



Consumer behaviour under dual quality of products: Does testing reveal what consumers experience?

Lucia Bartková*, Lenka Veselovská

Institute of Managerial Systems, Faculty of Economics, Matej Bel University, Francisciho 910/8, 058 01 Poprad, Slovak Republic

Received 17 June 2022; revised form 20 February 2024; accepted 13 May 2024; Available online 20 May 2024

KEYWORDS

Consumer behaviour;
Comparative tests;
Dual quality;
European Union

Abstract The main aim of this paper is to explore the relationship between the nature of products tested to reveal dual quality and customers' experiences, and for individual organisations to arrive at important guidelines for future solutions to the problem. The data used in this study were provided by the first nationwide survey conducted on a sample of 987 consumers throughout the Slovak Republic. Based on the experiences and opinions of consumers, recommendations were formulated for brand owners offering products with dual quality. Knowing the opinions of consumers will allow companies to adapt their offerings to the market.

© 2024 Published by Elsevier Ltd on behalf of Indian Institute of Management Bangalore. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Introduction

Consumer behaviour is a broad concept that includes many variables. It is a person's behaviour when buying and consuming products. Consumer behaviour is largely a hidden process that cannot be directly observed; it can only be inferred from generalised knowledge and studies that can reveal hidden motives, based on which consumer behaviour can be partially predicted. Based on this knowledge, businesses can make decisions in creating value for the consumer

(Annarita, Fabio, & Marcello, 2023; Gallarza, Saura, & Arteaga, 2020).

One of the significant influences on consumer behaviour is the quality of the product. Consequently, in the 21st century, the ethical aspects of product quality started to acquire more importance (Huang, Lu, You, & Yen, 2012; Lu, Huang, & Chang, 2014). The effects of negative experiences have a greater impact on individuals than positive experiences of the same type (Ramachandran, Sudhir, & Unnithan, 2021). Information and personal experience with the dual quality of goods in the EU can have a negative impact on consumers, leading to a change of brand for products for which dual quality has been proven or with which they have personal experience. Therefore, among other things, the research interest also included exploring

*Corresponding author: Tel: +421 52 426 23 23, Scopus ID 57208705522

E-mail address: lucia.bartkova@umb.sk (L. Bartková).

<https://doi.org/10.1016/j.iimb.2024.05.001>

0970-3896 © 2024 Published by Elsevier Ltd on behalf of Indian Institute of Management Bangalore. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

whether Slovak consumers perceive the ethical dimension of dual quality.

The issue of dual quality is not a new phenomenon. It appeared naturally after the end of communism and the opening of the markets of Eastern and Central Europe to Western products and brands. Due to the relatively low standard of living in the countries of the former Soviet bloc, producers from the West had to adjust the recipe and composition of their products so that they could be purchased in Central and Eastern Europe (Baimenov & Liebert, 2019; Zolotareva & Druk, 2014). The people of the former communist countries wished to have the same goods as consumers in Western Europe, who were a strong reference group for them in terms of lifestyle and standards. However, given their standard of living, the inhabitants of Eastern and Central Europe could not get the same products as Western consumers, with the same composition and quality, as this would not be economically possible.

At present, however, the situation has changed. The standard of living in EU countries has slowly been levelling out, and, increasingly, people are travelling and shopping more abroad. Residents of the new EU member states gradually found out that goods they know from the counters of shops at home have different properties in foreign shops - different composition, different colour, smell, and product density, all in the same or very similar packaging often at a different price, often to the detriment of new countries. Politicians - especially in the Slovak Republic and the Czech Republic - became involved in this issue, took the opportunity, built their agenda on it, and encouraged a dual-quality solution through the European Commission.

Manufacturers and brand owners commented little on the cases identified. Some of them confirmed, explained, and eliminated the use of dual quality. Some producers objected to the results and explained them from their point of view (Sameková, 2017). Some manufacturers declined to comment or explained the dual quality in terms of different taste preferences and consumer habits in different countries (Benešová, Švejdová, & Kubová, 2017; Řezníčková, 2017; Sladkovská, 2017a; Southey, 2019). However, there were cases when the producer did not react at all, as they were not represented in the given country, where dual quality was revealed.

The views on this issue differ. Many, mostly food production enterprises, believe that the dual quality of products is simply an economic issue of differentiated price strategies. However, consumers believe that the nature of this problem is more serious, since it involves disrespecting the rights of consumers for fairness. As such, the issue of dual quality is both an ethical and legal problem that has recently begun to grow in importance (Annarita et al., 2023; Lozano & Padilla, 2013; Muncy & Iyer, 2021; Shah & Amjad, 2017).

