

## THE QUALITY OF BRAND PRODUCTS: EXPECTED ATTRIBUTES VS. PERCEIVED REALITY

Pavol Durana<sup>1</sup>, Jana Kliestikova<sup>2</sup>, Maria Kovacova<sup>3</sup>

<sup>1</sup>University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzita 1, 010 26 Zilina, Slovak Republic, pavol.durana@fpedas.uniza.sk

<sup>2</sup>University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzita 1, 010 26 Zilina, Slovak Republic, jana.kliestikova@fpedas.uniza.sk

<sup>3</sup>University of Zilina, Faculty of Operation and Economics of Transport and Communications, Department of Economics, Univerzita 1, 010 26 Zilina, Slovak Republic, maria.kovacova@fpedas.uniza.sk

### Abstract

**Research purpose.** The quality means a core attribute of the product. Based on empirical assessment of the consumer, it is ascertained if the products are of high quality. However, there may be considerable counterarguments against this assessment, because quality is a subjective characteristic. For this reason, a paradoxical situation arises – the same product that we consider to be a quality product someone else may regard as insufficient quality. What is considered standard quality level in some cases may be the assumed to have achieved world-class quality. This way the definition of quality product is very difficult. Brand is one of possible ways to differentiate products from one to another and at the same time it is one of possible ways to simplify consumer choices of choosing the best product. The brand can be the label for many consumers synonymous with quality. In this paper, the existence of difference between expected and delivered quality of brand products is analysed.

**Design / Methodology / Approach.** The survey of detection of the sources of the value of the brand was realized in 2018 in Slovak conditions. This primary source provided the base assessment of quality of branded sport clothes, cars, banks, cola drinks and brand products in general. Using factor analysis, supported by Cronbach's alpha, verified by Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity, comprehensive factors that enable comparison of expected attributes and perceived reality were constructed. The extraction method of factor analysis was principal component analysis, the rotation method was Varimax with Kaiser normalization. Then the factors were analysed by chi-square test and correspondence analysis.

**Findings.** The objective of this article was to detect the existence of differences between the expected and perceived quality of brand products in Slovak conditions. Comprehensive factors were constructed that contain information about quality of branded clothes, cars, banks, cola drinks and brand products in general. The dependence of expectations and reality was indicted and paper resolved the relations between individual categories of factors.

**Originality / Value / Practical implications.** The original survey of attitudes of Slovak consumer was made. The information about of notable sample was analysed, and this empirical study pointed out the real quality of brand products.

**Keywords:** Brand; Consumer; Product; Quality.

**JEL codes:** M30; M31.

### Introduction

“During the last decade world has undergone many dramatic changes, one such change that change the lifestyle of the human kind is the change in the shopping patterns of the consumers regarding various products and services” (Singh & and Singla, 2018). Marketing management implies the understanding of the dependence between market and consumption as well as the philosophies related to the maximization of an enterprise's output (Chaves, 2017). Every marketing manager must identify her consumers, understand them and focus on them. “Consumers use extrinsic and intrinsic cues to set preferences and make purchase decisions” (Audrin *et al.*, 2018). Quality means the core cue for the majority of the consumers. “Delivering quality products requires an understanding of the critical

dimensions and cues that consumers use to judge quality.” Brucks *et al.* (2000). Dawar & Parker (1994) note that brand is one of the signals of consumer's marketing universals for quality. Nagaraj & Singh (2018), Valaskova *et al.* (2018) and Ledikwe *et al.* (2019) note that high quality builds consumer loyalty to the brand. Janoskova & Krizanova (2017) add that “the brand name identification with consumers creates benefits that the enterprise may charge higher price for the same product, leading to higher profit margins, growth and firm value to net sales ratio”. Successful differentiation of the brand products has been gained worldwide (Singh & Singla, 2018) and for the enterprises, it is necessary to know the assessment of delivered quality brand products from the view of the consumers. The goal of this article is to ascertain the existence of differences between anticipated and perceived quality of brand products in Slovak conditions and indicate the dependence (correlation) of expectations and reality.

