, p. 249)."*

Similarly, Kaur and Soch (2012) and Morgan and Govender (2017) argued that considering the severe competition and high acquisition costs, the most effective marketing strategy in the cellular service sector is retaining current customers by heightening their loyalty. Since cellular markets are becoming saturated and have matured worldwide with high penetration rates, new customer acquisition has become more difficult and expensive (Jeng & Bailey, 2012). Hence, cellular service providers are focusing more on customer retention than just customer acquisition, because customer loyalty is less expensive and generates more profitability (Amin et al., 2017; Kisioglu & Topcu, 2011).

Past studies revealed that perceived service quality, sales promotions, and perceived CSR are important direct determinants of customer loyalty (Asiamah, Quaye, & Nimako, 2016; Chang & Yeh, 2017; Kiran & Diljit, 2017; Makanyeza & Chikazhe, 2017; Morgan & Govender, 2017). However, there is a lack of empirical research into the impact of these determinants on customer loyalty despite the fact that the Pakistani cellular sector heavily relies on improvement in service quality, sales promotions and corporate social responsibility as tools to engage customers in continued patronage and generation of loyalty (Bhatti, 2007; Chattha, Naqi, & Haroon, 2016; R. Khan, 2016).

Perceived service quality and customer loyalty

Perceived service quality has been extensively studied as a determinant of customer loyalty in cellular and non-cellular service settings. However, studies on perceived service quality and customer loyalty are diverse regarding the selection of sub-dimensions of the SERVQUAL model, which originally has five dimensions (i.e. reliability, assurance, tangibles, empathy and responsiveness). For example, Boohene and Agyapong (2011) used eight sub-dimensions to operationalize SERVQUAL (i.e. tangibles, reliability, responsiveness, competence, courtesy, security, access and communication) for understanding the relationship between service quality and customer loyalty. Malik, Naeem, and Arif (2011) who studied service quality in the banking sector, omitted responsiveness and reliability from their measurement model. Moreover, many authors like Santouridis and Trivellas (2010) used networks, value-added services, mobile devices, customer services, billing systems and pricing structure to study service quality in relation to customer loyalty. Lee (2010) on the other hand used a unidimensional variable where the overall service quality was used to study service quality in the cellular industry of Korea. Likewise, Lai, Griffin, and Babin (2009) and Anjum, Rizwan, Khaleeq, and Rasheed (2013) combined all five components of SERVQUAL and studied service quality as a unidimensional variable in the Chinese and Pakistani cellular sector. However, Razavi, Safari, Shafie, and Khoram (2012) and Alnsour et al. (2014) operationalised perceived service quality as five sub-dimensional measures. Izogo and Ogba (2015) also used the SERVQUAL sub-dimensional approach, but replaced assurance (one of the SERVQUAL sub-dimensions) with commitment. Most of these studies considered the SERVQUAL model as a reflective construct which may lead to misspecification of the SERVQUAL model. The more robust conceptualization such as used by Ananthanarayanan Parasuraman, Zeithaml, and Malhotra (2005), Rabaai and Gable (2012) and Rossiter (2002) specify SERVQUAL as a formative construct. Hence, to overcome the potential bias in results due to model misspecification (Jarvis, MacKenzie, & Podsakoff, 2003), our study operationalised the SERVQUAL Model as a formative-reflective construct (details are given in measures section). The existing body of knowledge on loyalty has shown that perceived service quality is an important building block for improving business performance, especially in the long run, to reduce churn and eventually gain loyalty (Alnsour, Abu Tayeh, & Alzyadat, 2014; Hong & Lee, 2018; Izogo & Ogba, 2015; Johnson & Sirikit, 2002; Premkumar & Rajan, 2017; Santouridis & Trivellas, 2010; Srinuan, Tsani Annafari, & Bohlin, 2011). Hence, the following hypothesis is proposed:

H1: Perceived service quality has a positive effect on customer loyalty.