To explore the actual state of dual quality in Europe, several comparative tests were carried out, which showed that dual quality exists in the EU, although it has not been confirmed that there are always better products in Western Europe. Testing authorities, national politicians, the European Commission, manufacturers and distributors, and consumers abroad have commented on this issue. In Slovakia, research on consumer attitudes to the issue of dual quality was scarce before the year 2020. A few of the studies that also focused on Slovak markets did not sufficiently cover this

issue or completely omitted the opinions of consumers (Andrejkovičová, 2017; Kuklová, 2017; Lacenová, 2018; Ministry of Foreign Affairs of the Slovak Republic, 2017; Sladkovská, 2017b). Therefore, a research team was formed to conduct empirical research and analyse consumer behaviour in Slovakia in the context of dual quality. One of the aims of this research project was to compare the results of comparative tests with the experiences of consumers with this ethical problem, since such analysis was lacking in the current pool of knowledge.

Literature review

Consumer behaviour as a basic marketing variable is characterised as human behaviour related to the acquisition, use, and disposal of consumer products (Koudelka, 2018; Macak, Regnerova, & Toth, 2014; Vokounova, 2014; Zhao & Wang, 2017). Based on an understanding of consumer behaviour, businesses can then create their marketing offer and apply it to the market. Consumer behaviour is largely individual and hidden. It is influenced by several factors that are not usually directly measurable (Tomek & Vávrová, 2011; Vukusic & Sago, 2018), but if we are aware of the possible factors, we can predict consumer behaviour. Some of the main factors that influence consumer behaviour are: cultural influences, social influences, consumer personality, and psychological predispositions (Bradford, Courtemanche, Heutel, Mc Alvanah, & Ruhm, 2017; Chen, Liang, Yao, & Sun, 2017; Mihai, Lazar, & Solomon, 2009; Papaiokonomou, Ryan, & Valverde, 2011; Park, Geum, & Park, 2015). All these factors influence consumer behaviour and are important in understanding how consumers perceive the dual quality of goods in the EU. As part of our research, the attitude of Slovak consumers towards dual quality in terms of some selected factors was examined.

Dual quality is a situation where a product is sold in the same or very similar packaging in different countries with different compositions or properties (Bartková, 2019; Novy, 2018). It is mostly associated with the countries of Central and Eastern Europe, whose inhabitants feel that they are imported goods of transnational brands of lower quality and consider such behaviour to be unfair. Cases with dual quality of goods began to be noticed by people in Slovakia immediately after the fall of communism (Čimová, 2017). Western products gradually began to penetrate the Eastern markets, and the people of the post-socialist countries expected an increase in living standards and the offer of quality 'Western' products. With the opening of the borders, the people of Eastern and Central Europe began to travel abroad, where they also bought products of brands they knew from home, and there were instances where they came across dual quality (Ichijo & Ranta, 2016; Pratt, 2007). This experience did not only concern the Slovak Republic; consumers in the eastern part of the EU began to complain that the quality of some products was lower in their country when compared with the same brand of the same manufacturer abroad (Klabusayova, 2018).

In connection with dual quality, tests were performed in several countries. An overview is presented in Figure 1. However, the methodology used differed, and therefore the results could not be compared and generalised. Since price