### Literature Review

The quality associated with a brand means significant factors of the reputation as a part of enterprise's “goodwill” (Podhorska & Siekelova, 2016) and the tools of competitiveness or support of satisfaction. Vagner (2016) assesses competitiveness tool in the global market as follows. The companies have a possibility to offer their services to more potential customers. The companies already established in the domestic market with their own know-how may try to find new markets, where its products could fulfil a gap in those markets. On the other hand, by opening of market boundaries, new competitors will join the trade and will attempt to gain their position on the market. In this connection, Vagner & Bartosova (2017) analyze core and supporting activities in Slovak enterprises, concretely focusing on the enterprises located in the central Slovak region. Kicova & Nadanyiova (2017) consider brand a tool of strategic marketing. Nadanyiova *et al.* (2018) relate the tool of strategic marketing to value-based pricing strategy. Sugrova *et al.* (2017) detect the influence of product quality on consumer satisfaction. This paper found that frequency of buying dairy product depends on whether the customers are satisfied with the product quality. Deep research about customer satisfaction is made by Oh & Kim (2017). This study reviewed 242 articles appearing in six selected hospitality and tourism journals and 71 articles in four business journals over the period 2000–2015. A comprehensive coding scheme was developed to sort each study by more than 50 criteria. Chen *et al.* (2019) mark the quality of brand product as a determinant of quantity of repurchase and brand attractiveness and memorable brand experiences are found to strengthen the positive effect of brand awareness and perceived value. Brand name as indicators of quality dimensions confirm the observation of Brucks *et al.* (2000). Using a qualitative study, the authors develop a generalizable typology of quality dimensions for durable goods that includes ease of use, versatility, durability, serviceability, performance, and prestige and conduct a process-tracing laboratory experiment. The results of the experiment indicate that consumers use price and brand name differently to judge the quality dimensions, searching for price and brand name much more frequently when evaluating prestige than when evaluating any other quality dimension. Zhu & Chen (2017) discuss that consumers' purchase decisions typically affect brands of the manufacturer as well as the retailer brand. This research reveals that the loss/gain feelings as the underlying mechanism drive such effects and additionally shows that reference points can be primed such that their effects for one brand can spill over to other brands. Kato & Tsuda (2018) emphasize that the concept of quality includes not only objective value (functional value) but also subjective value (emotional value). Valle *et al.* (2017) assess consumers' willingness to pay for the expected quality. There are a few examples of studies evaluating the factors that create a quality brand image based on the customers' perception (Kato & Tsuda, 2018). They extracted top quality brands from the perspective of customers across industries and evaluated their causal relationship. Data was analysed in nine countries. The perceptions of product quality and brand name was studied by Rao & Monroe (1989) 30 years ago. The role of perceived quality also in brands' purchase intention was examined by Calvo-Porrall & Levy-Mangin (2017). A structural equation modelling on a sample of 439 consumers was developed, distinguishing between consumers with high perceived quality (HPQ) and low perceived quality (LPQ). Their findings highlight that purchase intention of store brands is strongly influenced by confidence for both HPQ and LPQ customers, followed by product price. Additionally, results suggest the moderating role of perceived quality on some of the proposed relationships. The new preferences of consumer comparing the enterprises that produce original brand against high-quality copycats were identified by Nguyen & Gunasti (2018). The results systematically show the power of brand identity cues in helping original brands reduce loss of

market share to copycat brands using superior product attributes. They also reveal the role of brand equity, conspicuous consumption and consumers' tendency of using brands as status symbols in enhancing the effect of brand identity cues in the face of superior copycats.

### Methodology

An analysis of the literature allows us to formulate the following research question:

**Hypothesis:** *A significant dependence exists between the expected quality and the perceived quality of brand products.*

All details regarding the materials and methodology are as follows:

1. The information (primary source) used in this paper was gained from the survey undertaken by the authors. The survey was carried out in 2018 to ascertain the attitudes of Slovak consumers to branded products, in particular, the concrete attitudes to the quality of brand products in general, branded sport clothes, cars, banks and cola drinks. Random sampling was chosen for our analysis. Singh & Masuku (2014) suggest minimum size of the sample to contain 400 elements. The original sample had had 2 002 answers; after elimination of outliers the sample was reduced to 1641 cases. The attributes of the sample are demonstrated in Table 1.

