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Measuring Impact of Service Quality Dimensions on Customers Satisfaction: Case of GSM Users in Poland

Cumhur AYDINLI[1]
Edip SENYUREK[2]

[1]İpek University, Ankara, Turkey, [1]E-mail: caydinli@ipek.edu.tr
[2]Vistula University, Warsaw, Poland, [2]E-mail: e.senyurek@vistula.edu.pl

Abstract *The aim of this study is to determine the impact of service quality dimensions on telecommunication service users' satisfaction. For this reason, a survey that was adopted from ServQual was conducted to 267 people those are using one of the telecommunication services. First of all, explanatory factor analysis and reliability analysis were conducted. Secondly, the coefficient values of each dimensions on satisfaction was determined via proposing structural equation modeling (SEM). Furthermore, total variance explained by the five dimensions which were in survey was 90%.*

Key words Service Quality, ServQual, GSM Service Quality, Customers Satisfaction, Service Quality Dimensions

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1. Introduction

Standing alive in the competitive markets is becoming hard and hard day by day. Especially in the service sectors customer focused operations became strategically important. Not only customer focused services but also product customization, flexibility, performance etc. factors became very important in order to increase the market share.

2. Literature review

It is known that customer satisfaction plays an important role on increasing the market share (Demir and Eray, 2015; Aydinli and Kilic 2015). Previously, marketing departments of the businesses were very enthusiastic about finding a new customer(s). One more new customer was the source of happiness for the businesses. For this reason, old customers were not served as eager as new ones. But in this age, that is loyalty concept is significantly affecting the operations of the businesses, loyal customers are much more important than the new customers (Burcuoglu, 2011). From this point of view, losing one customer means not only losing one sale but losing lifelong profit which could be obtained from the concerning customer (Kotler, 2000). For these reasons, business owners tend more to retain the loyal customers. On the other hand, customer can become loyal if s/he is satisfied continuously (Aydinli and Demir, 2015).

Customer satisfaction is not a part of the service of product. If it was so, the customer satisfaction would be the same each utilization of the same service. But it is possible that the same customer may get different satisfaction level at various usage times of the same service (Banar ve Ekergil, 2010). This shows that the satisfaction is fulfilling the expectations of customers (De Jong *et al*., 2005; Yee *et al.,* 2013, Grönroos, 1998). However, the expectations must be fulfilled after understanding the market. Of course the service quality plays very important role in this point.

Service quality is hard to define because it is not a tangible element but is a performance or a work consumed where it is produced and served (Collier, 2990). However, service quality is nonhomogeneous measure. It differs from customer to customer and even from a day to another day (Parasuraman, Zeitaml, and Berry, 1985). From these points of view, business owners should understand the market overall or approximately in order to serve such a service which fulfills the overall expectations of the customers.

In the literature, there are many researches performed in order to determine and measure the service quality. Table 1 shows the detailed researches about this issue.

Table 1. Service Quality Measurement Models

No	Researcher	Model	Key Model and Findings
1.	Grönroos, 1984	Technical and Functional Quality Model	Service quality depends on the technical and functional quality and the image of the company
2.	Parasuraman, Zeitaml, and Berry, 1985	ServQual	Service quality is the result of expectations which is actualized or not along the dimensions of quality regarding to the conformance.
3.	Haywood and Farmer, 1988	Dimension and Features Service Quality Model	This model considers quality management under three main dimensions such as tangibles, process, behavior and professional experience
4.	Brogowicz, Delene, and Lyth, 1990	Service Quality and Synthesis Model	Planning, Implementation, and Controlling functions, which should be cared continuously by management, were defined. By this way service variations can be minimized
5.	Cronin and Taylor, 1992	ServPerf	Claims that the service quality can be measured not from the expectations but from the perceptions of the customers.
6.	Mattson, 1992	Service Quality Ideal Value Model	Offers measure the service quality by comparing the usage of ideal standards with experiences
7.	Teas, 1993	Performance Evaluation and Standard Quality Model	He reevaluated the expectation and redefined.
8.	Berkley and Gupta, 1994	Information Technology and Harmony Model	This model measures only the effect of information technology on the service quality and shows the way of measurement.
9.	Dobholkar, 1996	Features and General Impact Model	He offered evaluation of service quality for technology based self-service preferences. He didn't include features, price, tangibles…etc. in demography.
10.	Spreng and Mackoy, 1996	Perceived Service Quality and Satisfaction Model	Service quality is different from satisfaction and conformance effects the satisfaction. But the model doesn't mention about how to succeed the service quality.
11.	Sweeney. Soutar, and Johnson, 1997	Retail service Quality and Perceived Value Model	Technical service quality is the most efficient element for the product quality. It affects the willingness to purchase. Model considers money as scale.
12.	Oh, 1999	Service Quality, Consumer Value, and Consumer Satisfaction Model	This model can be used to understand about the consumer decision process.
13.	Dabholkar. 2000	Previous Effects and Mediator Factors	This model puts through the previous satisfaction levels about the concerning service.
14.	Frost and Kumar, 2000	Internal Service Quality Model	This model concerns about the expectations of the internal customers.
15.	Soteriou and Stavrinides, 2000	Internal Service Quality and Data Envelop Model	It shows the top sources in order to serve better quality of the service.
16.	Broderick and Vachirapornpuk, 2002	Internet Banking Model	It concerns the service quality at internet banking within double phase such as common service point and management of increasing consumer role.
17.	Santos, 2003	E- Service Quality Model	It mentions about the e0service quality. It doesn't give a specific measurement scale to researchers. It is not a statistical research.
18.	Parasuraman, Zeitaml, and Malhotra, 2005	E-S-Qual	It contains the dimensions for the service quality at the internet based service quality. Those dimensions are adequacy, Execution, Usability, and Privacy.

