How Important Is Customer Satisfaction? Quantitative Evidence from Mobile Telecommunication Market

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Abstract

To investigates the importance of customer satisfaction in Pakistani mobile telecommunication market. This study explores whether customer satisfaction affects the relationship between customer loyalty and service quality, and also between customer loyalty and perceived value. The study found the coefficient of determination (R^2) for the overall model to be considerable. The role of customer satisfaction was significant in assessing the contribution of exogenous constructs to the R^2 value of endogenous constructs ($f^2 > 0.35$). All exogenous constructs in the model had good predictive relevance for endogenous constructs, as Q^2 value was above the threshold (0.156 for customer satisfaction, and 0.467 for customer loyalty). The q^2 effect size of customer satisfaction on customer loyalty is large ($q^2 = 0.448$). VAF accounted for more than 80% of both indirect effects, indicating the importance of customer satisfaction on the relationship between service quality and customer loyalty, and between perceived value and customer loyalty.

Keywords: customer loyalty, customer satisfaction, service quality, perceived value, Pakistan, PLS-SEM

1. Introduction and Background

Mobile phone services are one of the most promising growth areas in the telecommunication industry, with more than 1.7 billion subscribers worldwide, and about 80% of the world population as the potential target (Farid, 2010). Mobile phone service providers thus operate in a competitive environment. Effective strategies to meet the demands of competition need to consider the factors that affect their performance (Lim, Widdows, & Park, 2006). Customer satisfaction is a major factor contributing to the success of any organisation. It influences customer loyalty, which, in turn, affects business performance (Gerpott et al., 2001). Studies on mobile phone service in the United States have shown that the level of customer satisfaction is much lower for cellular services compared to other service sectors (Customer Report, 2005; McKinsey Quarterly, 2004).

Research shows that each dissatisfied customer communicates their experience to an average of 5 to 15 people, of whom 13% continue the chain of negative promotion by disseminating contrary feedback to 10 more potential customers (Harari, 1992). Dissatisfied customers may not worry about losing their numbers, as they can request for a churn. For telecommunications companies, the average annual churn rates lie between 10 to 67% (Hughes, 2007). According to Aydin and Ozer (2005), telecommunication companies lose 2 to 4% of their customers every month, and these "disloyal" customers amount to a loss of millions. According to a study conducted in Malaysia by the Malaysian Communication and Multimedia Commission (2007), 28.1% of users switched to an alternative service provider in three months. Introduction of new value-added services and reduction of tariff may be some of the strategies used to uphold customer loyalty.

Retaining loyal customers is an important factor for the sustainable success of the telecommunication industry, because the paradigm in marketing has shifted from acquiring new customers to maintaining and keeping current customers. According to Reichheld and Sasser (1990), acquiring new customers is far pricier than their maintenance. Goodman et al. (2000) explained that the cost of acquiring new customers is two to 20 times more expensive than keeping them. Brown (2004) also pointed out that mobile operators spend USD 300 to obtain new customers. Since it is dearer to attract new customers than to maintain existing ones, mobile phone service providers need to pay particular attention to customer loyalty. However, before embarking on any strategy to maintain existing customers, it is important to gauge the determinants of customer loyalty.

1.1 Motivation for the Study

Compared to other industries, customer loyalty in the telecommunication industry is more crucial, since customers can change service providers easily, given the high level of competition. In Pakistan, for instance, Mobilink owns 29 percent market shares in 2013, in June 2014 their market shares were decreased to 28 percent, the survey further projected that the market shares will be decreased to 27 percent by the mid of 2016P. In contrast, the market shares of Telenor has increased from 25 percent in 2013 to 29 percent in 2016P. Despite the historical lead of Mobilink, the extend of competition is still on the boundary (Note 1). Therefore, this study made an attempt to investigate the importance of customer satisfaction with a focus on Mobilink customers.