**Table 1. The attributes of the sample** (Source: Authors based on own survey)

Gender					
Men			women		
708			933		
Education					
Only basic educated		Higher educated		University educated	
303		867		471	
Age					
16–25 years	26–35 years	36–45 years	46–55 years	56–65 years	Over 65 years
229	301	456	158	244	253
Monthly household income					
To €500	€501–1 000	€1 001–1 500	€1 501–2 000	Over €2000	
147	336	624	405	129	

2. The survey contained 10 questions measured by a 5-point Likert scale, where point 1 corresponds to ‘strongly disagree’ and 5 ‘strongly agree’. Questions were labelled from Q01 to Q10. All questions have the same positive coding. The content of the questions is part of the results. It was decided not to use all questions alone, but form them from new components (factors, variables), that have common information about perceived quality and expected quality. The set of questions was reduced to two heterogeneous components by factor analysis. The number of components was the assessed criterion of convergence of eigenvalue to the value 1 (Kral *et al.*, 2009). The adequacy of the use of factor analysis is checked by the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. The extraction method is principal component analysis, the rotation method is Varimax with Kaiser normalization and rotation converged in three iterations. The reliability of the factors is tested by Cronbach's alpha. Rimarcik (2007) describes Cronbach's alpha as the possible method of the determining the reliability of the used method. Cronbach's alpha is an index of internal consistency of the factor and can take values from 0 to 1.
3. Cross-tabulation of the expected quality and the perceived quality was done to indicate the possibility of the use of the Person chi-square test and to test the dependence between these ordinal variables. The assumption of 20% of cells having less than five expected (theoretical) observations is satisfied; it is exactly 20% of cells. The strength of dependence and its statistical

significance between expected quality and the perceived quality were tested by Somers' d, Kendall's tau-b, Kendall's tau-c and Gamma according to Rezankova (2017). These coefficients were used because of the variables are ordinal.

4. Subsequently, the authors undertook the correspondence analysis with an overview and correspondence map of row points, an overview and correspondence map of column points, and a correspondence map of row and column points as well, in order to ascertain the relationship between categories of expected quality and the perceived quality. Correspondence analysis is a method used to detect groups of similar categories. Its main advantage is the ability to analyse the relationship between the categories of two variables at the same time (Rezankova, 2017). Correspondence analysis examines the internal structure by means of correspondence maps showing variable categories in a reduced two-dimensional coordinate system. Kral *et al.* (2009) discuss the fact that row and column points can be considered as coordinates of the point in  $r(s)$  dimensional space, and from the viewpoint of the practical application, their visual representation uses two-dimensional correspondence maps.
5. IBM SPSS Statistics v. 25 software was used.

## Results

The answers of the realized survey were ordinal variables. Rimarcik (2007) recommends for social sciences the possibility to use the methods of interval variables for analysing ordinal variables. However, two criteria must be fulfilled: (i) the number of categories should be at least 5 and (ii) at the same time there is no reason to predict significant differences in distance between individual categories. For these reasons, we consider the answers of the consumers as the interval input variable.

**Table 2. KMO and Bartlett's test** (Source: authors based on SPSS output)

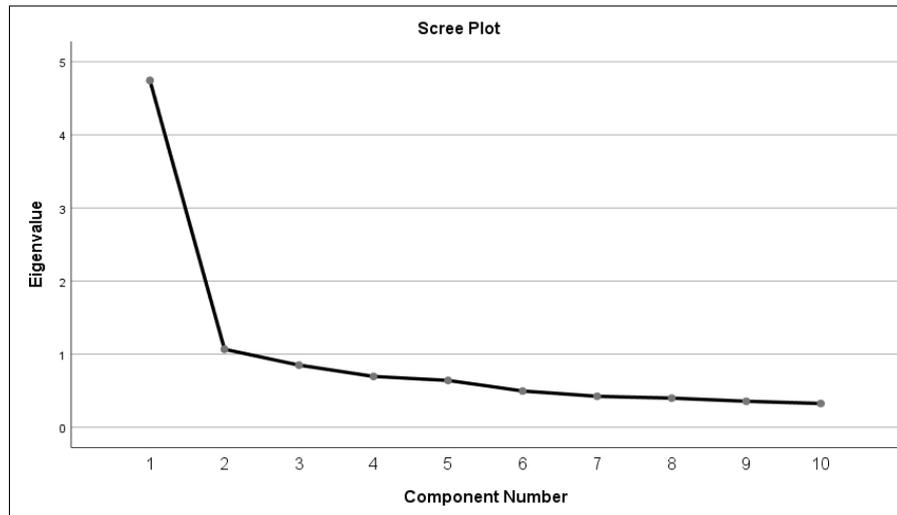
<b>Kaiser-Meyer-Olkin measure of sampling adequacy</b>		0.8833
<b>Bartlett's test of sphericity</b>	Approx. chi-square	6511.56
	df	45
	Sig.	0.000

