

Article history: Received 31 August 2019; accepted 6 April 2020
DOI: <https://doi.org/10.33182/tmj.v8i1.846>

The Effect of Service Quality on Customers' Satisfaction in Mobile Phone Services in the UAE

Emad Y. Masoud[‡]

Abstract

This study aims to determine the dimensions of mobile service quality and to examine their effect on customer satisfaction in UAE mobile phone service providers while also investigating the behavioural differences between mobile phone customers with prepaid and postpaid subscriptions. A combination of the SERVPERF model has been adopted as the main framework for analyzing service quality. A structured questionnaire instrument was designed for data collection. The present study concentrates on the level of customers' satisfaction for leading service providers in the UAE mobile industry. Etisalat and Du were chosen for this study. A sample of (452) mobile phone users in Abu Dhabi city was selected at random using convenience-sampling. We found a positive effect of both functional and technical service quality (network quality) on customers' satisfaction. Functional and technical dimensions were good predictors of customer satisfaction and confirmed the multidimensional nature of service quality. Also, the service quality dimensions; reliability, assurances, and responsiveness are found to be significant predictors of customer satisfaction. Behavioural difference between mobile phone customers is also significant in predicting customer satisfaction for postpaid subscribers. However, only reliability and network quality are significant predictors of customer satisfaction for prepaid subscribers. The model developed in this study provides marketers and researchers with a diagnostic tool to assess service quality from the perspectives of customers to meet the customer's expectations and ensure customer satisfaction.

Keywords: environmental self-identity; peer pressure; collectivism culture; green products; purchase intention; purchase behaviour.

Introduction

The telecommunication sector is considered the heart of the economy all over the world. It acquires strategic importance as being one of the major factors of competition in all economic activities, as well as being one of the infrastructure elements in any investment project. It also plays a significant role in increasing the commercial exchange between countries and the revival of the local and international economy. The importance of the telecommunication

[‡] Emad Y. Masoud, Department of Management, Higher Colleges of Technology (HCT), Abu Dhabi, UAE. E-mail: emasoud@hct.ac.ae.



sector surpasses day after day due to the development and prosperity, resulting in all the other economic sectors. With a growing market and increasing competition, service quality has become an important means of differentiation and a path to achieve business success. The UAE telecommunications sector is currently served by two telecommunications operators, Emirates Telecommunications Corporation (Etisalat) and Emirates Integrated Telecommunications Company (du). The competition was introduced in early 2007 when du, the second licensee, launched its mobile network services ending nearly 30 years of telecommunications monopoly by Etisalat. Sustained investment in telecommunications infrastructure has ensured continued growth for both providers. The rapid adoption of smartphones and tablets has also stimulated data revenues, whilst the rise in social media usage has a significant impact. International indices ranking a range of information and communication technology (ICT) indicators demonstrate the robust nature of the UAE's telecommunications sector and the government's success in leveraging advances in information and communication technologies to drive economic productivity and social development. The United Arab Emirates (UAE) has one of the highest mobile penetration rates in the world. Recent reports on the performance of mobile companies revealed a decline in revenues obtained by the two main mobile operators in UAE (Etisalat and du), and there is a lack of research on the topic of telecommunication operations and ICT policies and their effectiveness in UAE from the customers' perspective (Ameen and Willis, 2016).

Literature Review and Hypotheses

During the past few decades service quality has become a major area of attention to practitioners, managers and researchers owing to its strong impact on business performance, lower costs, customer satisfaction, customer loyalty and profitability (Cronin and Taylor, 1992; Bowen and Chen, 2001; Chen et al., 2003; Keiningham et al., 2005). It is important for the management to understand the constituents of service quality for the organization, to measure it adequately and then take actions for its improvement to deliver increasing value to the customer (Asubonteng et al., 1996).

Services quality

Parasuraman et al. (1985) proposed that service quality is a function of the differences between expectation and performance along the quality dimensions. They developed a scale named SERVQUAL for measuring customers' perceptions of service quality. Later the Service Quality model (SERVQUAL) was revised by Parasuraman et al. (1988,



1991), at this point, the original ten dimensions of service quality were reduced to five dimensions: reliability, responsiveness, tangibles, assurance, and empathy. Tangibility indicates the appearance-related to the service setting, like the appearance of physical facilities. Reliability indicates the dependable, accurate and consistent ability to perform the service as promised. Responsiveness involves a demonstrable willingness to help customers in case of need. Assurance is the indication for knowledge, courtesy, and ability of the employees involved in the service delivery process to convey trust. Empathy involves the ability of the employees to care for, listen to, and give individualized attention to customers. Empathy is indicated by access, communication, and understanding of the customer. The American perspective of service quality is based primarily on Parasuraman et al.'s (1985, 1988, 1991) proposition that service quality may be evaluated based on the functional quality dimension, characterized by five components. Cronin and Taylor (1992) present empirical and literature support that service quality should be measured as an attitude, and the performance-based scale (SERVPERF) is efficient in comparison with the SERVQUAL scale. A more complete representation of service quality, based on the European perspective by Grönroos (1984) identified three components of service quality, namely: technical quality; functional quality; and image. Technical quality is the quality of what consumers receive as a result of their interaction with the service firm and it is important to them and their evaluation of the quality of service; Functional quality is how the customer gets the technical outcome, while Image is very important to service firms and this can be expected to be built up mainly by the technical and functional quality of service. Richard and Allaway (1993) argued that utilizing only functional quality attributes to explain and/or predict consumers' behaviour might be misspecification of service quality and have low predictive validity. To this respect, Brady and Cronin (2001) suggest that researchers generally adopt one of two conceptualizations in their work, the American or the European perspective. The focus on functional quality attributes is referred to as the American perspective of service quality, while the European perspective suggests that service quality considers two more components, technical quality, and image.