Sales promotions and customer loyalty

A sales promotion is a marketing activity that tries to stimulate customers to generate a purchase or repurchase behaviour (Blattberg & Neslin, 1990). In other words, sales promotions are aimed at not only grabbing the attention of customers but also offering them some benefits for buying a particular product or service (Omotayo, 2011) and generating repeat purchases in the future (Tung, Kuo, & Kuo, 2011). It also helps consumers to choose among the competing brands (Alvarez & Casielles, 2005). The

objective of a sales promotion is to appeal to new customers, maintain existing customers who are planning to switch brands and provide incentives to customers to stay loyal to a company (Park, Choi, & Moon, 2013). Moreover, it also creates customer loyalty by gaining a competitive advantage in the market. Additionally, after receiving a sales promotion, consumers repurchase and recommend the seller to others (Tung et al., 2011). Likewise, it is also claimed that if a customer bought a product due to attractive incentives offered by sales promotion and was satisfied, that customer is more likely to rebuy the product again in the future (Adjei & Denanyoh, 2014). This argument is particularly true for those who have not used that product previously (Peattie & Peattie, 1995).

The review of the literature reveals diverse findings about the impact of sales promotions on customer loyalty. For example, Khurshid (2013) conducted a study exploring the direct impact of sales promotion on customer loyalty in the cellular sector of Pakistan and found a significant positive result. Likewise, Asiamah et al. (2016) and Adjei and Denanyoh (2014) studied the same relationship in cellular sectors with similar results. Furthermore, some studies in non-cellular settings also had similar results (Dutsenwai, Abdullah, Jamak, & Noor, 2015; Sundari, 2015). Other studies though suggest that sales promotions lead toward the purchase or re-purchase but do not generate customer loyalty (Gedenk & Neslin, 1999). For example, in the past studies of Asiamah et al. (2016) as well as Hossain and Suchy (2013) in the cellular sector, Dubey (2014) in the cosmetics industry, and Gedenk and Neslin (2000) in the retail industry found that sale promotions do not lead to customer loyalty. These diverse results warrant further examination of the role of sales promotions in generating customer loyalty in the cellular services sector of Pakistan. Hence, the following hypothesis is proposed:

H2: Sales promotion has a positive effect on customer loyalty

Perceived corporate social responsibility and customer loyalty

Corporate social responsibility (CSR) can be defined as the actions taken to encourage and promote social well-being beyond a firm's legal and contractual obligations (Williams & Siegel, 2001). Carroll (1979, p. 500) defines CSR as "economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time". Organizations fulfil these expectations in different ways, including introducing community outreach programs, contributing to charities through donations, reducing environmental impact and improving employee diversity (Albinger & Freeman, 2000).

The extant literature suggests that customer loyalty is associated with customers' perception of the extent of social responsibility of the firm (Irshad, Rahim, Khan, & Khan, 2017; Sindhu & Arif, 2017). Additionally, research reveals that customers are likely to buy more services or products from socially responsible firms (Maignan, Ferrell, & Hult, 1999; Su, Huang, Veen, & Chen, 2014). Accordingly, customers value the participation of firms in philanthropy programs, sponsorship of cultural events, and support of social events, among other initiatives (Kodua & Mensah, 2017; Martínez, Pérez, & Bosque, 2014). Other studies, however, did not find any relationship between perceived CSR and customer loyalty. For instance, Chang and Yeh (2017) in the transportation industry, Mandhachitara and Poolthong (2011) and Barcelos et al. (2015) in banking sector did not find the relationship between CSR and customer loyalty to be statistically significant. The inconsistency in results might be attributed to the contextual setting, highlighting the need to examine this relationship in the Pakistani cellular service sector. Most studies into the relationship between CSR and customer loyalty have been conducted in non-cellular service settings (Barcelos et al., 2015; Chang & Yeh, 2017; Chung, Yu, Choi, & Shin, 2015; Lee, Chang, & Lee, 2017; Mandhachitara & Poolthong, 2011; Su et al., 2014). There are only

a few studies addressing the impact of CSR on customer loyalty in the cellular service sector(Kodua & Mensah, 2017; Sindhu & Arif, 2017). However, there is a lack of research in the cellular service sector of Pakistan. Hence, the following hypothesis is proposed:

H3: Perceived CSR has a positive effect on customer loyalty

The moderating role of government regulations

The government of Pakistan plays a significant regulatory role in the cellular sector by developing quality of service standards, creating a sales promotions tariff awareness guide, and promoting the cellular service providers' participation in CSR, as already mentioned. However, the literature concerning the role of government regulations in the cellular service sector is scarce. Studies such as Park, Yeon, Kim, Kim, and Ha (2005) have examined the influence of government regulations in the cellular service sector of Korea and found it significantly influence cellular subscribers' behaviour. Similarly, Abbasi, Khuhawar, Khumbhati, and Khuhawar (2016) highlighted the impact of government regulations on the average revenue per user, market share and subscriber base of the cellular service sector of Pakistan with the help of descriptive statistics. However, this study did not empirically test the moderating role of government regulations on the loyalty of cellular consumers in Pakistan. Furthermore, Kumar et al. (2013) using interviews from the United States, Canada, Europe, Asia, and Australia proposed a conceptual framework to study the moderating effect of government regulations in the relationship between perceived service quality, sales promotion, and customer-specific attitudinal variables to achieve customer loyalty. They highlighted the need to empirically examine the moderating role of government regulations for nurturing customer loyalty in the emerging economies of Asia.

The previous literature concerning government regulations (whereby government regulations are synonymous with external factors) (Chien & Shih, 2007) in the domain of perceived behavioural control (Kiriakidis, 2017) supports the moderating influence of external factors on the relationship of customer attitudes and behaviour (Fishbein & Ajzen, 2011; Hennessy, 2012; Sheeran & Abraham, 2003). According to Baron and Kenny (1986), moderating variables are established in a situation where an irregular / inconsistent relationship exists between a predictor and a criterion variable. Past studies provide inconsistent results for the relationship between perceived service quality, sales promotion, and perceived CSR (Chang & Yeh, 2017; Morgan & Govender, 2017; Santini, Vieira, Sampaio, & Perin, 2016; Sindhu & Arif, 2017). Hence, this study, keeping in view the scarcity of existing literature on the moderating role of government regulations on the relationship between perceived service quality, sales promotions and perceived CSR of the firm and customer loyalty, proposes the following hypotheses:

H4a: Government regulations moderate the relationship between perceived service quality and customer loyalty positively.

H4b: Government regulations moderate the relationship between sales promotions and customer loyalty positively.

H4c: Government regulations moderate the relationship between CSR and customer loyalty positively.

Methodology

Sample

The pre-paid cellular consumers of Pakistan are considered the sample of this study. Pakistan is divided into four geographical regions (strata) with Punjab accounting for 56.23% of the population, Sindh 23%, Khyber Pakhtoonkhan (KPK) 13.41% and Baluchistan 7.36% of the population. Data is collected from the capital cities of each region which are Lahore (Punjab), Karachi (Sindh), Peshawar (KPK) and Quetta (Baluchistan). The number of questionnaires collected from each geographical region is proportionate to its population size. Table 1 shows the population proportions for each of the four regions and the number of questionnaires distributed.

Table 1. Sample size calculation

Province	Population	Proportion	Questionnaire Proportion
Punjab (Lahore)	108671644.5	56.23%	216
Sindh (Karachi)	44446360.94	23%	88
KPK (Peshawar)	25908548.9	13.41%	52
Baluchistan (Quetta)	14224587.66	7.36%	28
Total	**193251142**	**100%**	**384**

Source: Pakistan Bureau of Statistics

Data collection procedure

This study collected data using personally administered questionnaires. Customer service centres are the hub of cellular services (Okibo & Ogwe, 2013; Siddique, Akterujjaman, & Perveen, 2012) and offer a full range of services which are exclusively available at customer service centres (Mustafa, 2016; Ufone, 2017). Data was collected from customers who visited the main customer service centres of each cellular service provider in Lahore, Karachi, Peshawar and Quetta using mall intercept approach. Past studies conducted in Pakistani (Ahmad, Hussain, & Rajput, 2015; Butt & de Run, 2009; Danish, Ahmad, Ateeq, Ali, & Humayon, 2015; M. A. Khan, 2010) and non-Pakistani settings (Hafez & Akther, 2017; Morgan & Govender, 2017) have also used a similar sampling technique for studying the determinants of customer loyalty in the cellular services sector. A total of 384 questionnaires were returned recording a response rate of 64%, which is comparable to the response rates of past studies in the cellular service sector of Pakistan (Iqbal & Shah, 2016; Rasool, Kiyani, Siali, Ting, & Shakur, 2017). Overall, a total of 600 questionnaires were distributed. The total count of returned and useable questionnaires was 384, hence the study recorded a response rate of 64%.