2. Review of Literature

2.1 Factors Affecting Customer Satisfaction and Customer Loyalty

A lot of research has been conducted to identify the factors crucial in influencing various industries, such as airlines, financial services, tourism, etc. Factors such as commitment, service fairness, switching barrier, communication, conflict handling, price fairness, and relational benefit are some of the determinants of customer satisfaction and customer loyalty. The determinants vary depending on the scope of the particular industry. Commitment, service fairness and conflict handling, for instance, have been largely used as determinants of customer loyalty in the financial services industry; whereas relational benefit and switching barrier are important in the airline industry. Price fairness is a crucial determinant of customer satisfaction and customer loyalty in service industries such as auto repairs and maintenance.

Factors used in the study of customer satisfaction and customer loyalty related to telecommunication include perceived value, trust, switching cost, customer satisfaction, corporate image, and service quality (Shamsundin, 2010). Aydin and Ozer (2005) exclude corporate image from the list, as they did not find a correlation between corporate image and customer loyalty. Studying the perception of Chinese customers, Han et al. (2008) found that commitment, trust, service quality, and customer satisfaction were the key determinants of customer loyalty. Similarly, Chang and Chen (2007) collected data from Taiwanese airline passengers and identified that relational benefits had some effect on customer loyalty. Akbar et al. (2010) reveal that service quality and customer loyalty had a positive and significant correlation. A similar correlation was also found by Hoq and Amin (2009) between customer satisfaction and customer loyalty. Trust as a key influencing factor of customer loyalty was identified by Omar et al. (2009). Additionally, Alam et al. (2016) cited the same concern.

Overall, findings from research on customer satisfaction and customer loyalty in several industrial sectors from 2001 to 2016 suggest that service quality, perceived value, and customer satisfaction are the crucial factors influencing customer loyalty. In this study, these four common constructs will be used. To identify the importance of customer satisfaction in the context of Pakistani Mobilink telecommunication market its dual aspects (exogenous and endogenous) was considered. We further take into account perceived value and service quality as exogenous constructs whilst customer loyalty as endogenous construct see Figure 1.

2.1.1 Customer Loyalty

Edvardsson et al. (2000) define customer loyalty as the desire or propensity of customers to buy on a continual basis from the same firm. According to Caruana (2004) and Keropyan and Gil-Lafuente (2012), customer loyalty is a deep commitment to repurchase the preferred product despite environmental volatility. Jones and Mothersbaugh (2002) also define it as an attachment with the same organisation for a long period, with the purpose of repeat purchase. For this study, customer loyalty is defined as the reappearance of the customers with the same organisation for longer periods. As the level of competition increases, so does the need for customer loyalty, since there is a wide range of choice, fast, creative, and innovative services (Bodet, 2008; Kim et al., 2016; Kumar et al., 2013; Karjaluoto et al., 2012; Aktepe et al., 2015; Rasheed & Abadi, 2014; Stevens, 2000; Chang, 2015).

2.1.2 Service Quality

Service quality is regarded as a key source of competitive advantage, as it helps retain and attract customers. According to Shin and Kim (2008), Tsoukatos and Rand (2006), Cronin and Taylor (1992) and Kim et al. (2015a) service quality is associated with loyalty and customer satisfaction. This association has been confirmed, and research has proven the positive role of service quality on customer satisfaction, which eventually leads to customer loyalty (Santouridis & Trivellas, 2010; Deng et al., 2009; Turel & Serenko, 2006; Kim et al., 2004; Rashed & Abadi, 2014). As such, service quality is included as an independent variable to customer loyalty.

2.1.3 Perceived Value

Perceived value is the comparison that customers make between the advantages or disadvantages of one or more service providers (Sanchezet et al., 2005). It has a marked association with customer loyalty (Park et al., 2006; Kuoet al., 2009; Rasheed & Abadi, 2014; Chang, 2015). Sirdeshmukh et al. (2002), Yang and Peterson (2004), and Wathneet al. (2001) also substantiate the fact with their findings. Atalik and Arslan (2009) found that perceived value positively affected Turkish airline passengers. Similarly, in the Chinese phone industry, Lai et al. (2009) pointed out how closely the two are related. Lin and Wang (2006), in their study of Taiwanese mobile phone consumers, reiterated its significance. The importance of perceived value was also identified by other researchers, such as Roiget al. (2006), Anderson and Srinivasan (2003), Chen and Dubinsky (2003), Cronin et al. (2000), Hellier et al. (2003), and Parasuraman and Grewal (2000). Overall, findings from research on customer loyalty in telecommunication industries from 2001 to 2010 suggest that perceived value is one of the most common key determinants of customer loyalty. Thus, we hypothesise that when consumers receive more value from what they paid, they will decrease their search and will remain loyal to the firm.