The current study extended our understanding of service quality by adopting a combination of the SERVPERF model (Parasuraman et al. 1988; 1991; Cronin and Taylor, 1992) as the functional dimensions of the service quality and the network quality as the technical quality (Grönroos, 1984).

Service Quality and Customers' Satisfaction

Customer satisfaction is one of the best-studied areas in marketing, because it has become a principal factor in achieving organizational goals, and is considered a baseline standard of performance and a possible standard of excellence for any organization (Munusamy and Chelliah, 2011). Customer satisfaction is a person's feeling of pleasure or disappointment resulting from comparing the product's perceived performance (or outcome) with his or her acceptance. The customer is dissatisfied if the performance falls short of expectations, and he/she becomes satisfied if performance matches the expectations, however, if the performance exceeds expectations, the customer is highly satisfied or delighted (Kotler, & Keller, 2015). Quality of service is the value derived by the customer, so the quality of the product and customer satisfaction are related to each other. Research suggests that each factor of service quality is related to the customer's satisfaction and the value of service that is derived out of it. There is also a positive relationship between the perceived quality and person's satisfaction (Turel and Serenko, 2006). Wang and Lin (2012) worked on the relationship between service quality, customer satisfaction and loyalty in mobile commerce. In their model, perceived value and trust have a positive influence on customer satisfaction and influence customer loyalty. While perceived value and trust have a significant effect on service quality, the effect on satisfaction is indirectly effective. Kuo et al. (2009) found that service quality has a positive effect on both perceived value and customer satisfaction, while perceived value has a positive effect on customer satisfaction in mobile services. Kuo et al. (2009) categorize four factors for service quality: content quality, navigation, and visual design, management and customer services, and system reliability. Among these factors, customer service and system reliability have more influence on perceived value and customer satisfaction. Baumann et al. (2006) stated that customer recommends the services to others, only when existing experience has been satisfactory, thus the empathy and affective attitude of the service provider is more important and has a long-lasting impact, while customer satisfaction is short-lived in relation with responsiveness. In a contrasting finding, Ahmed et al. (2010) revealed that reliability, tangibility, responsiveness, and assurance have a positive relationship with customer satisfaction, whereas empathy is not related. Khayyat & Kwanak-gu (2012) examined the customer satisfaction of the telecommunications service in the Kurdistan region in Iraq and identified the key factors that determine the customer satisfaction of the telecommunications services such as perceived usefulness and perceived ease of use. Another importance of customer satisfaction



stems from its role in customer retention, companies which manage to satisfy their customers, retain them for as long as possible, and hopefully turn them into loyal customers, will certainly be in a better competitive position and achieve a better financial performance Almosawi (2012). Kannan et al. (2013) used Berry's SERVQUAL model to analyze the quality of the service provided by the mobile service providers and concluded that there is significant evidence to illustrate the relationship between customer satisfaction and the services that the subscribers perceive from the service provider.

Many studies have been conducted in the UAE and other countries on variables of study; the researcher refers here to some that are more recent and relevant to the study. Vanderwal et al. (2002), aimed to determine the effect of service quality at cellular telecommunication retail outlets in South Africa environment to improve customer service delivery. For this purpose, a random sample technique was used, which ensures that each member of the population has an opportunity to be chosen. A sample of 583 customers was drawn. The research found that the SERVQUAL instrument is reliable and valid for the South African environment, and according to the results, it seems that the manager in terms of the importance of the dimensions should give attention to the responsiveness, staff to help and provide the requested service promptly. In terms of expectations and perception, who should make an effort to address assurance, staff should be knowledgeable and able to inspire trust and confidence in their customers for the company and less effort to tangible dimensions. Kang and James (2004) investigated the European perspective of Gronroos' model, which suggests that there are three dimensions for service quality: technical, functional, and image, which is considered to be a refined version of the perceived quality compared with the SERVQUAL model, which reflects service delivery process only. The results from a cell phone service sample revealed that Gronroos' model is a more appropriate representation of service quality than the American perspective (SERVQUAL) with its limited concentration on the dimension of functional quality (reliability, assurance, tangibility, empathy, and responsiveness). The study confirmed the multidimensional nature of service quality, supporting the European perspective. The results indicated that functional and technical quality influence perceptions of overall service quality. While functional quality may have a larger influence on the perception of service quality for services such as health-care and law, it is important to recognize the differential influence of functional and technical quality, particularly for other service organizations that do not have such high credence properties. Palkar (2004) explored the influence of quality attributes of the service on customer satisfaction and

