THE OVERALL QUALITY SERVICE AND PERCEIVED VALUE INTELECOM SECTOR

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Abstract. This article investigates several aspects of service quality and perceived value of the telecom customers in Romania. This study is based on a survey of the users of mobile telecommunication services in Romania. The survey method used in collecting the data was "snowball sampling" and the results were analyzed through SPSS 21 software. We started with defining a few hypothesis which were tested at 95% Confidence Level and then, based on the results, we developed a multiple linear regression model using Stepwise Method. This study is original and the academic findings may help the Telecom Companies to positioning themselves on the desired market segments and provide consumers their expected values. In this way, the companies will increase their market share and the users will be more satisfied.

Key words: ***service quality, perceived value, perceived price, brand equity, telecom***

1. Introduction

The value of a brand, as perceived by consumers, is the result of a combination of basic elements that interact dynamically: quality, performance, prominent, communication, cost, emotional value, market presence, customer interaction, etc. If we admit this definition, there appear at least two logical consequences. The value of a brand is not given only by price, and by creating, maintaining or increasing is not responsible only the brand manager, the subject being a strategic vision for the company and related to its overall vision of this over the respective brand. Full understanding of the content and different role of price and value of a brand is a need in measuring its performance. Many models that measure brand equity are limited at attitudinal components of brand profile and their interaction with consumers, unable to explain very well why sometimes a brand with a strong equity may suffer a loss in market share, and conversely, why a brand with little or no equity can increase its market share, or even become a major player in the category, as is the case of "private labels".

Apparently, the perceived value of consumer is a simple equation (Zeithaml, 1988), that puts into balance what (thinks that) the respective consumer receives from a brand, than what it is willing to pay for it:

$$Perceived\ value\ of\ a\ brand = \frac{what\ receives\ the\ consumer}{what\ \ pays\ the\ consumer}$$

In other words, the perceived value increases proportional with what receives and inverse proportional with what the consumer pays. Obviously the relationship is not strictly mathematical, but rather logically, involving quantitative and qualitative aspects.

2. Brief literature review

The concept of perceived value has become since the last decade of the last century, a key element in defining the method of developing businesses in most of the worlds developed economies of the globe.

Thus, the consumer value creation has become a strategic imperative of organizations in order to build and maintain a competitive advantage over competitors. Over time a number of definitions of value have been proposed by various authors, of which standing out the one proposed by Holbrook (1994, 1999), Woodruff (1997) and especially the one proposed by Zeithaml (1988).

The author proposes four definitions for the concept of value:

1) Value represents a low price;
2) Value represents whatever is desired by consumers in a product;
3) The value represents the quality obtained for the price paid;
4) Value represents what is obtained for what is offered.

Zeithaml (1988) believes that the last definition proposed- the compromise between what is sacrificed in exchange for what is obtained- as best suited for the concept of perceived value. Note that the last definition is adopted by many other studies in the field value.

The conceptual model proposed by Zeithaml (1988) involves establishing a hierarchy of variables according to their level of abstraction, providing an overview of established relations between the concepts - perceived price, perceived quality respectively perceived value. According to this model, consumers evaluate products and services based on their perceptions about price, quality and value, rather than on the base of some objective attributes - real price or real quality (Sanchez-Fernandez & Iniesta-Bonillo, 2007).

More and more companies now base their price on customer's perceived value. Firms must provide the value they promised by the valuable proposal made to the market, and the customer must perceive this value. Therefore, they use the other elements of the marketing mix, such as advertising and sales force to communicate and improve the perceived value in the minds of buyers (Tung-Zong Chang and Albert R. Wildt, 1993).

Perceived value consists of several elements, such as the image which the buyer's makes about the performance of the product / service, the things that the channel of distribution needs to provide, quality guarantee, customer support for the client and a set of abstract attributes, such as supplier's reputation, seriousness and the respect they enjoy. Moreover, each potential client attaches importance differently to those elements, the result being that some of them will be become buyers. Even when a company claims that its offer provides more overall value, not all customers will respond positively. There will always be a segment of buyers who do not care about price. There are also buyers who suspect that the company exaggerates about the product quality and its services.