Measures

The SERVQUAL instrument proposed by Parasuraman, Berry, and Zeithaml (1991) is adapted to assess perceived service quality in this study, which consists of five dimensions: reliability (5 items), assurance (4 items), tangibles (4 items), empathy (6 items) and responsiveness (4 items). Most of the past studies operationalized SERVQUAL as reflective constructs whereby the latent variable (perceived service quality) reflects the indicators (sub-dimensions) (Morgan & Govender, 2017; Rossiter, 2002). Since SERVQUAL is a summative judgment based on five dimensions, this makes it a second-order formative construct. First-order constructs have a single layer of components, e.g. customer loyalty in our study does not have any further dimensions; however, the second order constructs often contain two layers of components, e.g. SERVQUAL has five further dimensions. According to Jarvis et al. (2003) and Hair, Sarstedt, Ringle, and Gudergan (2017), when the items/sub-dimensions are not interchangeable and

every item/sub-dimension captures a unique part of a construct, the construct is formative. This operationalization of the SERVQUAL model has received widespread support in the literature (Collier & Bienstock, 2006, 2009; Ladhari, 2009; Ananthanarayanan Parasuraman et al., 2005; Rabaai & Gable, 2012). Hair et al. (2016) and Jarvis et al. (2003) suggested that to study formative constructs there is a need for a global item to assess the overall conceptual meaning of the formative construct. Furthermore, the global item is added because the formative construct needs to be theoretically/conceptually refined by adding one global item (Hair, Hult, Ringle, & Sarstedt, 2016). It is also required to summarize the essence of the construct (Sarstedt, Ringle, & Hair, 2014). Hence, one global item is also adapted from Ananthanarayanan Parasuraman et al. (2005) to assess the overall service quality on a seven-point Likert scale in addition to the 22 items of SERVQUAL.

The scale for sales promotions is adapted from Buil, Chernatony, and Martínez (2013) and is two dimensional: monetary sales promotions (4 items) and non-monetary sales promotions (4 items). According to Hair et al. (2017) constructs that have multiple dimensions with a similar theme and conceptual unity are considered composite formative constructs. As sales promotion consists of two dimensions (monetary and non-monetary) with conceptual unity, it is considered a composite formative construct in the current study. Moreover, Jacob and Jacob (2017) also support sales promotions as a formative construct. In addition, one global item is adapted from Sirohi, Laughlin, and Wittink (1998) to summarize the overall crux of the construct.

The scale for perceived CSR is adapted from Lee, Park, and Pae (2011). It is a one-dimensional scale consisting of five items. Based on the criteria given by Jarvis et al. (2003) this study operationalized it as a reflective construct.

The scale for government regulations is adapted from Jain and Goel (2012). This is a one-dimensional formative construct consisting of four items to represent composite formative indicators of government regulations (Coltman, Devinney, Midgley, & Venaik, 2008; Hair et al., 2017; Thongrattana, 2010). It is composite in the way that it includes the following items: defining minimum quality standards, testing the quality of services, marketing activities, protecting and promoting the interests of consumers. All these items contribute to defining the role of government regulations as a whole. Item 5 is a global item which summarizes the essence of the construct.