determination of key quality elements, which determine customer retention. The questions to measure quality were investigated based on the five dimensions of SERVQUAL model and the service features of mobile telephony. Data were collected from the mobile user in Mumbai, a total of 400 mobile telephone service users participated in the survey. Findings showed that the quality attribute influences customer satisfaction. As a result, for postpaid users, "service quality", "usage pattern", and "service support", were derived as the most important factors. For prepaid users, "usage pattern" and service quality were derived as the most important factors. In general, the causality of service quality, customer satisfaction, and payment equity proved to be effective in the mobile service industry because the influence of overall perceived quality on customer satisfaction and payment equity was high. Agyapong (2011) examined the relationship between service quality and customer satisfaction in the utility industry (telecom) in Ghana and adapted the SERVQUAL model as the main framework for analyzing service quality. The result indicated that all the service quality items; competence, service tangibility, staff courtesy, security, communication, and reliability are good predictors of customer satisfaction, and the service quality items are the main factors that affect customer satisfaction of Vodafone (Ghana). The study documented a successful brand building strategy is found when companies provide quality services relative to other companies within the same industry. Ozer et al. (2013) aimed to determine the dimensions of mobile service quality and their effect on satisfaction and intention to use in Turkey. Results showed that five dimensions could be considered in mobile service quality, namely availability, perceived risk, ease of use, compatibility of mobile devices and entertainment services, and these dimensions have a positive effect on satisfaction. Ease of use and availability was the most important dimensions affecting satisfaction. The study also found some positive interactions among mobile service quality dimensions. The availability of the services is related to perceived risk. Customers will feel that while they can reach the mobile services any time they would like; they feel a low level of risk. It is particularly important to attract or keep the customers who perceive a high-security risk while they may make the connection that better devices could help to be secure. Arokiasamy & Abdullah (2013) examined the impact of service quality dimensions on customer satisfaction in Malaysia, using the SERVQUAL model. Gap Analysis was used to determine the perceived and expected satisfaction level on each of the service quality dimensions, based on a total of 225 mobile phone users of Malaysian mobile service providers who participated in this study. Results indicated that empathy, responsiveness, assurance, tangibles,



and reliability are dimensions that have a positive and significant impact on customer satisfaction in Malaysia. Kushwah & Bhargav (2014) analyzed the gap in service quality of the Telecom sector in terms of customers' expectations and perceptions regarding mobile phone services. Data was collected from a quota sample of 500 respondents accessing the mobile phone service of telecom services in New Delhi, the capital of India. Results indicated that there was a statistically significant gap between customers' expectations and perceptions of mobile phone services. As a result, telecom companies have to concentrate their effort on the reduction of the gap in customer expectations and perceptions about their service quality.

Rahhal (2015) analyzed the effects of service quality dimensions on Customer Satisfaction in Syrian mobile phone companies. The instrument used to measure customer perceived service quality combines both the service delivery based on SERVQUAL in addition to the complaint handling and the technical quality dimension. Results showed the significant direct impact of three dimensions of service quality (network quality, responsiveness, reliability) on customer satisfaction, and there are no direct effects of other dimensions (assurance, empathy, tangibles) on customer satisfaction. Irfan et al. (2016) conducted a study to determine the importance of customer satisfaction, and explore whether customer satisfaction affects the relationship between customer loyalty and service quality, and also between customer loyalty and perceived value. They argue that the failures in services can cause ultimate dissatisfaction or negative disconfirmation, but appropriate recovery of service and efforts can win back a customer who is dissatisfied with the satisfaction state again. Some researchers argue that the best method of winning back a dissatisfied customer is eliminating all the failures. Therefore, companies can make a reaction to the failures in services effectively and put some recovery form. Doing this will make the customers satisfied, and the company will be in a position of retaining profitable consumers.

Danish et al. (2018) examined the impact of service quality and service value on customer satisfaction through the mediating role of customer bonding. The results of their study showed that service quality and service value has a significant influence on customer satisfaction and a significant positive relationship among all variables. They also found that independent variables, service value and service quality influence customer satisfaction and this relationship partially mediated by customer bonding. The customers, of telecom organizations that have good service quality, service value and relationship management are more satisfied with their service

provider. Customers of the telecom sector are socially influenced, and the effect of customer bonding on mobile service satisfaction is high.

Baba and Majeed (2018) studied the impact of service quality gaps with customer loyalty in the Indian telecom sector based on the SERVQUAL model of Persuraman, et al. (1988). The study indicates a significant gap between the expectations and perceptions of customers regarding the quality of service provided by the telecom operators under study. Also, the result showed a positive impact of service quality dimensions (reliability, assurance, tangibility, empathy, and responsiveness) on customer loyalty, and empathy is the most influential predictor of customer loyalty followed by responsiveness, assurance, reliability, and tangibility. Belwal and Amireh (2018) studied the service quality for two major telecommunication companies in the Sultanate of Oman (Omantel and Ooredoo) using the SERVQUAL model and tests the effect of five SERVQUAL dimensions on the attitudinal loyalty of customers. Results reveal a positive effect of reliability and assurance dimensions on attitudinal loyalty. However, the outcomes do not reflect any significant effect of tangibles, responsiveness, and empathy on attitudinal loyalty. It also indicates the possibility of tangibles, responsiveness, and empathy in affecting behavioural loyalty to prevent customers' switching in the short-run. Ul Hadi et al. (2019) examined the effects of sustainable service quality on customer loyalty with a mediating role of customer satisfaction. The result showed a direct impact of sustainable service quality on customer satisfaction; therefore, customers with the insight and perception of sustainable service quality are generally found to be in a state of high satisfaction. Also, it was found that the quality of service had a direct impact on customer loyalty. The research also provides statistical evidence of an effective link between loyalty and satisfaction. Pertinently, the satisfied customer may not be loyal if the switching cost is low since the dynamics of the switching cost provide a useful insight into the phenomenon of retaining the customers through customer satisfaction.

Based on the previous discussion and past research, and to the extent that both functional quality and network quality contribute to the improvement of Customers' Satisfaction, the following hypotheses are suggested as shown in Figure 1:

H1: Overall, perceived service quality has a positive effect on customers' satisfaction.



H2: Functional quality (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) has a positive effect on customers' satisfaction.