2.1.4 Customer Satisfaction

Customer expectation is important in global competition, according to Parasuraman et al. (1991). In marketing literature, customer satisfaction has been considered as a crucial factor influencing customer loyalty (Gerpott et al., 2001; Kumar et al., 2013; Kim et al., 2015a; Kim et al., 2016). Omachonu et al. (2008) suggest that it is a psychological state where there is a consistency between the emerging emotion and expectation. Gerpott et al. (2001) state that satisfied customers tend to retain their pattern of purchases. Grönholdt et al. (2000) point out that customer loyalty is a function of customer satisfaction, and that loyal customers affect a company's financial performance. Wong and Zhou (2006), Aktepe et al. (2015) and Chang, (2015) specify that satisfaction is one of the key factors affecting customer loyalty. Analytical studies by Maxham and Netemeyer (2002) and Blodgett et al. (1997) recognise the fact that satisfied customers publicise the firm and are more likely to remain loyal. Therefore, it is crucial that customer satisfaction is selected as a factor determining customer loyalty in this study.

2.1.5 Satisfaction as a Mediating Variable

Several empirical studies reveal that customer satisfaction mediates the relationship between various factors and customer loyalty. Some of these researches were conducted by Caruana (2002), Wang et al. (2006), Turel and Serenko (2006), Akbar et al. (2010), Santouridis and Trivellas (2010), Deng et al. (2009), Lim et al. (2006), Picon et al. (2014) Lee (2005) Chang (2015) and Kim et al. (2016). Therefore, satisfaction is included as a mediating variable in this study.

3. Methodology

We used convenience sampling method to collect data from 99 university students (Note 2) who are Mobilink mobile users. 92 valid responses (Note 3) were analysed via EFA using SPSS (version 20) to identify the underlying structure of items that make all scales, keeping in view cultural differences and the research setting (Hadi et al., 2016a). The constructs were further verified via Partial Least Squares second generation Structural Equation Modelling (PLS-SEM) technique using SmartPLS3.

4. Analyses and Results

4.1 Descriptive Statistics

The male students in this study consist 75% (n=69) of the sample, and female students involved 25% (n=23). 66 respondents were enrolled in a Master's degree, while 26 were in a bachelor programme. 34% of the respondents were research students, and the outstanding were mainly engaged in coursework. 81 of the respondents were single, whilst 11 were married.

4.2 Unidimensionality

4.2.1 Factor Analyses for Constructs Used in Study

Ten items of service quality were analysed using SPSS. The data are suitable for factor analysis, as the Kaiser-Meyer-Olkin value is 0.837, which exceeds the recommended minimum value of 0.5 (Kaiser, 1970; 1974). Bartlett's Test of Sphericity (BTS) for service quality is significant indicating a strong correlation.

Based on eigenvalues, two factors were retained for further analysis. The two factors of service quality explained a total of 65.7% variance. The eigenvalue for the first factor was 4.55, and explained 45.5% of the variance in the original data. The eigenvalue for the second factor was 2.02, and explained 20.2% of the variance. Oblimin rotation method from oblique rotation technique was performed in detail (Kim & Mueller, 1994; Schmitt, 2011; Hadi et al., 2016a; Fabrigar et al., 1999). Each method in oblique rotation generated a similar result.

Table 1. Pattern and structure matrix for service quality construct

	Pattern matrix		Structure matrix	
	Factor		Factor	
Items	1	2	1	2
Customer services are always courteous	0.895		0.862	
Customer services staff provide me with prompt service	0.882		0.873	
Customer services staff have the knowledge to answer customers	0.845		0.856	0.459
Customer services staff always respond to customer request promptly	0.745		0.813	
The service provider tells me exactly when services will be performed	0.729		0.726	
The service provider provides its services at the time it promises to do so		0.888		0.850
The service provider always performs the service at the first opportunity		0.794		0.811
When a service provider promises to do something by a certain time, they do it		0.763		0.744
The service provider is dependable		0.752		0.769
When I have a problem, my service provider shows sincere interest in solving it		0.700		0.747

Source: Own survey results.