The scale for customer loyalty consists of five items adapted from Karjaluoto, Jayawardhena, Leppäniemi, and Pihlström (2012). It is also a first order reflective scale. All the items were measured by using a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

A pre-test was performed with 5 participants employing the debriefing method (semi-structured interviews were conducted to explain the questionnaire) to seek qualitative feedback from the participants. The feedback sought was for the elimination of potential problems regarding questionnaire design and for the enhancement of the comprehensiveness of the survey instructions (Bazera, 1996; Hunt, Sparkman, & Wilcox, 1982). The common method variance is the systematic variance shared among the variables due to the design of instrument rather than actual disposition of respondents that the instrument is supposed to measure, suggesting that the instrument is biased. One of the ways to reduce the common method variance is to use procedural remedies including reflective and formative scale in the same instrument Hence, for this study common method variance is considered not as an issue because of the presence of both reflective and formative variables in the instrument (Hair et al., 2016; Hiram, Chuah, Cheah, Memon, & Yacob, 2015).

Respondents Profile

The demographic profile of the respondents shows (see Table 2) that there were 54% male and 46% females in our sample. Moreover, most of the respondents are in the 18-28 years ge group of , making it 50% of sample. Additionally, 33% of the sample is in the 29-39 years age group. The age groups of 40-49 years, 50-59 years and 60 years and above make up 10.6%, 3.4% and 2.3% of total sample respectively. A majority of the respondents (36.1%) have an education level above intermediate (A-Levels) or bachelor's degree (38.10%). More than 50% of the respondents have an income of less than Pakistani rupees 15000 to 32000 per month.

Table 2. Respondents' demographic profiles

Demographics	Frequency	Valid Percentage (%)
Gender		
Male	210	54.10
Female	178	45.90
Age		
18-28 years	194	50.00
29-39 years	131	33.80
40-49 years	41	10.60
50-59 years	13	3.40
60 years and above	9	2.30
Education		
Middle and Below	14	3.60
Matric	27	7.00
Intermediate	140	36.10
Bachelor	148	38.10
Masters and above	59	15.20
Average Income		
Below PKR. 15000	88	22.70
PKR. 15001- 32000	149	38.40
PKR. 32001- 49000	48	12.40
PKR. 49001-66000	38	9.80
PKR. 66001- 83000	20	5.20
PKR. 83001-100,000	35	9.00
PKR. 100,001 and above	10	2.60

Data Analysis

This study consists of both reflective and second-order formative constructs (higher-order constructs), so based on the suggestion of Becker, Klein, and Wetzels (2012) a sequential latent variable score method (also known as two-stage approach) with the help of smart PLS 3.2.7 is employed for data analysis. This approach helps to determine the latent variable scores (LVS) for first-order reflective constructs (Chin, 1998; Lohmöller, 2013; Tenenhaus, Vinzi, Chatelin, & Lauro, 2005). These estimated LVS are used to estimate the first-order reflective constructs in the first stage (in the absence of second-order formative constructs), later, in a separate second stage, these LVS are used as indicators for second-order formative constructs (Agarwal & Karahanna, 2000; Becker et al., 2012; Hiram et al., 2015;

Wetzels, Schröder, & Oppen, 2009; Wilson & Henseler, 2007), which at the end is used for path modelling and structural model assessment.

According to Hair et al. (2016), it is necessary to specify the model operationalization to avoid type I and type II errors (Diamantopoulos & Winklhofer, 2001; Edwards & Bagozzi, 2000). Hence, this study considered perceived service quality, sales promotions and government regulations as formative whereas perceived CSR and customer loyalty are considered as reflective constructs. Following the two-stage processes suggested by Anderson and Gerbing (1988), this study first assessed the measurement model (construct validity and reliability of the multiple-item measures). The structural model was then generated for the test of the hypothesized associations (see Hair et al. 2013; Ramayah et al., 2011, 2013).

The measurement model evaluation criteria for reflective and formative constructs are different (Hair et al., 2016). Hence, to access the internal consistency and convergent validity of reflective constructs, outer loadings, average variance extracted (AVE), and composite reliability (CR) are reported. In addition, discriminant validity (DV) is assessed using the Fornell and Larcker (1981) criterion. However, for formative constructs multi-collinearity with the help of variance inflation factor (VIF), outer weights significance after bootstrapping are reported. To test the significance of the direct path coefficients and moderation analysis a bootstrapping method is used (Hair et al., 2013).