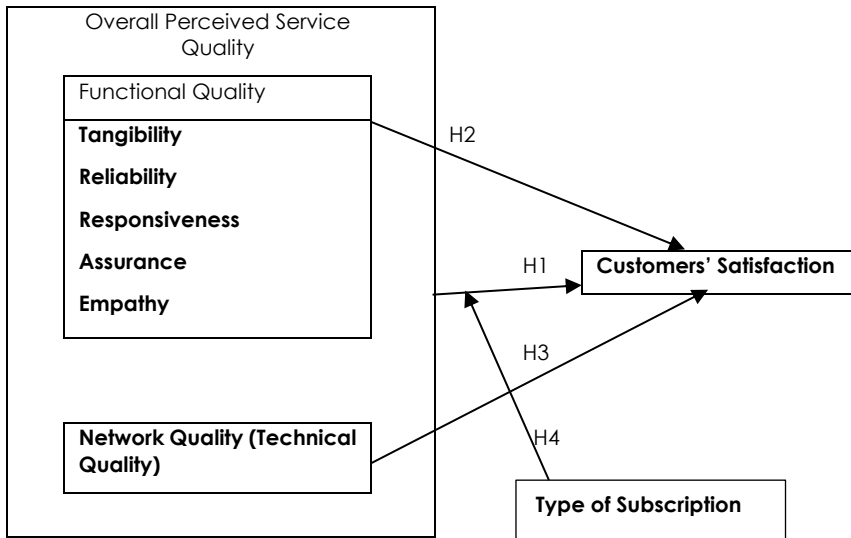
H3: Network quality has a positive effect on customers' satisfaction.

H4: The relationship between overall perceived service quality customer and satisfaction varies according to the type of subscription.

Research framework

The model used in this study was developed to examine the effect of service quality on customers' satisfaction in mobile phone services in UAE, it combines both the functional quality based on SERVQUAL and the technical quality represented in network quality dimension as shown on Figure1.

Figure1. Research framework



Methodology

Measurement

To test the main hypothesis of this research, a structured questionnaire instrument was designed for data collection to measure the effect of service quality on customers' satisfaction in mobile phone services in UAE, (See Appendix A). This questionnaire was adopted and combined by investigating previous researches and experts' suggestions, the number of questionnaire items and references is shown in Table (1). The questionnaires comprised two sections and

distributed in the English language; the first section includes demographic variables (gender, age, income level, educational level, income, mobile phone service provider, subscriptions method, area) that were measured using ordinal scales. The second section consisted of questions related to mobile service quality dimensions (tangibility, reliability, responsiveness, assurance, empathy, network quality) and customers' satisfaction with the mobile communications services provided by mobile service providers in UAE. A five-point Likert scale ranging from "Strongly Disagree = 1" to "Strongly Agree = 5" was used to measure the items in the dimensions.

Instrument Reliability

The reliability estimates of the study for the various constructs under study are presented in Table (1).

Table1. Adoption of questions details, and reliability analysis of service quality dimensions and customers' satisfaction.

Measured variables	Questions item	Cronbach's Alpha	Source
Mobile Service Quality	28	0.962	Parasuraman et al. (1988; 1991) Vanderwal, et al., (2002), Kang, and James (2004), Palkar (2004), Rahhal (2015), Arokiasamy & Abdullah (2013), Agyapong (2011)
Tangibility	4	0.853	
Reliability	5	0.916	
Responsiveness	4	0.860	
Assurance	4	0.890	
Empathy	5	0.899	
Network Quality	6	0.896	Grönroos, (1984), Kang, and James (2004), Rahhal (2015)
Customers' satisfaction	4	0.961	Rahhal (2015), Arokiasamy & Abdullah (2013), Ozer, et al. (2013), Agyapong (2011), Palkar (2004)
Total	32	0.972	

Sampling and Data Collection

To understand the studied phenomenon and since the main aim of this research is to examine the dimensions of mobile service quality and to examine their effect on customer satisfaction in UAE, primary research was conducted in Abu Dhabi, and a quantitative technique was used for data collection. A typical sample size required at a 95 per cent confidence level at a 5% margin of error was suggested to be 384 (Saunders et al., 2009, p.219). When calculating the sample size, researchers must consider the issue of non-response rate, from previous similar researches the response rate was 85% (Hussain et al., 2015), so the actual sample size needed $n^a = \frac{nx100\%}{re\%} = \frac{384x100\%}{85\%} = 452$ (where n^a is the actual sample size required, n is the minimum sample



size, and $re\%$ is the estimated response rate) (Saunders et al., 2009, p.221).

A total of 452 questionnaires were distributed face-to-face to mobile phone users in Abu Dhabi city was chosen at random on a convenience-sampling basis. Questionnaires were distributed, and (53) questionnaires were dropped due to incomplete data from the respondents' side. Therefore, 399 questionnaires were valid and usable for analyzing with a response rate of (88.3%).

The findings show the reliability of the instrument is very high with the value of Cronbach alpha (0.972) exceeding the index of 0.7. However, through the face validity assessment which is run among expertise shown the level of validity is high according to expertise feedback.

Data analysis, and testing

Sample characteristics

The introductory part of the analysis and interpretation of research results provides an overview of the basic data on the characteristics of respondents included in the sample. As indicated by table (2), the survey included both genders, 46.1% of respondents were males and 53.9% females. Analyzing the results of the introductory part of the questionnaire revealed that the majority of respondents were people holding a diploma or university degree (68.9%), the participants as a whole could be considered well-educated. Also, the majority of respondents were aged 25–39 (68.4%). Out of all respondents, 66.2% had prepaid subscriptions, and 33.8% had postpaid subscriptions. The majority of respondents use the services of Etisalat (68.7%), followed by du (31.3%).

Hypothesis testing

To test the study's hypotheses, simple and multiple regression analysis was used to analyze the relationships between independent variables (functional quality and network quality) and customers' satisfaction in Mobile Phone Services in UAE. Tables 3, 4, 5, and 6 show the results of the hypothesis testing.