Before undertaking factor analysis, it is necessary to calculate sampling adequacy. Factor analysis requires the correlation of original input variables (Kral *et al.*, 2009). To evaluate the dependence of the input variables, KMO criterion is used. In our case is the value of KMO (Table 2) equals to 0.8833. The KMO value between 0.8 and 1 indicates the sampling is adequate; concretely, if the value is in the spread 0.80 to 0.89, adequacy is meritorious (Kaiser & Rice, 1974). Correlation matrix is an identity matrix, which would indicate that variables are unrelated, and is the null hypothesis of Bartlett's test of sphericity. Based on the comparison of the significance from Table 2 to the significance level of 0.05, we rejected null hypothesis and accepted alternative hypothesis: correlation matrix isn't an identity matrix, variables are related, and factor analysis is useful.

The number of factors can be chosen according many criteria. Figure 1 (Scree plot) shows the number of possible of components and the relevant eigenvalues for them. The next step of the analysis is the derivation of some groups that are so similar in the characteristics that could be analysed together (Svabova & Kral, 2016). We chose two components because the eigenvalue is close to the value 1 and these factors explained 58.119% of the variability (Table 3). Rimarcik (2007) highlights that answers to the individual questions do not have the same importance as the overall score of the factors.

**Table 3. Total variance explained** (Source: authors based on SPSS output)

Component	Initial Eigenvalues		
	Total	% of variance	Cumulative %
1	4.744	47.443	47.443
2	1.068	10.676	58.119



**Fig. 1. Scree plot** (Source: Authors based on SPSS output)

Ideally, for interpretation, any indicator should show a saturation with just one factor. In practical situations, one indicator has high factor saturation with several factors. It is rotated and tried again and again to ensure that each indicator has high saturation in one factor (Kral *et al.*, 2009). It is possible to see that highest saturation of questions 01, 03, 05, 07 and 09 with component 1 is sorted by size and questions 2, 4, 6, 8 and 10 with component 1 also sorted by size (Table 4). Factor 1 involves all questions describing the attitudes of perception of quality of brand products (Table 5); this factor is labelled as perceived quality. Factor 2 contains all questions concerning the attitudes of expectation of quality of brand products (Table 6), which we call the expected quality.

**Table 4. Rotated component matrix** (Source: authors based on SPSS output)

Component	Questions									
	Q01	Q09	Q07	Q05	Q03	Q04	Q06	Q08	Q10	Q02
Component 1	<b>0.811</b>	<b>0.773</b>	<b>0.668</b>	<b>0.655</b>	<b>0.615</b>	0.159	0.199	0.259	0.416	0.430
Component 2	0.060	0.269	0.318	0.285	0.401	<b>0.819</b>	<b>0.753</b>	<b>0.711</b>	<b>0.682</b>	<b>0.433</b>

**Table 5. Component 1** (Source: authors)

Questions	Content
Q01	I perceive brand product as a quality product.
Q09	I perceive branded sport clothes as a quality product.
Q07	I perceive branded cola drinks as a quality product.
Q05	I perceive branded banks as a quality product.
Q03	I perceive branded cars as a quality product.

**Table 6. Component 2** (Source: authors)

Questions	Content
Q04	I expect quality from branded cars.
Q06	I expect quality from branded banks.
Q08	I expect quality from branded cola drinks.
Q10	I expect quality from branded sport clothes.
Q02	I expect quality from brand product.