Assessment of reflective measurement model

The results in Table 3 show that outer loadings of all reflective constructs are above the minimum threshold of 0.50 as suggested by Hair et al. (2016) and achieved internal consistency. Similarly, the results of composite reliability (CR) show that all reflective constructs are above the threshold value of 0.70 and are reliable enough to conduct further analysis (Hair et al., 2016). Furthermore, the constructs demonstrate sufficient convergent validity, which is well above the threshold of 0.50 and reveal that all the items explain more than 50% of the variance in each respective construct (Hair, Hult, & Christian, 2013).

The discriminant validity is assessed using Fornell and Larcker (1981) criterion, where the results in Table 4 show that all square roots of AVE of each construct are larger than the correlation estimates of the constructs. Hence, discriminant validity is also established for all reflective constructs.

Assessment of formative second-order constructs

Convergent validity is assessed with the help of redundancy analysis. The results of the redundancy analysis are given for each of the formative constructs in Table 5. The results reveal that the path coefficients of all the formative latent constructs (perceived service quality, sales promotions and government regulations) have achieved the minimum threshold of 0.50 in the redundancy analysis. Thus, all the formative constructs under study have established convergent validity.

Table 6 exhibits the assessment of formative second-order constructs. All the VIF values for each of the formative constructs are well below the threshold of 5 (Diamantopoulos & Siguaw, 2006), depicting that all the constructs are different from each other and cannot be interchanged. The last step in assessing the formative measurement model is testing the nomological validity of the outer weights and their significance after running the bootstrapping procedure in Smart PLS version 3.2.7.

Table 3. Internal consistency and convergent validity of reflective constructs

First Order Reflective Constructs	Item	Loadings	AVE	CR
Reliability (Rel)	Rel1	0.824	0.749	0.937
	Rel2	0.856		
	Rel3	0.876		
	Rel4	0.895		
	Rel5	0.873		
Assurance (As)	As1	0.865	0.705	0.905
	As2	0.823		
	As3	0.815		
	As4	0.854		
Tangibles (Tan)	Tan1	0.831	0.712	0.908
	Tan2	0.824		
	Tan3	0.863		
	Tan4	0.855		
Empathy (Emp)	Emp1	0.827	0.715	0.926
	Emp2	0.863		
	Emp3	0.873		
	Emp4	0.811		
	Emp5	0.853		
Responsiveness (Resp)	Resp1	0.878	0.773	0.932
	Resp2	0.902		
	Resp3	0.846		
	Resp4	0.890		
Monetary Sales Promotions (SPM)	SPM1	0.887	0.740	0.919
	SPM2	0.909		
	SPM3	0.878		
	SPM4	0.758		
Non-Monetary Sales Promotions (SPN)	SPN1	0.735	0.623	0.868
	SPN2	0.723		
	SPN3	0.840		
	SPN4	0.851		
Perceived PCSR	PCSR1	0.864	0.802	0.953
	PCSR2	0.914		
	PCSR3	0.911		
	PCSR4	0.896		
	PCSR5	0.892		
Customer Loyalty (CL)	CL1	0.846	0.766	0.942
	CL2	0.897		
	CL3	0.907		
	CL4	0.890		
	CL5	0.834		

Table 4. Discriminant validity using Fornell and Larcker's (1981) Criterion

	As	CL	Emp	PCSR	Rel	Resp	SPM	SPN	Tan
As	0.840								
CL	0.724	0.875							
Emp	0.837	0.744	0.846						
PCSR	0.545	0.645	0.576	0.896					
Rel	0.759	0.762	0.775	0.625	0.865				
Resp	0.766	0.767	0.777	0.620	0.839	0.879			
SPM	0.593	0.643	0.628	0.729	0.644	0.618	0.860		
SPN	0.590	0.614	0.565	0.779	0.597	0.607	0.783	0.789	
Tan	0.710	0.639	0.742	0.485	0.736	0.696	0.499	0.495	0.844

Note: Diagonal elements highlighted in bold represent the square root of AVE. Off-diagonal elements are bivariate correlations between the constructs.