Multiple regression was conducted to test the direct relationship between independent variables (Functional quality and Network quality) and dependent variable (customer satisfaction) as shown in table (3). It can be seen that the p-value for functional quality and network quality is (.00) less than 0.05. The results provided strong support for H1, which indicated the positive and direct role of functional quality ($\beta = 0.559$, $t = 14.81$) and network quality ($\beta = 0.352$, $t = 9.347$) in affecting customer satisfaction.

Table 2. Demographic profile of participants (n=399)

Variable		Frequency	Percentage (%)
Gender			
	Male	184	46.1
	Female	215	53.9
Age			
	24 years or lower.	66	16.5
	25 years – 39 years.	273	68.4
	40 years-54 years.	51	12.8
	55 years and above.	9	2.3
Educational Level			
	Less than a Diploma Degree	77	19.3
	Diploma Degree	100	25
	University Degree	175	43.9
	Higher Education	47	11.8
Income (AED)			
	10,000 or less	154	38.6
	11,000 -20,000	73	18.3
	21,000- 30,000	105	26.3
	31,000 or more	67	16.8
Mobile phone service provider			
	Etisalat	274	68.7
	Du	125	31.3
Subscriptions method			
	Prepaid	264	66.2
	Postpaid	135	33.8
Area			
	Abu Dhabi	334	83.7
	Dubai	35	8.8
	Sharjah	15	3.8
	Ajman	4	1.0
	Ras Al-Khaimah	5	1.3
	Fujairah	5	1.3
	Um al-Quwain	1	.3
Nationality			
	UAE	191	47.9
	Others	208	52.1

Table 3. Multiple Regression analysis for Service Quality and Customers' Satisfaction in Mobile Phone Services in UAE.

Model	B	Std. Error	Sig.	β	t	R ²
constant	-1.163	.157	.000*		-7.39	.709
Functional quality	.835	.056	.000*	.559	14.81	
Network quality	.444	.048	.000*	.352	9.347	

Note: * Denotes significance at the 0.05 level

To test H2 multiple regression was conducted to test the direct relationship between the functional quality dimensions (tangibility,



reliability, responsiveness, assurance, empathy) and customer satisfaction, as shown in table (4). It can be seen that the p-value for reliability, responsiveness, and assurance are less than 0.05. The results provided strong support for H2, which indicated the positive and direct role of reliability ($\beta = 0.343$, $t = 6.012$), assurance ($\beta = 0.288$, $t = 5.165$) and responsiveness ($\beta = 0.199$, $t = 2.929$) in affecting customer satisfaction.

Table 4. Multiple Regression analysis for Functional Quality (Tangibility, Reliability, Responsiveness, Assurance, Empathy) and Customers' Satisfaction in Mobile Phone Services in UAE.

Model	B	Std. Error	Sig.	β	t	R ²
(Constant)	-.260	.210	.216		-1.239	.669
Tangibility	-.055	.063	.382	-.033	-.876	
Reliability	.396	.066	.000*	.343	6.012	
Responsiveness	.260	.089	.004*	.199	2.929	
Assurance	.367	.071	.000*	.288	5.165	
Empathy	.096	.076	.203	.076	1.275	

Note: * Denotes significance at the 0.05 level

Simple regression was conducted to test the direct relationship between network quality and customer satisfaction, as shown in table (5). It can be seen that the p-value for network quality is (.00) less than 0.05. The results provided strong support for H3, which indicated the positive and direct role of network quality ($\beta = 0.741$, $t = 21.991$) in affecting customer satisfaction.

Table 5. Regression analysis for Technical (Network) Quality and Customers' Satisfaction in Mobile Phone Services in UAE.

Model	B	r ²	β	t	F	Sig.	H. Result
Technical Quality	.934	.549	.741	21.991	483.60	.000*	Accept H2

Notes: * Denotes significance at the 0.05 level

To test the relationship between overall perceived service quality customer and satisfaction vary according to the type of subscription (postpaid and prepaid) independent t-test and One-Way ANOVA was conducted as shown in table (6). The results support for H4 and showed that the service quality dimensions; reliability ($\beta = 0.332$, $t=5.243$), assurance ($\beta = 0.165$, $t= 2.718$), responsiveness ($\beta = 0.139$, $t =1.862$), tangibility ($\beta = 0.086$, $t = 2.269$) and, network quality ($\beta = 0.340$, $t = 7.851$), are the most predictors of customer satisfaction for postpaid subscribers. However, only reliability ($\beta = 0.307$, $t = 3.343$) and network quality ($\beta = 0.394$, $t = 5.228$) are the most predictors of customer satisfaction for prepaid subscription methods.

Table 6. Multiple Regression analysis for Total Quality (Tangibility, Reliability, Responsiveness, Assurance, Empathy, Network Quality) and Customers' Satisfaction in Mobile Phone Services in UAE According to subscription method (postpaid and prepaid).

Subscriptions Method	Model	B	Std. Error	β	t	R ²	Sig.
Postpaid	(Constant)	-.558	.204		-2.730	.765	.007
	Tangibility	.144	.063	.086	2.269		.024*
	Reliability	.385	.073	.332	5.243		.000*
	Responsiveness	.179	.096	.139	1.862		.041*
	Assurance	.210	.077	.165	2.718		.007*
	Empathy	.098	.082	.078	1.193		.234
	Network Quality	.418	.053	.340	7.851		.000*
Prepaid	(Constant)	-.341	.421		-.810	.895	.419
	Tangibility	-.192	.122	- .115	-1.578		.117
	Reliability	.358	.107	.307	3.343		.001*
	Responsiveness	.107	.154	.080	.695		.489
	Assurance	.136	.139	.106	.977		.330
	Empathy	.162	.126	.122	1.287		.201
	Network Quality	.525	.100	.394	5.228		.000*

Note: * Denotes significance at the 0.05 level

Results

The results showed that H1, H2, H3, and H4 are significantly supported. Based on the hypothesis testing the results showed a positive impact of both functional and network quality on customers' satisfaction.