The data are suitable for factor analysis, as the Kaiser-Meyer-Olkin value for perceived value was 0.832, which exceeds the recommended minimum value of 0.5. Bartlett's Test of Sphericity for perceived value was significant, indicating a strong correlation. One factor was retained based on eigenvalue for further analysis. The factor explained a total of 60% variance. The eigenvalue for this factor is 3.0.

The seven items of customer satisfaction are suitable for factor analysis, as the Kaiser-Meyer-Olkin value was 0.805. Bartlett's Test of Sphericity for customer satisfaction was significant, indicating a strong correlation. Based on eigenvalue, one factor was retained for further analysis. The factor explained a total of 40.4% variance, and its eigenvalue is 2.8.

The exploration of six items of customer loyalty shows that the data is suitable for factor analysis (KMO= 0.827, Bartlett's Test of Sphericity = 0.000). Based on eigenvalue, one factor was retained for further analysis. The factor explained a total of 69% variance, and its eigenvalue is 3.5.

4.3 Measurement Models Evaluation

4.3.1 Convergent Validity

To assess construct validity in confirmatory factor analysis (CFA), we examined both convergent and discriminant validity (Hadi et al., 2016b). Convergent validity was confirmed according to the average variance extracted (AVE) and item loadings. All the items load above the threshold of 0.5. Similarly, all constructs explain more than half of the variance, as the value for all constructs is above 0.5 (Fornell & Larcker, 1981). As the AVE for the first order constructs (perceived value, reliability, responsiveness, customer satisfaction and customer loyalty) are 0.6, 0.61, 0.68, 0.51, and 0.592, the measures of five reflective first order constructs have a higher level of convergent validity. Customer satisfaction explains 0.49 of the error variance. Therefore, we propose a limited number of items in future research.

Table 2. Examination of measurement models

LV	S, loadings	C, alpha	CR	AVE
Perceived Value				
PV1	,73	,83	,88	,6
PV2	,80			
PV3	,80			
PV4	,73			
PV5	,78			
Responsiveness				
RS1	,72	,88	,91	,68
RS2	,86			
RS3	,85			
RS4	,83			
RS5	,84			

|				
Reliability				
Rl1	,72	,84	,89	,61
Rl2	,77			
Rl3	,76			
RL4	,83			
RL5	,82			
Service quality (HCM)		,88	,89	,645
Customer satisfaction				
TS1	,74	,75	,82	,51
TS2	,73			
TS3	,66			
TS4	,79			
TS5	,58			
TS6	,71			
TS7	,77			
Customer Loyalty				
CL1	,67	,85	,89	,59
CL2	,75			
CL3	,57			
CL4	,84			
CL5	,82			
CL6	,89			

Source: Own survey.

4.3.2 Discriminant Validity

Discriminant validity is achieved if all square roots of the AVE (diagonal values) surpass the inter-construct correlation. Table 3shows that for each individual construct, the square root of the AVE is greater than its correlations with other constructs. It also shows that discriminant validity is ensured for this research, because the square roots of AVE for perceived value, customer satisfaction, and customer loyalty are higher than corresponding latent variable correlations (LVC).

Table 3. Discriminant validity results

	Customer loyalty	Customer satisfaction	Perceived value	Service quality
Customer loyalty	**0.770**	---		
Customer satisfaction	0.735	**0.635**	---	
Perceived value	0.609	0.620	**0.775**	---
Service quality	0.565	0.581	0.696	**0.675**