The basic condition in establishing the price based on perceived value is to provide more value than competitors and to demonstrate this to their potential buyers. In principle, the company must study the factors that influence customer perception of value and understand the customer's decisional process. The company may seek to determine the perceived value of its

offer on several ways: internal managerial assessments, compared to similar products value, research through focus groups, surveys, experimentation, analysis of past data and combined analysis. (James C. Anderson, Dipak C. Jain, and Pradeep K. Chintagunta, 1993).
Value perceived by customers is treated as a single general concept, and value perceptions of individuals can be measured and evaluated using a single measurement variable (or set of variables closely related) (Dodds & Monroe, 1985; Monroe & Chapman, 1987; Zeithaml, 1988, Dodds et al., 1991, Bolton & Drew, 1991; Spreng et al., 1993, Lapierre et al., 1999, Sweeny et al., 1999; Agarwal & Teas, 2001, 2002).

Also, this perspective offers the possibility of inclusion of multiple antecedents of value, but the concept itself is treated as one-dimensional form, being excluded the idea that it can actually be formed by aggregating several distinct components (Sanchez-Fernandez & Iniesta-Bonillo, 2007). Meanwhile, one-dimensional approaches of the concept of perceived value is the starting point like the first stage of research of this concept.

According to one-dimensional research studies of value, this is treated from a utilitarian perspective, economic and rational thinking of consumers being used to assess the benefits and sacrifices relevant for consumption situations (Sanchez-Fernandez & Iniesta-Bonillo, 2007). One of the first studies addressing quality-price relationship and its influence on value is realized by Dodds and Monroe (1985). They are trying to study the impact of odd and even prices.
In order to achieve the objective proposed, those authors consider that the impact of odd or even price on purchase intention is not a direct one, but is mediated by the concept of quality and value perceived by consumers. Thus, a price increase will reflect by changing consumer perceptions on product quality and service in the sense that the quality of the objective will increase too. At the same time, a price increase will have a negative impact over objective value concerned, consumers feeling an increase or decrease of it.

Proposed conceptual model (Dodds & Monroe, 1985) is shown in the following figure:

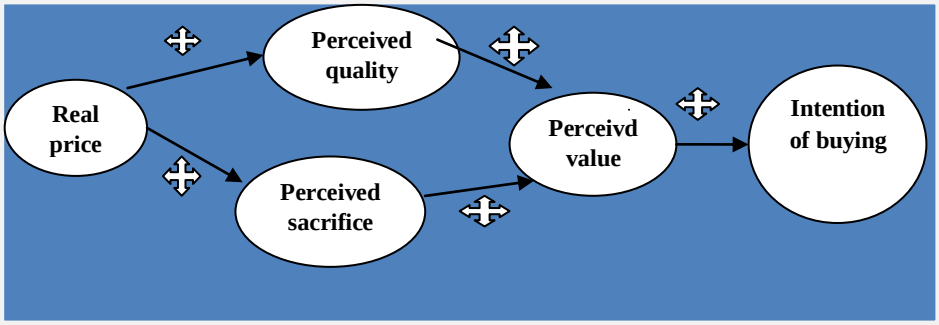

Figure 1. Relationship between price and the intention of buying
(Source: Dodds & Monroe, 1985:86)

After analyzing the results, the authors of that study demonstrated that the supposed relationships alleged to exist between the concepts of the proposed model are validated by the data collected. So the link between the price of products or services is mediated by the concepts of quality and value.

After a short review of the literature in the field, we have been able to notice that the quality of services is based on different conceptual models, this quality being analysed from the perspective of consumers' expectations and perceptions on services (Morar & Plăiaș, 2014, p. 14). Thus, representatives of the North American School, Parasuraman, Zeithaml and Berry (PBZ), support the idea of conceptualization and operationalization of service quality powered by perceptions on service performance and consumer expectations.

"The quality of service as perceived by consumers can be defined as the size of the gap between consumers' expectations or desires and their perceptions". (Zeithaml et al., 1990, p. 19)

The main supporters of this perspective are: Busu (2015), Gronroos (1991), Lewis (1991), Mangold & Babakus (1991), Busu et al. (2015), Oliver (1993, 2010) cited in Radomir (2013, p. 9). Summarizing what has been said, the aforementioned authors suggest the existence of a comparison standard for assessing service quality.