The regression model showed that 71% ($R^2 = 0.709$) of the observed variability in total customer satisfaction is explained by the total service quality variables (functional quality and technical quality). The study results showed that functional quality directly affected customer satisfaction positively and significantly. It means that the better functional quality is better customer satisfaction. Further, the regression model shows how individual service quality variables affect customer satisfaction. Among the service quality variables that significantly affected customer satisfaction were reliability, assurance, and responsiveness. This finding was consistent with the research that was conducted by Cronin and Taylor (1994); Agyapong (2011); Arokiasamy and Abdullah (2013); Irfan et al. (2016). Also, the research result showed that technical quality directly affected customer satisfaction positively and significantly. It means that the better technical quality is better customer satisfaction becomes. This finding was consistent with the research that was conducted by Gronroos (1984); Kang and James (2004); Keyser and Bart (2014); Kannan and Thomas (2013); Rahhal (2015). For the association between customer



satisfaction and type of subscriptions, the results showed that the service quality dimensions; reliability, assurance, responsiveness, tangibility and, network quality, are the most predictors of customer satisfaction for postpaid subscribers. However, only reliability and network quality are the most predictors of customer satisfaction for prepaid subscription methods. Therefore, to increase the level of satisfaction, companies should work on all dimensions of functional quality and improve network quality to maintain a high level of customer satisfaction.

Conclusion and Managerial Implications

Although service quality has been consistently discussed within the literature, there is no universally accepted conceptualization and operational structure of service quality. Many scholars have focused and agreed on the multi-dimensional conceptualization of service quality (Dedeoglu & Demirer, 2015; Arokiasamy & Abdullah, 2013; Irfan et al. 2016). However, most of these studies have focused on the functional dimensions of service quality, whereas the dimension of technical quality has been ignored. In this regard, this study proposes to validate the European perspective of service quality which conceptualizes it based on two dimensions, including functional quality and technical quality. The findings of this study contribute to service quality management and marketing literature in various important ways. First, the proposed research model provides an understanding of the concept of service quality in the UAE mobile industry. Second, this study intends to propose a framework by integrating functional quality dimensions (Parasuraman et al. 1988, 1991; Vanderwal et al., 2002; Kang, and James 2004) and dimensions of technical quality attributes (Grönroos, 1984; Kang and James, 2004; and Rahhal, 2015) proposing technical and functional quality as antecedents to overall service quality. The model developed in this study can provide marketers and researchers with a diagnostic tool to assess service quality from the perspectives of customers and meet the customer's expectations and ensure customer satisfaction within the mobile industry.

Based on the results of this study analysis, these followings are conclusions follow:

1) Functional quality directly affected the customers' satisfaction positively and significantly. The higher improvement of the service process on functional quality would give a good effect on the customers' satisfaction. Therefore, a good service process that was received from mobile service provider staff had assessed their service level by giving their empathy, responsiveness, and service reliability.

Thus, the service process had given a major contribution to customers' satisfaction.

2) Technical quality directly affected the customers' satisfaction positively and significantly. The higher improvement of customers' perception of technical quality would give a good effect on their satisfaction.

3) Mobile phone service providers in UAE must put more effort into improving the reliability of the service to perform the promised service dependably and accurately, the competence of staff to help customers and provide prompt service, and also making their services more tangible to customers' needs since the three are the most significant factors influencing customers' satisfaction.

4) Postpaid customers' expectations and experiences to be understood at every stage of active and passive interaction with service providers.

Limitations and Further Research

This paper contributes to the understanding of customer satisfaction by determining the functional dimensions of the service quality and the network quality, which in turn provides practical insights for mobile managers into how to improve mobile service quality. This research initiative examined exactly what goes to make up customer satisfaction as well as how satisfied customers were with the services provided by mobile companies under consideration. The current research extends the knowledge of customer satisfaction by developing a model that clarifies the relationship between both technical and functional quality with customer satisfaction. Overall, the study identifies the contributing factors as well as the outcomes of customers' satisfaction with service and concludes that technical and functional quality leads to customer satisfaction. Due to the similar culture, the research findings can also be applied in the Gulf Cooperation Council (GCC) countries.

The data collected in this research were obtained from mobile users at Abu Dhabi city only. Future studies can collect data from customers from other UAE emirates to compare their results with the results of this research. Also, the research is concerned with service quality only as an independent factor. It ignores the impact of other factors on customer satisfaction like price, and the impact of customer satisfaction on customer loyalty. Future research can take other factors into considerations. Despite the importance of investigating mobile phone end-users, a more in-depth investigation of the issues raised in this research is still required by collecting data from mobile companies in the UAE.