Source: Own survey results.
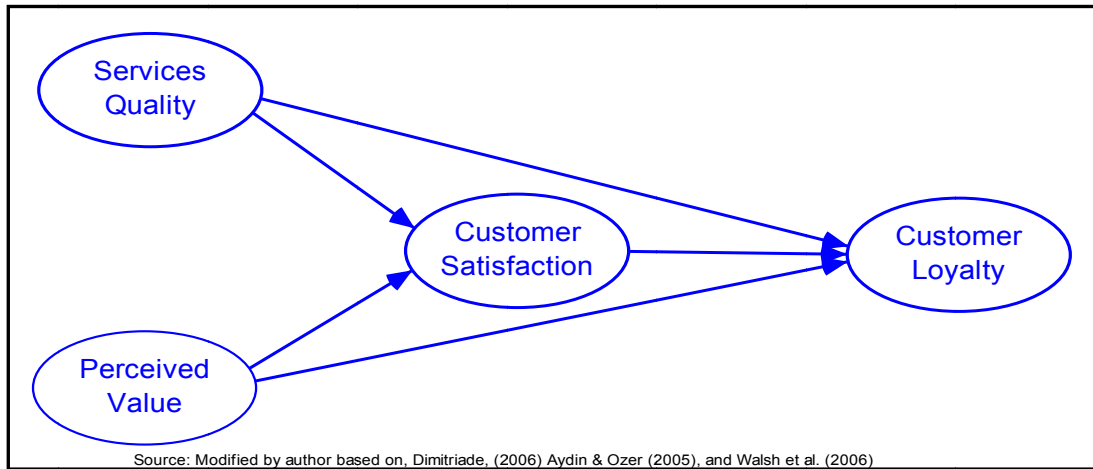
Figure 1. Hypothesised model for mobile telecommunication industry

4.4 Structural Model

4.4.1 Coefficient of Determination (R^2)

R^2 is the coefficient of determination, and is evaluated in the structural model. In this study, customer loyalty is the primary construct of interest. From structural model we find that the value of R^2 is strong see Figure 3. The indirect effect (with mediator) of three constructs (i.e., service quality, perceived value, and customer satisfaction) jointly explain 81.6% of the variance. Similarly, the direct effect (without mediator) of service quality and perceived value on customer loyalty explains a total of 42% of the variance see Figure 2.
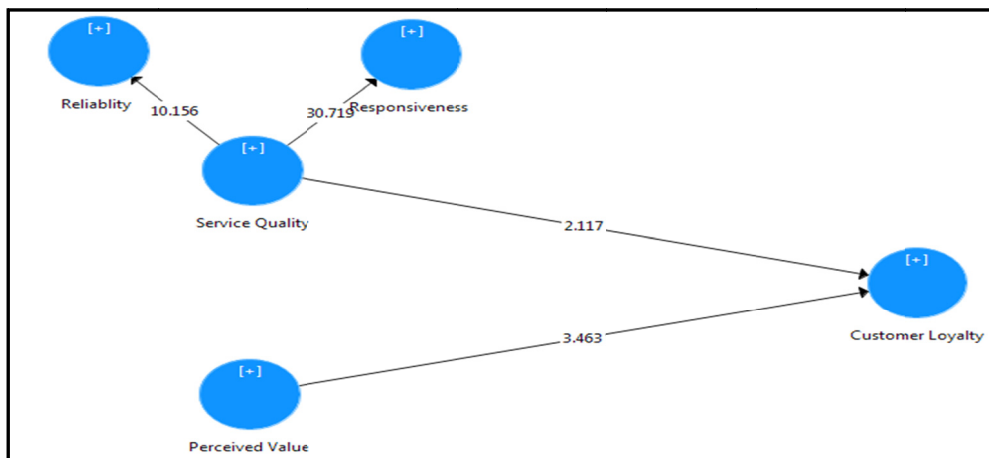

Figure 2. Direct effects without mediation

Table 4. Direct effect of endogenous constructs

Path	B	Sample Mean (M)	Standard Error	t statistics	p values
PV → CL	,435	,454	,126	3.46	,001
SQ → CL	,268	,259	,127	2.11	,034

Source: Own survey results.