The values of Cronbach's alpha are shown in Table 7; the values are equal to 0.820 and 0.806. Rimarcik (2007) states that a Cronbach's alpha value at least 0.8 is required. It is a sign of a very high internal correlation between the items and indicates that items are based on the same principle. We note that the high Cronbach's alpha value marks that the questions are appropriately connected and the factors create the base for the very reliable results of the followed analyses. We do not use the factor score but the average of the questions rounded; the higher the value, the higher agreement of the consumers.

**Table 7. Reliability statistics** (Source: authors based on SPSS output)

Component	Cronbach's alpha	Number of items
Component 1 (Perceived quality)	0.820	5
Component 2 (Expected quality)	0.806	5

The next step is the cross-tabulation of the expected quality and the perceived quality. Twenty per cent of the cells had expected count less than 5 (bold values in Table 8). The minimum size is exactly 20%.

**Table 8. Cross-tabulation** (Source: authors based on SPSS output)

Expected quality	Perceived quality (Observed/Expected)										Total
	1		2		3		4		5		
1	10	<b>0.5</b>	7	<b>1.8</b>	0	5.7	0	6.8	0	<b>2.2</b>	17
2	9	<b>1.3</b>	24	<b>4.7</b>	11	14.8	0	17.5	0	5.7	44
3	13	8.6	74	32.3	185	100.6	26	118.8	1	38.8	299
4	10	20.2	51	76.1	270	237.5	353	280.5	22	91.6	706
5	5	16.5	21	62	86	193.4	273	228.5	190	74.6	577
Total	47		177		552		652		213		1 641

**Hypothesis:** *A significant dependence exists between the expected quality and the perceived quality of brand products.*

**Testing of Hypothesis:** We test the hypothesis of dependence between the expected quality and the perceived quality of brand products at the significance level of 0.05, which is compared to the significance. Based on data from Table 9, we reject the hypothesis of the independence of the variables analysed and accept the significant dependence of the expected quality and the perceived quality of brand products.

**Table 9. Pearson chi-square test** (Source: authors based on SPSS output)

Pearson chi-square	df	N of valid cases	Significance
972.817	16	1 641	0.000

The Pearson chi-square test confirms the dependence between these ordinal variables. Based on data from the Mantel-Haenszel test shown in Table 10, we repeatedly confirm the dependence.

**Table 10. Mantel-Haenszel test** (Source: authors based on SPSS output)

Mantel-Haenszel test	df	N of valid cases	Significance
828.143	16	1 641	0.000

We identified the significant dependence of the ordinal variables. Rezankova (2017) recommends indicating the intensity of the correlation by means of Somers' d, Kendall's tau-b, Kendall's tau-c and Gamma according to this scale:

- 0.0 < the value of the coefficients  $\leq$  0.3      weak correlation
- 0.3 < the value of the coefficients  $\leq$  0.8      medium dependence
- 0.8 < the value of the coefficients  $\leq$  1.0      strong dependence

The values of all coefficients determine a medium level of correlation between the expected quality and the perceived quality of brand products. The significance of the coefficients should be below the determined significance level. Based on the comparison of the significance from Table 11 to the significance level of 0.05, we assess that all correlation coefficients are statistically significant.

**Table 11. Coefficients of correlation** (Source: authors based on SPSS output)

Ordinal by ordinal	Value	N of valid cases	Significance
Somers' d	0.532	1 641	0.000
Kendall's tau-b	0.532	1 641	0.000
Kendall's tau-c	0.451	1 641	0.000
Gamma	0.734	1 641	0.000