References

- Agyapong, G. (2011). The Effect of Service Quality on Customer Satisfaction in the Utility Industry – A Case of Vodafone (Ghana). *International Journal of Business and Management*. 6(5), 203-210.
- Ahmed, I., Nawaz Muhammed, M., Usman A., Shaikat, Z., Ahmed N. and Rahman W. (2010). A mediation of customer satisfaction relationship between service quality and repurchase intentions for the telecom sector in Pakistan: A Case study of university students. *African Journal of Business Management*. 4(16), 3457-3462.
- Almossawi, M. (2012). Customer Satisfaction in the Mobile Telecom Industry in Bahrain: Antecedents and Consequences. *International Journal of Marketing Studies*. 4(6), 139-156.
- Ameen, N. and Willis, R. (2016), An Investigation of the Challenges Facing the Mobile Telecommunications Industry in the United Arab Emirates from the Young Consumers' Perspective. *7th European Regional Conference of the International Telecommunications Society (ITS)*, Cambridge, United Kingdom, 7th - 9th September 2016.
- Arokiasamy, A. & Abdullah, A. (2013). Service Quality and Customer Satisfaction in the Cellular Telecommunication Service Provider in Malaysia. *International Refereed Research Journal*. 4(2). 1-9.
- Asubonteng, P., McCleary, K. J., & Swan, J. E. (1996). SERVQUAL revisited: A critical review of service quality. *Journal of Services Marketing*. 10, 62-81.
- Baba, M. and Majeed, R. (2018). Service Quality and Customer Loyalty: A Study in Telecom Sector. *Asian Review of Social Sciences*. Vol.7 No.1, pp. 60-66.
- Baumann C, Burton S, Elliott G, Kehr HM (2006). Prediction of attitude and behavioral intentions in retail banking. *Inter. J. Bank. Mark.* 25(2), 102-116.
- Belwal, R. and Amireh, M. (2018). Service quality and attitudinal loyalty: Consumers' perception of two major telecommunication companies in Oman. *Arab Economic and Business Journal*. 13. pp.197-208.
- Bowen, J. and Chen, S. (2001). The Relationship between Customer Loyalty and Customer Satisfaction. *International Journal of Contemporary Hospitality Management*. 13(5), 213-217.
- Brady, M. and Cronin, J. (2001). Some New Thoughts on Conceptualizing Perceived Service Quality: A Hierarchical Approach. *Journal of Marketing*. 65, 34-49.
- Chen, H., Chen, E., and Yeh, A. (2003). The Effects of Relationship Commitment and Trust on Business to Consumer Electronic Commerce-the Case of Taiwan. *Communications of the International Information Management Association*. 3(1), 35-45.
- Cronin, J.J and Taylor, S.A. (1992). Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing*. 56(3), 55-68.
- Cronin, J. and Taylor, S. (1994). SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-minus- Expectations Measurement of Service Quality. *Journal of Marketing*. 58(1), 25-131.
- Danish, R., Humayon, A., Iqbal, H., Raza, S., Shahid, J. (2018). The Impact of Service Quality and Service Value on Customer Satisfaction through Customer bonding: Evidence from telecommunication Sector. *European Online Journal of Natural and Social Sciences*. Vol. 7, No.1(s). pp. 40-47.
- Dedeoglu, B. and Demire, H. (2015). Differences in service quality perceptions of stakeholders in the hotel industry. *International Journal of Contemporary Hospitality Management*. 27(1), 130-146
- Grönroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*. 18(4), 36-44.
- Hussain, R., Nasser, A., and Hussain, Y. (2015) Service quality and customer satisfaction of a UAE-based airline: An empirical investigation. *Journal of Air Transport Management*, 42, pp. 167-175.

- Irfan, M., Shamsudin, M. & Hadi, N. (2016). How Important Is Customer Satisfaction? Quantitative Evidence from Mobile Telecommunication Market. *International Journal of Business and Management*. 11(6), 57-69.
- Kang, Gi-Du and James, Jeffrey (2004). Service quality dimensions: an examination of Gronroos's service quality model. *Managing Service Quality*. 14(4), 266-277.
- Kannan K. Pisharady, D. & Thomas, B. (2013). A Study on Customer Satisfaction index of mobile Phone Subscribers in Kerala. *International Journal on Customer Relations*. 1(2), 8-15.
- Keiningham, T. L, Perkins-Munn, T., Aksoy, L. and Estrin, D. (2005). Does Customer Satisfaction Lead to Profitability? The Mediating role of Share-of-Wallet. *Managing Service Quality*. 15(2), 172-181.
- Keyser, A. and Bart Lariviere, B. (2014). How technical and functional service quality drive consumer happiness: Moderating influences of channel usage. *Journal of Service Management*. 25(1), 30-48.
- Khayyat, N. & Kwanak-gu, S. (2012). Determinants of Mobile Phone Customer Satisfaction in the Kurdistan Region. *Journal of Knowledge Management, Economics and Information Technology*.3. 1-31.
- Kotler, P. and Keller, K. (2015), Marketing Management. Prentice-hall, 15th Edition.
- Kuo Y. F., Wu, C. M. and Deng W.J. (2009). The Relationships Among Service Quality, Perceived Value, Customer Satisfaction, and Post-Purchase Intention in Mobile Value-Added Services. *Computers in Human Behavior*. 25(4), 887- 896.
- Kushwah, S. & Bhargav, A. (2014). Service Quality Expectations and Perceptions of Telecom Sector in India. *International Journal of Advancements in Technology*. 5(1), 1-10.
- Munusamy, J., Chelliah, S., 2011. An investigation of impact of service strategy on customers' satisfaction in the budget airline industry in Malaysia: a case study of air Asia. *Contemp. Mark. Rev.* 1 (1), 1-13.
- Nitin, S. & Deshmukh, S. (2004). Service quality models: a review. *International Journal of Quality & Reliability Management*. 22(9), 913-949.
- Ozer, A., Argan, M. & Argan, M. (2013). The effect of mobile service quality dimensions on customer satisfaction. *Procedia - Social and Behavioral Sciences*. 99, 428 – 438.
- Palkar, A. (2004). Determinants of Customer Satisfaction for Cellular Service Providers. *Sinhgad Institute of Management and Computer Applications*. 28(1), 1-10.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*. 49, 41-50.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988). SERVQUAL: A Multiple Item Scale for Measuring Consumer Perception of Service Quality. *Journal of Retailing*. 64(1), 12-37.
- Parasuraman, A., Berry, L.L., and Zeithaml, V.A. (1991). Refinement and Reassessment of the SERVQUAL Scale. *Journal of Retailing*. 67(4), 420-450.
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988). SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*. 64(1), 12-40.
- Rahhal, W. (2015). The Effects of Service Quality Dimensions on Customer Satisfaction: An Empirical Investigation in Syrian Mobile Telecommunication Services. *International Journal of Business and Management Invention*. 4(5),81-89.
- Richard, M. D., and Allaway, A. W. (1993). Service Quality Attributes and Choice Behavior. *Journal of Service Marketing*. 7(1), 59-68.
- Saunders, M., Lewis, P., and Thornhill, A. (2009). Research Methods for Business Students, Pearson Education, fifth edition.
- Turel, O., and Serenko, A. (2006). Satisfaction with Mobile Services in Canada: An Empirical Investigation. *Telecommunications Policy*. 30(2006), 314 331.
- Ul Hadi, N., Aslam, N., and Amir Gulzar, A. (2019). Sustainable Service Quality and Customer Loyalty: The Role of Customer Satisfaction and Switching Costs in the Pakistan Cellphone Industry, *Sustainability*, 11, 2408; pp. 1-17.