4.4.2 Path Coefficient

In PLS-SEM, the relationship between constructs can be measured by path coefficient and t-values. Figure 2 shows that structural model relationships are statistically significant (without mediating effect) (Table 4). The

intervening effect of customer satisfaction as a mediator affects the preceding relationship between service quality and customer loyalty (β=26) and also between perceived value and customer loyalty (β=46) (Table 5). The indirect path (perceived value → customer satisfaction; service quality → customer satisfaction; and customer satisfaction → customer loyalty) has a strong positive relationship, meaning that customer satisfactions does mediate the relationship between service quality and customer loyalty, and also between perceived value and customer loyalty (Figure 3).
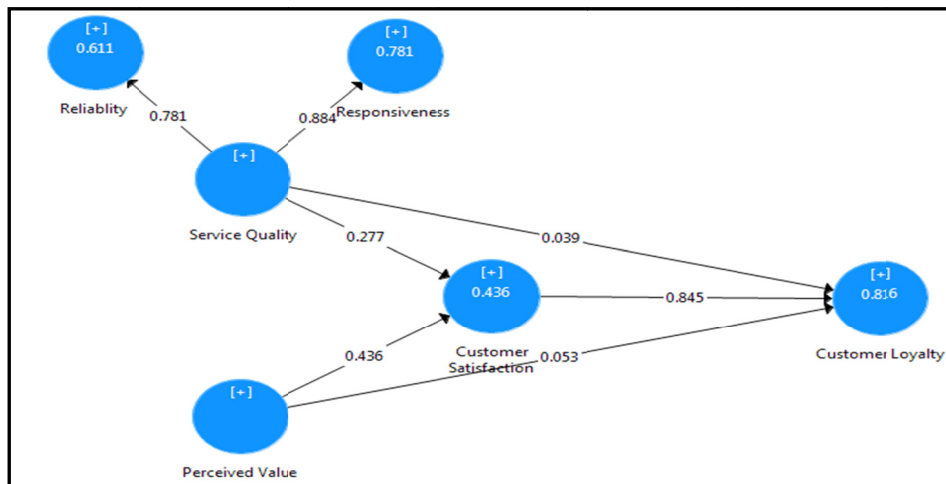

Figure 3. Indirect effects with mediation

Table 5. Indirect effect with mediator

Path	B	Sample Mean (M)	Standard Error	T statistics	p values
CS → CL	,845	,587	,067	12.5	,000
PV → CL	,053	,039	,073	0.72	,469
PV → CS	,436	,465	,132	3.31	,001
SQ → CL	,039	,035	,070	,551	,582
SQ → C	,277	,260	,140	1.98	,048

Source: Own survey results.

4.4.3 Customer Satisfaction as a Mediator

To know the magnitude of mediation, we used the Preacher and Hayes (2008) procedure. Under this procedure, bootstrapping is used in two steps. For the first time, bootstrapping is used without mediating effect to know the direct effect (Figure 2). For the second step, the significance of indirect effect with its t-value is assessed (Table 6) (Note 4).

Table 6. Significance of indirect path with t-value and p-value

Effects	Path	Path coefficient	Indirect effect	Standard deviation	Total effect	VAF	t value	p value	Result
Direct without mediator	P V → CL	,435	N/A				3.3	,001	Accepted
Indirect with mediator	PV → CL	,053	N/A						
	PV → CS	,436	,3684	,08464	,4214	87%	4.3	,0001	Accepted
	CS → CL	,845							
Direct without mediator	SQ → CL	,268	N/A				2.0	,043	Accepted
Indirect with mediator	SQ → CL	,039	N/A						
	SQ → CS	,277	,2340	,1040	,273	85%	2.2	,0269	Accepted
	CS → CL	,845							

Source: Own survey results.

4.4.4 Predictive Relevance (Q^2)

To know whether the indicators of endogenous construct (reflective measurement model) can be predicted accurately, we used predictive relevance (Q^2). Blindfolding algorithm is used for predictive relevance (Hair et al., 2014). It should be noted that blindfolding algorithm is selected only for the endogenous variables (customer loyalty and customer satisfaction) in our case. Results indicate that the model is highly predictive, as the value of predictive relevance is above the threshold (Note 5) of zero (Chin, 1988).

4.4.5 Effect Size (f^2)

The effect size (Note 6) of customer satisfaction on customer loyalty (R^2 value) is large and above the threshold of 0.35. The effect size of service quality and perceived value is low. Thus, by omitting customer satisfaction from the model, the change in R^2 becomes large.

4.4.6. Q^2 Effect Size

The impact of predictive relevance of customer satisfaction on the endogenous latent variable (customer loyalty) is large (Note 7) and above the threshold (Note 8) (0.448).