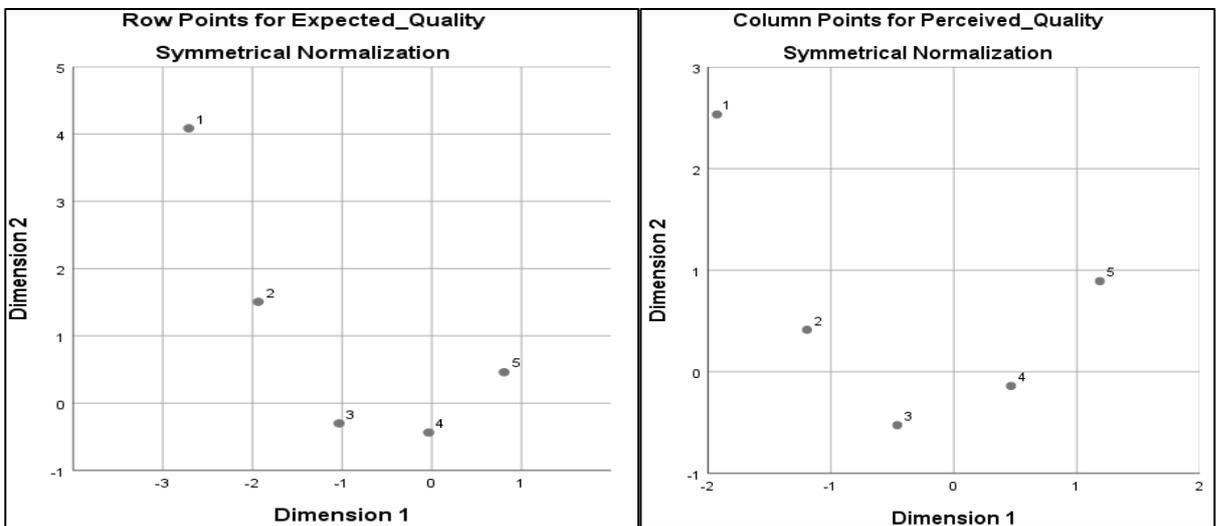
Correspondence analysis is used for detecting groups of similar categories. Its great advantage is the ability to analyse the relationship of a category of two variables at the same time (Rezankova, 2017). So, this method was employed to assess different categories for the relationship between expected quality and the perceived quality of brand products. Correspondence analysis examines the internal structure by correspondence maps showing variable categories in a reduced two-dimensional coordinate system. The first output of the correspondence analysis is the row and column points that are found in the Tables 12 and 13. Kral *et al.* (2009) discuss row and column points can be considered as coordinates of the point in  $r(s)$  - dimensional space and from the viewpoint of the practical application their visual representation is used two-dimensional correspondence map. The column total in the point tables indicated the contribution of row (column) points in total inertia. Inertia represents the degree of quality with which the points of the multidimensional space have been transformed into the correspondence map. In both cases, the individual contributions got 1 or was close to 1, which reflected the fact that the two-dimensional map corresponds to the well-considered categories. Correspondence maps were shown, individually for row, column points and common correspondence map of row and column points.

**Table 12. Overview row points** (Source: authors based on SPSS output)

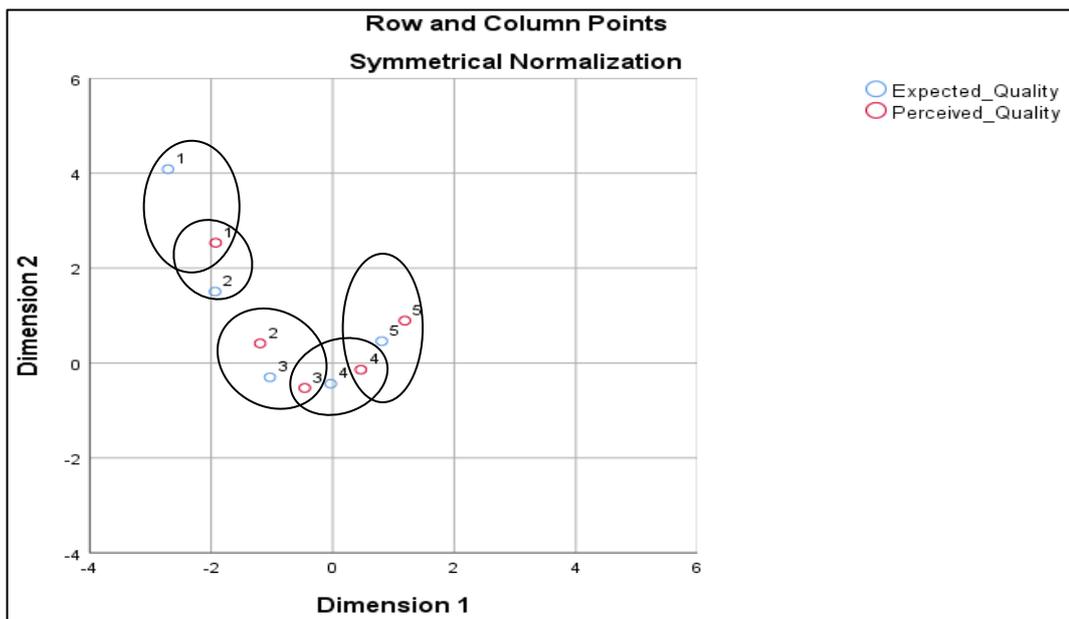
Expected quality	Mass	Score in dimension		Inertia	Contribution				
		1	2		of point to inertia of dimension		of dimension to inertia of point		
					1	2	1	2	Total
1	0.010	-2,710	4,084	0.131	0.127	0.425	0.348	0.536	0.884
2	0.027	-1,935	1,505	0.091	0.168	0.149	0.659	0.270	0.930
3	0.182	-1.033	-0.302	0.144	0.324	0.041	0.809	0.047	0.855
4	0.430	-0.034	-0.438	0.055	0.001	0.203	0.005	0.615	0.620
5	0.350	0.807	0.459	0.172	0.380	0.181	0.796	0.175	0.970
Active Total	1.000			0.593	1.000	1.000			