Concerning the research studies on telecommunications services, we have identified several papers about the users of these services. Bayer, J. (2010) conducted a study in which he divided customers in four segments: Customer Value Segmentation, Customer Behaviour Segmentation, Customer Life Cycle Segmentation and Customer Migration Segmentation. According to him, mobile network operators have understood the importance of segmentation and tried to make every customer be part of a micro-segment. The author has also understood that there is something else in addition, besides the standard segmentation: consumers who have a subscription or a card, such as consumer versus business. Using an advanced segmentation, both customers and business have the chance to win: customers receive what they want at the right time while company's profitability increases (Bayer, J., 2010, p. 256). He & Li (2011) have also studied how the quality of mobile services in Taiwan influences holistic perception of service quality, the perceived value and brand equity.

After analysing the proposed model, He & Li (2011) have concluded that the dimensions of a service do have different effect on service quality and on the value perceived by customers. According to them, the functional aspects of services (network quality and reliability), such as staff empathy and faith, are significant factors for the overall quality of services, all these leading to a stronger brand equity (He & Li, 2011, p.95). In addition, the cited authors have surprised the partial effect of the value perceived in the relationship between service quality and brand equity.

A recent case study on Romanian telecom market was done by (Mihail, 2014), in which the author evaluated the concentration degree in Telecom Sector. The case study presented in his paper analyzed the mobile market in Romania compared to that corresponding to the other European Union Member States. Although the Connected Continent Package adopted by the European Commission did not involve the regulation issues, it provides a series of incentives for increasing investments as well as consumer protection. The author also brought into focus the last legislative developments, coupled with the current economic context specific to Romanian mobile market.

In another study, the authors (Băcilă & Rădulescu, 2014), have identified eight segments of customers of telecom enterprises with different behaviours. By knowing these aspects, the company may create differentiated marketing strategies according to certain criterions describing consumer buying behaviour, for example the RFM customer value: recency, frequency and monetary value (Băcilă, Rădulescu, 2014, p. 49).

3. Methodology

The aim of this study is to investigate the relationship between the quality perceived by mobile services consumers in Romania and the price.

The data analysed in the present paper are part of an online questionnaire administrated by means of the web page: www.isondaje.ro. These data were collected on the basis of a study conducted between December 2014 and February 2015 among mobile services consumers in Romania.

Due to the fact that the random survey or probabilistic sampling supposes the existence of a complete frame (Pop, 2004; Buiga, 2008), in the present research work we appeal to *the non-probability sampling method* namely the snowball sampling method because the authors could not been able to access an exhaustive list of statistical units. Among the persons having received the questionnaire, only 260 of them answered. Using the snowball sampling method, we could not been able to calculate the success rate; however, considering our main purpose consisting in generalizing the results to the entire population, our decision to use the mentioned method is based on the opinion of other statisticians, such as Bell and Bryman (2007). The named researchers consider that the sheer size of a sample is more important that its relative size reported to the entire researched population. Afifi and Clark (1990) believe that the number of questionnaires should be between 5 and 10 times greater than the number of the questions, thus reducing the response errors. In the case of our analysis, this ratio is of 8.67 times greater (260/30), result which fits with the range indicated by the two famous statisticians.

Demographic features taken into consideration and included in the present paper are linked to: gender, education, age, income of consumers as well as the dimensions of mobile operators they are using, the type of mobile service and the number of minutes used in the network (see Table 1).