Table 5. Convergent validity of formative measurement model

Construct	Global Item	Path Coefficient
Perceived Service Quality	GPSQ	0.744
Sales Promotions	GSP	0.693
Government Regulations	GGR	0.857

Note: GPSQ: Global perceived service quality indicator, GSP: Global sales promotion indicator, GGR: Global government regulations indicator

The results (Table 6) for second-order formative construct perceived service quality showed that all the sub-dimensions: reliability, responsiveness, assurance and empathy are significant (P value < 0.05), except tangibles, (P value < 0.49). However, according to Hair et al. (2016), when an indicator's/construct's outer weight is non-significant but its outer loading is high (i.e., above 0.50), the indicator should be interpreted as absolutely important so in that case, the indicator/construct is retained. Additionally, according to literature tangibles (Tan) is an important construct for measuring perceived service quality (Malik et al., 2011; Mokhtar, Maiyaki, & Mohd Noor, 2011; A. Parasuraman, Zeithaml, & Berry, 1985, 1988) and it has a higher outer loading (Tan=0.782). So it is retained to conduct further analysis. Similarly, both monetary sales promotions and non-monetary sales promotions have significant relationships with sales promotions (P value < 0.01). Furthermore, all the indicators of government regulations: GR1, GR2, GR3, GR4 are significantly relevant for measuring government regulations (P value < 0.01). Hence, second-order formative constructs also possess convergent validity

Table 6. Outer weights path significance and multi-collinearity

Paths	Paths	Outer-weights	Outer-loadings	SD	T Value	P Values
Rel → PSQ	Rel → PSQ	0.318	0.932	0.091	3.497	0.000
As → PSQ	As → PSQ	0.162	0.886	0.083	1.958	0.025
Tan → PSQ	Tan → PSQ	-0.001	0.782	0.075	0.016	0.494
Emp → PSQ	Emp → PSQ	0.261	0.910	0.091	2.860	0.002
Resp → PSQ	Resp → PSQ	0.344	0.938	0.087	3.948	0.000
SPM → SP	SPM → SP	0.629	0.964	0.089	7.100	0.000
SPN → SP	SPN → SP	0.428	0.920	0.092	4.661	0.000
GR1 → GR	GR1 → GR	0.261	0.757	0.057	4.601	0.000
GR2 → GR	GR2 → GR	0.240	0.903	0.078	3.077	0.001
GR3 → GR	GR3 → GR	0.361	0.930	0.080	4.523	0.000
GR4 → GR	GR4 → GR	0.277	0.902	0.076	3.635	0.000

Assessment of structural model

Before assessment of the structural model, it is necessary to check the multi-collinearity of the inner model. Table 7 shows that the VIF values of the inner model are well below the threshold of 5 (Diamantopoulos & Siguaw, 2006). Table 7 also illustrates the results of the hypotheses by assessing the P values and path coefficients after bootstrapping procedure with 5000 sub-samples. According to the results, perceived service quality is found to be a significant determinant of customer loyalty (H1: PSQ →CL, ß = 0.470, P < 0.00), hence accepting H1. However, sales promotions is not found to be statistically significantly related to customer loyalty (H2: SP →CL, ß = 0.081, P < 0.063) which leads to a rejection of H2. Similarly, H3 is rejected as perceived CSR does not prove to be a significant determinant of customer loyalty (H3: PCSR →CL, ß = 0.071, p <0.075). In addition, table 7 assessed the coefficient of determination (R2), the effect size (f 2), and the predictive relevance (Q2) of exogenous variables on an endogenous variable (i.e. customer loyalty in this study). The results suggest that R2 value for customer loyalty is 0.710 suggesting that perceived service quality, sales promotions and perceived CSR explain 71% variance in customer loyalty. Subsequently, Q2 value for customer loyalty which is 0.697 demonstrates that perceived service quality, sales promotions and perceived CSR have enough predictive capacity over customer loyalty as suggested by Hair et al. (2013). Likewise, the f 2 values reveal that perceived service quality has a large effect on customer loyalty (f 2 = 0.179) (Hair et al., 2017).