**Table 13. Overview column points** (Source: authors based on SPSS output)

Perceived quality	Mass	Score in dimension		Inertia	Contribution				
		1	2		of point to inertia of dimension		of dimension to inertia of point		
					1	2	1	2	Total
1	0.029	-1,926	2,533	0.152	0.177	0.452	0.420	0.492	0.912
2	0.108	-1,194	0.413	0.111	0.256	0.045	0.830	0.067	0.897
3	0.336	-0.460	-0.526	0.086	0.119	0.229	0.494	0.439	0.932
4	0.397	0.464	-0.141	0.076	0.143	0.019	0.679	0.042	0.721
5	0.130	1,187	0.892	0.168	0.305	0.254	0.651	0.250	0.901
Active Total	1.000			0.593	1.000	1.000			



**Fig. 2. Correspondence maps of expected and perceived quality** (Source: Authors based on SPSS output)



**Fig. 3. Correspondence map of expected and perceived quality** (Source: Authors based on SPSS output)

Based on common correspondence map of row and column points, we derived the relationship between the categories of expected quality and the perceived quality of brand products. First, the map indicates the relationship between the lowest points of the variables (marginal part of the sample). It means if the consumers expect that the quality of brand products is very low, their attitudes of perceived reality of quality of brand products are the same. In the case, if the consumers foresee not the lowest quality, but still low (minority portion of the sample), delivered quality of brand products is worse than expectations. Second, if the consumers are somewhere in the middle, they await neutral quality of brand products, and they perceive also neutral reality respectively in some cases even low quality. If the consumers have positive expectations of quality of brand products, they are confronted with positive delivering or neutral result. Lastly, if consumers estimate high quality of brand product they are mostly satisfied and in minor cases is the considered quality positive but not the world-class as they anticipate.

### Conclusions

In our paper we ascertained if all consumers consider brand products as a quality product, the dependence between expected and perceived quality as well as the intensity and last area was identification of the relationship between categories of expected and perceived quality of brand products. We did not solve all categories of brand products, but we created common comprehensive constructs of consumer's attitudes towards brand products in general, branded sport clothes, branded cars, branded banks and branded cola drinks. We analysed the research question by hypothesis that a significant dependence exists between the expected quality and the perceived quality of brand products. We accepted this hypothesis. It was confirmed statistically significant and medium correlation between the expected and the perceived quality. There was a little section of the sample which attitudes are negative to the brand products. They expect from brand products very low or low quality and their real perceived quality corresponds to it respectively is a bit worse. The rest of the majority part of the sample marked neutral or positive attitudes to brand products. These consumers had the conformity between the expectations and reality or there was a difference of a point when expectations surpassed reality. Further research of the issue should detail focus on identification of the causes of unconformities between expected and perceived quality of brand products and possible solutions for the managers to gaining the equality.

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