Table 1. Frequency statistics regarding mobile consumer and demographics

The mobile phone operator service:

Telekom	43	13%
Vodafone	120	36%
Orange	137	41%
Digi Mobile	37	11%

Type of mobile services used:

Prepaid card	51	20%
Subscription	179	69%
Prepaid and subscriptions	28	11%
Neither prepaid nor subscriptions	2	1%

The number of monthly minutes used by the respondents:

0 - 300 minutes	101	39%
301 - 600 minutes	72	28%
601 - 900 minutes	31	12%
901 - 1200 minutes	19	7%
1201 - 1500 minutes	13	5%
over 1500 minutes	18	7%
Don't know/ Do not respond	6	2%

Gender:

Men	74	28%
Women	186	72%

Age:

18 - 25 years	28	11%
26 - 35 years	60	23%
36 - 45 years	64	25%
46 - 55 years	72	28%
56 - 65 years	32	12%
over 65	4	2%

Highest graduated education level:

High-school, similar or lower	27	10%
College, bachelor or similar	88	34%
Master, PhD, similar or higher	142	55%
Others	3	1%

Individual monthly net total income

under 1.000 lei	30	12%
1.001 – 2.000 lei	68	26%
2.001 – 3.500 lei	104	40%
3.501 – 5.000 lei	41	16%
over 5001 lei	17	7%

Source:*Authors' own processing of data from the questionnaire*

The aim of this paper as well as the objectives of the research derives from the formulation of the following hypotheses:

H_1.There are significant differences between the importance of service quality and the level of tariffs.
$H_{2\ [(a,b,c)]}$: There are significant differences between the importance of the three variables [(a) its customers migrate to other mobile operator / (b) the operator applies differential pricing to its customers / (c) the operator allows the negotiation of prices for its services as regards to the fairness of a mobile operator toward its customers].
H_3. Mobile operators apply abusive prices to their customers.

4. Results and discussion

Statistical hypotheses enounced in the Methodology section were tested by using Statistical Hypotheses Testing Method by means of SPSS 21 Program.To verify this hypothesis, we will use the *Statistical Hypotheses Testing Method* for the difference of averages of two independent variables.
Firstly, we will formulate two related statistical assumptions:

H_0: There are not significant differences between the importance of service quality and the level of tariffs.
H_1: There are significant differences between the importance of service quality and the level of tariffs.
Then we introduce the two sets of data in SPSS Program and test whether this difference is significant or not. The results can be seen in the following table:

ANOVA
tariff

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	68.162	4	17.040	23.413	.000
Within Groups	185.592	255	.728		
Total	253.754	259			

In the One Way ANOVA Table we notice that Sig. value (0.000) is very small. This indicates us that the difference between the averages of two variables is significant.
Thus, we accept the *Alternative Hypothesis (H_1)* and say that, at a significance level of 95%, *there are significant differences between the importance of service quality and the level of tariffs.*
The second statistical hypothesis was also checked by using the Statistical Hypotheses Testing Method for the difference between the two independent variables.

Firstly, we will formulate the two statistical assumptions:
H_0: The importance of services is the same for all three variables.
H_1: There are significant differences between the importance of the three variables.

After entering the three sets of data in the SPSS Program, we test whether these differences are significant or not. The differences between these three variables will be tested in pairs, two by two. We will switch these variables each other and analyse by means of One Way ANOVA Method each of the three cases. The results can be seen in the following three tables:

ANOVA
differentiated pricing vs. allows negotiation

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.749	4	6.187	4.413	.002
Within Groups	357.498	255	1.402		
Total	382.246	259			

ANOVA
Differentiated pricing vs. customers migrate

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	68.604	4	17.151	13.944	.000
Within Groups	313.643	255	1.230		
Total	382.246	259			

ANOVA
Customers migrate vs. allows negotiation

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.119	4	3.030	2.930	.021
Within Groups	263.635	255	1.034		
Total	275.754	259			

In each of the three tables, we notice that values (Sig.) are very small in relation to the critical value of 0.05 which leads to the conclusion that H_1 isthe accepted hypothesis, ie *there are significant differences between the importance of the three variables.*
Regarding the third hypothesis, this will be also tested by using SPSS Program by means of Statistical Hypotheses Testing Method for the average of an independent variable.