Table 7. Direct paths assessment

Paths	ß	SD	T Values	P Values	VIF	R^2	Q^2	f^2
PSQ → CL	0.470	0.063	7.438	0.000	4.258	0.710	0.697	0.179
SP → CL	0.081	0.053	1.534	0.063	3.199			0.007
PCSR → CL	0.071	0.049	1.439	0.075	3.137			0.006

Note: Bootstrapping with 5,000 subsamples (1 tail test)

Moderation analysis

As suggested by the results shown in Table 8, the first interaction term PSQ*GR is not statistically significant (β=0.019, t=0.477, P<0.317). Hence H4a is not supported. However, for H4b, it is clear that the interaction effect SP*GR is statistically significant (β=0.144, t=2.278, P<0.05). Hence, H4b is supported. In addition, the interaction effect PCSR*GR is statistically significant (β= 0.102, t=1.793, P<0.05). Hence, H4c is supported.

Table 8. Moderation effect

	ß	SD	T Values	P Values
PSQ*GR →CL	0.019	0.040	0.477	0.317
SP*GR → CL	0.144	0.063	2.278	0.011
PCSR*GR → CL	0.102	0.057	1.793	0.037

Note: Bootstrapping with 5,000 subsamples (1 tail test).

Discussion and conclusion

This study hypothesized three direct determinants of customer loyalty: perceived service quality, sales promotions and perceived CSR. According to the results, perceived service quality was found to be a significant determinant of customer loyalty, however, sales promotions and perceived CSR do not influence customer loyalty. These results explain the importance of perceived service quality for the

generation of customer loyalty in the cellular sector of Pakistan. This implies that those cellular service providers who focus on tangible aspects of their service centres, offer reliable services, and have responsive employees who perform their tasks properly and show empathy to their cellular consumers, have a higher chance of creating and retaining loyal consumers. Another reason for the importance of service quality in the cellular sector of Pakistan highlighted by Jahanzeb et al. (2011) is the fierce competition in the sector, and price reduction as a common strategy is losing significance for developing loyalty among the consumers in Pakistan. Since this is the era of globalization and consumers are well aware of their rights, better service quality leads towards customer loyalty.

This study hypothesized moderating effects of government regulations on the relationship between customer loyalty and direct determinants of customer loyalty. According to Kenny (2018), the moderating variable changes/alters the direct relationship (proposed in the absence of the moderator). In our study, otherwise statistically insignificant direct relationships (H2 and H3) became statistically significant in the presence of the moderator (H4b and H4c). In other words, the government regulations moderate the relationship between sales promotions and customer loyalty positively, supporting H4b. These findings indicate that when the government supports cellular consumers by introducing the sales promotion consumer awareness guide it helps to increase customer loyalty towards the cellular service provider. Similarly, the results support H4c where government regulations positively moderate the relationship between perceived CSR and customer loyalty. This finding suggests that the government regulation targeting corporate social responsibility help cellular service providers enhance customer loyalty via CSR.

These findings of the determinants of customer loyalty highlight the importance of service quality in creating customer loyalty in the cellular service sector

Most importantly, this study foregrounds the moderating role of government regulations for generating customer loyalty in the cellular sector of Pakistan, thus highlighting implications for the government. The government can play a significant role in developing a progressive environment for the cellular service sector of Pakistan. In addition, it can create and maintain the competitive environment which can be beneficial for all stakeholders including consumers, cellular service providers and the economy overall. This research is the first attempt to incorporate government regulation as a theoretical concept into the loyalty generation framework. The findings of the present study imply that cellular service providers should follow government regulations to enhance customer loyalty.

Limitations and future research agenda

This research has limitations. Firstly, the data is collected from urban areas only. Future research should be conducted in rural areas as well. A comparative analysis can be conducted to determine the difference between geographical areas (urban vs rural). Secondly, this study is confined to pre-paid consumers only. Future studies should incorporate post-paid consumers as well to conduct a multi-group analysis to understand the determinants of customer loyalty for the two groups (pre-paid and post-paid consumers). Thirdly, the determinants of customer loyalty could be studied for other services including financial services, internet services etc. Lastly, future studies could analyze more complex moderation and mediation models to further understand the effect of government regulations on customer loyalty in the highly dynamic cellular service sector of Pakistan.

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