In this study, the hypothesis and research model can be shown as;

H_1 Empathy has significant and positive impact on the GSM users' satisfaction in Poland

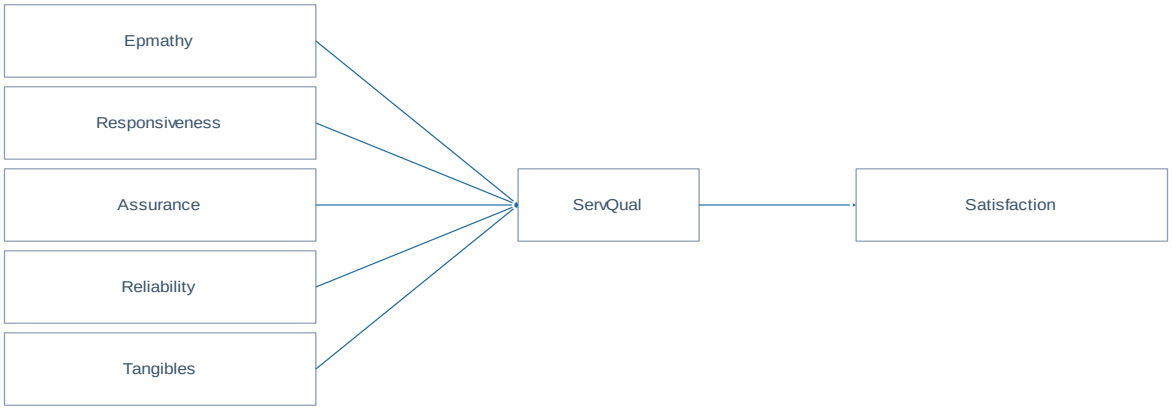
H_2 Responsiveness has significant and positive impact on the GSM users' satisfaction in Poland

H_3 Assurance has significant and positive impact on the GSM users' satisfaction in Poland

H_4 Reliability has significant and positive impact on the GSM users' satisfaction in Poland

H_5 Tangibles has significant and positive impact on the GSM users' satisfaction in Poland

Graph 1. Research Model



3. Methodology of research

In this research, which of the GSM operators if the consumers, who are using one of the GSM operators such as Play, Orange, T-Mobile, Lycamobile, and Plus, was asked and 267 of the answers were recorded based on the answers. The survey questionnaire method was used and this survey questionnaire was asked to the people in Poland.

Table 2. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	52	19,5	19,5	19,5
	26-35	93	34,8	34,8	54,3
	36-45	85	31,8	31,8	86,1
	46-55	32	12,0	12,0	98,1
	55+	5	1,9	1,9	100,0
	Total	267	100,0	100,0	

Based on the information given on table 2, 19.5% of the target population was between 18 and 25 years old, 34.8% is between 26 and 35, 31.8% is between 36 and 45 years old, 12% is between 46 and 55 years old, and the remaining is above 55 years old. Furthermore, 73% of the participants were male while 27% was female.

Table 3. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	195	73,0	73,0	73,0
	Female	72	27,0	27,0	100,0
	Total	267	100,0	100,0	

Table 4. Monthly Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less Than 1500 PLN	24	9,0	9,0	9,0
	1500-3000 PLN	75	28,1	28,1	37,1
	3000-4500 PLN	121	45,3	45,3	82,4
	4500-6000 PLN	19	7,1	7,1	89,5
	More Than 6000 PLN	28	10,5	10,5	100,0
	Total	267	100,0	100,0	

It was seen that only 9% of the participants had income level lower than 1500 PLN. Beside this, 28% of them had income between 1500 and 3000 PLN, 45% of them had income between 3000 and 4500 PLN, 7% of them had income between 4500 and 6000 PLN, and 10.5% of them had income level more than 6000 PLN. Table 5 shows that 34.5% of the participants were utilizing the service of Play operating system, 26.6% of them were using Orange, 17% was using T-Mobile, 20% was using Plus, and only 1.5% of them were using Lycamobile. Table 5 shows more details about the usage of the GSM operators' usage rates.