First we formulate the two statistical assumptions:
H_0: Mobile operators do not practice abusive prices to their customers ($\mu=3$)
H_1: Mobile operators practice abusive prices to their customers ($\mu\neq3$)

We introduce data series in SPSS Program and test whether this difference is significant or not. We have only one set of data whose average will be compared to the neutral value (3). The results can be seen in the following table:

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Diff.	
					Lower	Upper
abusive price	1.404	259	.161	.10000	-.0402	.2402

From this table, we can notice that the value Sig (=.161) is higher than the critical value 0.05. It follows that we will accept *the Null Hypothesis* and that the *mobile operators do not practice abusive prices to their customers.*

In order to realize a synthesis of the main research findings, we have established a list of the hypotheses whose checking process is explained in detail within the 3rd chapter of the present paper.

Hypothesis	Validated
Hypothesis 1: For a mobile services' user there are significant differences between service quality and the level of the tariff paid.	✓
Hypothesis 2: The following three variables have the same impact on respondents' perception in terms of the fairness of a mobile operator towards its customers: • ***Its customers migrate toward another mobile operator.*** • ***The mobile operator applies differentiated prices for its customers.*** • ***The mobile operator allows price negotiation for its services.***	✗
Hypothesis 3: Mobile operators do not practice abusive prices to their customers.	✓

Source: Authors' own processing of data from the questionnaire

As can be seen in the table above, from the three tested statistical hypotheses, in two of the cases we have accepted the Alternative Hypothesis and in the third one, we have accepted the Null Hypothesis.

5. Conclusions, research limitation and future directions

The conceptual model proposed by Zeithaml (1988) treats the concept of perceived value as belonging to a lower level of abstraction (on the same level with that of the attributes of a product or service). The concept of quality is situated on a higher level of abstraction than the price charged, and the value perceived represents a construct situated on a higher level than quality, while being derived from the two previous concepts - perceived price-perceived quality.

Pricing based on perceived value indicates the importance of providing benefits and functionality for the consumer and simultaneously the price must be effective, so that the firm can take an appropriate value. Value strategies are emerging as a third alternative in which the

company is trying to acquire the best price, with due regard to the fact that consumers can get a fair surplus.

The main conclusions resulting from the validation/invalidation of the above mentioned hypotheses are the following ones:

i. Users of mobile services perceive differently the service quality and the level of the tariff paid. Specifically for them, the qualitative aspect of service is more important than the one linked to the price.
ii. The impact of the three variables tested by means of Hypothesis 2, namely: "its customers migrate toward another operator", "mobile operator applies differentiated prices to its customers" and "mobile operator allows the negotiation of prices for its services" is different for mobile services users in Romania. Perceived value is not uniform among respondents. If some of them consider that the migration of a user to another operator is due largely to the incorrectness of the operator toward its customers, there are other respondents considering that this might be due to differentiated prices applied by the operator or to the fact that the operator itself allows or not the negotiation of tariff.
iii. Customers of mobile telecommunications companies do not believe that operators' prices would be unfair. This means that there is a high degree of satisfaction with respect to the offered services.

In terms of the practical part of the research paper, by means of the effected tests, we have been able to notice a uniform continuity of answers coming from the respondents presenting the same similarities. The results of applying managerial strategies are highlighted by quantifying the effects on customers from the telecom sector. Market evolution indicates implicitly the necessity of accumulating investments in research and innovation area. A major managerial objective for the enterprises operating in telecom sector should be represented by the investment process. From this perspective, any investment project of a company is conditioned in terms of the decision-making process, by the ability to ensure funding sources for the activities in the field of research and innovation.

The main limitation of the study is linked to the way of realising the sampling process. First of all, due to the lack of a sampling frame, we have used a non-probability sampling method, the snowball method, which decreases the representativeness of the sampling. Another limitation of the paper is related to the financial part and to respondents' unavailability, this leading to a reduced number of completed questionnaires.

As future research directions, we plan to do a more detailed analysis on each geographic region of the country which will give us an opportunity to analyse whether the satisfaction degree of mobile services users varies from one region to another. Moreover, we wish to realize a marketing research for pursuing the relationship between customers' personal values or that of the potential ones as well as the assessment of the extent corresponding to the perceived value by telecom customers.

Acknowledgement: This work was cofinanced from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/159/1.5/S/142115 „Performance and excellence in doctoral and postdoctoral research in Romanian economics science domain".

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