- VanderWal, R.W., Pampallis, A. and Bond, C. (2002). Service Quality in a Cellular Telecommunication Company: A South African Experience. *Managing Service Quality*. 12 (5), 323-335.
- Wang, K. and Lin, C. L. (2012). The Adoption of Mobile Value-Added Services: Investigating the Influence of is Quality and Perceived Playfulness. *Managing Service Quality*. 22(2), pp.184-208.
- Yallapragada, Padma (2017), Determinants Of Customer Satisfaction Inthe Mobile Telecommunications Services Among The University Students In Dubai. *Advance Research Journal of Multi-Disciplinary Discoveries*, 12(1), 5-11.

Appendix A

Proposed Measurement Items for Constructs

Constructs	Items	Measurement items	Mean	Std. Dev.
Tangibility	TAN		4.0213	.6510
	TAN1	Your mobile phone service provider has up-to-date equipment.	4.0877	.7399
	TAN2	Your mobile phone service provider's physical facilities are visually appealing.	4.0301	.7694
	TAN3	Your mobile phone service provider's employees are well dressed and appear neat.	4.0652	.7473
	TAN4	The materials associated with the service are visually appealing.	3.9023	.8641
Reliability	REL		3.5980	.9434
	REL1	Your mobile phone service provider provides services as promised.	3.5639	1.096
	REL2	When you have problems, your mobile phone service provider shows a sincere interest in solving it.	3.5388	1.139
	REL3	Your mobile phone service provider performs the service right the first time.	3.6165	1.049
	REL4	Your mobile phone service provider provides its services at the time it promises to do so.	3.6241	1.081
	REL5	Your mobile phone service provider keeps its records (bills, customers' data) accurately.	3.6466	1.085
Responsiveness	RES		3.7124	.8332
	RES1	Your mobile phone service provider's employees inform customers exactly when services will be performed.	3.6115	1.087
	RES2	You receive prompt service from your mobile phone service provider's employees.	3.7644	.9666
	RES3	Employees of your mobile phone service provider are always willing to help customers.	3.8070	.9432
	RES4	Employees of your mobile phone service provider are never being too busy to respond to customer requests promptly.	3.6667	.9676

Proposed Measurement Items for Constructs (*Continued*)

Assurance	ASS		3.7462	.8541
	ASS1	The behavior of employees of your mobile phone service provider instills confidence in customers.	3.7444	1.019
	ASS2	You feel safe in your transaction with your mobile phone service provider's employees.	3.6140	1.073
	ASS3	Employees of your mobile phone service provider are polite.	3.8897	.8523
	ASS4	Employees of your mobile phone service provider have the knowledge to answer customer' questions.	3.7368	.9814
Empathy	EMP		3.6312	.8528
	EMP1	Your mobile phone service provider gives you individual attention.	3.5664	1.029
	EMP2	Employees of your mobile phone service provider give you personal attention.	3.5990	1.046
	EMP3	Employees of your mobile phone service provider understand the specific needs of their customers.	3.6291	1.006
	EMP4	Your mobile phone service provider has its customers' best interests at heart.	3.4824	1.098
	EMP5	Your mobile phone service provider has operating hours convenient to all its customers.	3.8922	.8600
Network Quality	NWQ		3.7001	.8630
	NWQ1	The coverage of this mobile phone network is strong on all the highways.	3.5589	1.136
	NWQ2	The signal is strong even inside the buildings including the basement.	3.4311	1.183
	NWQ3	The service network maintains excellent voice quality and without interruption.	3.7444	1.072
	NWQ4	Your call gets connected to the called person during the first attempt most of the time.	3.7794	1.000
	NWQ5	Sending / Receiving SMS, &MMS are fast.	3.9649	.9126
	NWQ6	Downloading, Receiving, and sending data at high speed.	3.7218	1.051
Customer Satisfaction	CS		3.6046	1.087
	CS1	I am happy with my mobile phone service provider.	3.6165	1.109
	CS2	I am satisfied with my mobile phone service provider.	3.5965	1.145
	CS3	My choice to deal with this mobile phone service provider is a wise one.	3.6165	1.134
	CS4	I recommend others to subscribe to my mobile service provider.	3.5890	1.205