Table 5. Your GSM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Play	92	34,5	34,6	34,6
	Orange	71	26,6	26,7	61,3
	T-Mobile	45	16,9	16,9	78,2
	Plus	54	20,2	20,3	98,5
	Lycamobile	4	1,5	1,5	100,0
	Total	266	99,6	100,0	
Missing	System	1	,4		
Total		267	100,0		

Survey results of the participants, whose demographic information was given above, were analyzed using structural equation modeling (SEM). Before the SEM analysis, reliability analysis was performed to check the reliability of the scale. The results are determined on the Table 6.

Table 6. Reliability

Dimension	Cronbach's Alpha Level
Empathy	0.875
Responsiveness	0.805
Assurance	0.855
Reliability	0.880
Tangibles	0.825

It is known that the Cronbach's Alpha level must be minimum 0.70 (Devellis, 2003; Nunnaly, *et al*., 1967; Bland, Martin, and Altman, 1997) in order to accept the reliability of each dimension. In this study minimum level of Cronbach's Alpha value seems 0.805 and the maximum is 0.880. Structural Equation Modeling can be performed. Objective of SEM is to determine the effect of each dimension on the service quality of the GSM service and then the impact of the service quality on the satisfaction of the customers. However, the weights of each dimension on the service quality shows the importance of that factor on the satisfaction of the customers in the same time.

X^2/DF is an important measure of SEM for determining a fit model. The acceptable rate of the division must be between 0.10 and 5 (Adams, Nelson, *et al*., 1992; Wang, Lin, *et al*., 2006). In this study, the value is 4.284. This is an acceptable level of value. RMSEA is another factor of measure for the model fit level of the SEM. It can be said that 0.05 and 0.08 is the value for the good model (Adams, Nelson, *et al*., 1992; Costa-Font and Gil, 2009; Byrne, 2001). In this study, the value of RMSEA is 0.1 and this is also an accepted value. RMR value should be between 0 and 1. However, it shows a good fit in case RMR value is less than 0.05 (Golob, 2003). Results of SEM in this study show that RMR value is 0.037 and this shows a good fit. According to these results, it can be said that this model works at acceptable level. By other means, the results of the model are acceptable. In this case, the results of the model can be evaluated.

Table 7. Results of structural equation modeling

Dimensions	Dependent Variable	Non-Standard Estimates	Standard Estimates	S.E	T Results	Sig.	Label
Empathy	Satisfaction	0.919	0.939	0.077	11.881	***	Accepted
Responsiveness	Satisfaction	0.808	0.866	0.074	10.903	***	Accepted
Assurance	Satisfaction	0.815	0.989	0.068	12.040	***	Accepted
Reliability	Satisfaction	1.000	0.965			***	Accepted

Dimensions	Dependent Variable	Non-Standard Estimates	Standard Estimates	S.E	T Results	Sig.	Label
Tangibles	Satisfaction	0.754	1.062	0.058	12.997	***	Accepted

Table 7 shows the coefficient values of each dimension on the satisfaction of the GSM service consumers. First of all, it was seen that service quality dimensions which were included in this scale represented 90% of the total variance. Which means that the satisfaction of the customers depending on the dimensions of the service quality in this survey as 90%.

Furthermore, each dimension has different level of impact on the customer satisfaction. For example, Empathy has the coefficient of 0.939 on the multiple regression line which shows the dependency of the customer satisfaction. Responsiveness has the coefficient of 0.866, Assurance has 0.989, Reliability has 0.965, and Tangibles dimension has 1.062 value of coefficient impact on the customer satisfaction.

According to these results;

H_1 (Empathy has significant and positive impact on the GSM users' satisfaction in Poland) is accepted due to the t value of the dimension was above 1.96.

H_2 (Responsiveness has significant and positive impact on the GSM users' satisfaction in Poland) is accepted due to the t value of the dimension was above 1.96.

H_3 (Assurance has significant and positive impact on the GSM users' satisfaction in Poland) is accepted due to the t value of the dimension was above 1.96.

H_4 (Reliability has significant and positive impact on the GSM users' satisfaction in Poland) is accepted due to the t value of the dimension was above 1.96.

H_5 (Tangibles has significant and positive impact on the GSM users' satisfaction in Poland) is accepted due to the t value of the dimension was above 1.96.

4. Conclusion and Discussions

According to these results of hypothesis, although all of the results of hypotheses were accepted due to the t values are on the required level, they have different level of importance for the service quality that affects the customer satisfaction.

After analyzing the survey that has been done in Poland, Tangibles dimension seems the most important factor that the customers emphasize for their satisfaction. Assurance dimension, Reliability dimension and Empathy dimension follows respectively. The values for responsiveness dimension show that Responsiveness the least important factor according to mentioned survey analysis.

It was seen that all of the dimensions are significantly important for measuring the service quality of the GSM companies. That's why, GSM companies would perform operations based on the importance levels of the dimensions. Firstly, GSM companies would give importance to appearance of the employees, facilities such as buildings and/ office places. Then, they would put some more attention to respond time to customer's complained and demands.

This article includes service quality dimensions' effect on the satisfaction of the service users only in Poland. For the further studies, researchers may increase the number of the participants of the questionnaire conduct. By this way the accuracy of the results could be more, clear.

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