5. Discussion and Conclusion

In order to identify the importance of customer satisfaction in Pakistani telecommunication market, this study hypothesised customer satisfaction as a mediator between service quality and customer loyalty, and between perceived value and customer loyalty, this study analysed 92 valid responses. We first ensured that the model fits the data; all regressors in the model explain 81% of the variance in customer loyalty. In the first step, results found the direct effect without mediation to be significant, as the t-value for service quality and perceived value was above the threshold at 5% (2.0 and 3.3 respectively). In the second step, we found that customer satisfaction mediated the relationship, as the preceding relationship was no more significant. The strength of mediation was assessed via VAF, which accounted for more than 80% of the variance, indicating customer satisfaction as a mediator, fully mediates the relationships between service quality and customer loyalty, as well as between perceived value and customer loyalty. The effect of customer satisfaction on customer loyalty was large, as the f^2 value is above 0.35. The predictive relevance of endogenous construct was also assessed, and all exogenous constructs in the model were found to have good predictive relevance for endogenous constructs, as Q^2 is above the threshold (0.156 for customer satisfaction; 0.467 for customer loyalty). The predictive relevance effect size (q^2) of customer satisfaction was large.

We conclude that the mobile industry in Pakistan (especially Mobilink) needs to build strategies to satisfy their customers, as the loyalty of customers strongly depends on customer satisfaction.

5.1 Limitation and Future Studies

Our study is only limited to Pakistan and especially, KPK Province, therefore, comparative study for future research is suggested to generalize the findings of this study. Other interactive variable could be included in future research to test it combine effects. We used two components of service quality other may be included in future research. Finally, the sampling method and calculated sample size which was based on G*Power analysis could be of consideration in future research.

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Notes

Note 1. http://www.techjuice.pk/pakistan-mobile-network-industry/

Note 2. Sample size was calculated via G*Power software, to obtain the desired effect size (medium, 0.15), power at 0.90, alpha at 0.05, and the number of predictors = 3, the power analysis calculated the required sample size to be 99 (appendix A).

Note 3. Out of 99 questionnaires, 96 questionnaires were received. 92 valid observation was analysed for further investigation. 3 observation was dropped from study as the missing value on questionnaires were above the threshold of 15% (Hair et al., 2014), we found one observation suspicious by means of straight lining which was also taken out.

Note 4. Total effect=indirect effect direct effect; VAF=indirect effect/total effect *100; T-value for indirect path=indirect effect/Std dev.

Note 5. Q^2 for customer satisfaction is 0.156, and for customer loyalty is 0.467.
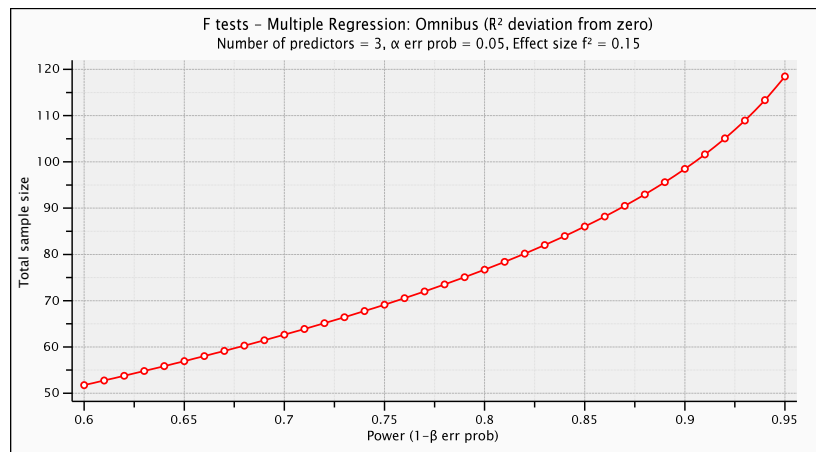
Note 6. $f^2 = R^2_{included} - R^2_{excluded} / 1 - R^2_{included.}$

Note 7. $q^2 = Q^2_{included} - Q^2_{excluded} / 1 - Q^2_{included.}$

Note 8. Guideline for f^2 *and* Q^2 effect size = 0.02, 0.15, and 0.35, representing small, medium, and large.

Appendix A

Power analysis for minimum sample size.

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