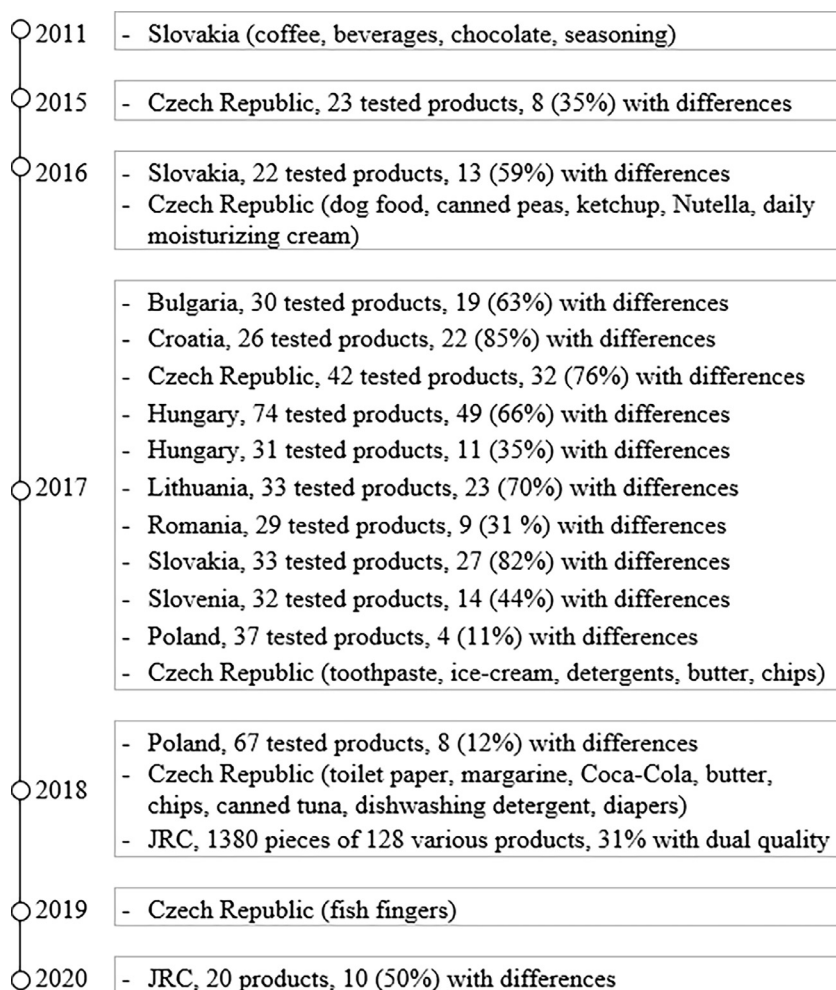


Figure 1 Review of conducted dual-quality tests in Central Europe. Source: Author collated

comparison was, mostly, not the primary goal of testing, and the methodology was not comparable; the conclusions, therefore, cannot be generalised (Závadský & Hiadlovský, 2020).

The first comparative test in the Slovak Republic was performed in 2011, and it showed that some foods of the same brand, purchased in Slovakia and abroad, did not have the same taste, composition, and even weight (Sudor, 2012). In 2015, the test in the Czech Republic revealed different quality for a third of the samples (Kořínek & Hovorka, 2015; University of Chemical Technology in Prague, 2015), and also differences in price (Brož, 2015). In 2016, another test performed in the Slovak Republic revealed 59% of products with differences between the Slovak Republic and abroad (Ministry of Agriculture and Rural Development of the Slovak Republic, 2017). Also, the test in the Czech Republic examined products and differences in composition or quality were discovered (dTest, 2023). In 2017, another test was performed in Slovakia and it also revealed differences in quality (Hammer, 2017; Markíza, 2017). In that year, other countries also examined products for dual quality: the Czech Republic (Ferebauer, 2017; Horáček, 2017; Leinert, 2017a, b; dTest, 2023), Hungary (Ministry of Foreign Affairs of the Slovak Republic, 2017), Poland (Brežnický, 2018; Forbes, 2019), Croatia, Romania, Bulgaria, Lithuania and Slovenia

(Niámh, 2017). The dTest magazine in the Czech Republic which examines products and especially tests the dual quality of products and provided various tests in years 2018 and 2019 and discovered dual quality (dTest, 2023).

Since each test was performed using a different methodology, it was not representative and the results were not comparable, the Joint Research Centre (JRC) of the European Commission conducted its own test in 2018 on a sample of 1380 pieces of 128 different products to unify the research methodology and design measures (Barbu, 2019; European Commission, 2019). Test results showed that there were differences in the composition of products packaged in the same or very similar packaging, but the geographical pattern was not confirmed (Joint Research Centre, 2019). In 2020, the JRC also conducted a sensory test. As a result, 20 branded products, each comprising samples collected in 5-10 EU member states, were included in the assessment performed by a panel of trained experts. In 10 out of the 20 food products evaluated, differences in the sensory properties among the national versions were noticeable.

Information about the results of comparative tests regarding dual quality appeared in the media. This information was often presented as tabloid reports about the scandalous practices of producers 'feeding' on the people of Central and Eastern Europe. However, the media often

omitted the view of the other side – the statements of manufacturers whose products have dual quality. Only some manufacturers or traders commented on the issue, others chose to ignore it completely.

Some manufacturers confirmed that they delivered the same products to different countries in the same packaging but with a different composition (Čimová, 2016; Poracký, 2018; Sívý, 2017). Several producers argued that varied taste preferences and consumer habits in individual countries result call for different composition of goods and therefore the dual quality. Admittedly, these different tastes and habits do exist (Domaňski & Bryła, 2013; May, 2013; Welz, 2012). Manufacturers can adapt their products to the tastes, requirements, or purchasing power of consumers and, at the same time, do not violate any European regulations (Sameková, 2016).

However, the argument about the different tastes of consumers often does not hold up in context. Consumers certainly do not expect artificial sweeteners and dyes and a smaller share of the basic raw material in domestic products compared to foreign ones (Horáček, 2017). Different tastes and habits can be satisfied with healthy options without using unhealthy ingredients (Wszoborowska, 2019). In addition, the products also passed sensory tests in some tests. When the members of the evaluation committee were only nationals of the given country, it is expected that the results of the sensory test would be in favour of the product from the given country. However, this was often not the case (Brož, 2015).

Some manufacturers and traders objected to the test results. Some others even pointed out that the subject of testing was the products of its private brands, the suppliers of which are different in each country, and therefore, it is not even possible to ensure that these products are the same. Some manufacturers stated that the recipe for the production of all products is the same and differences arise between individual batches due to the changed composition of the natural raw materials used in production.

Some manufacturers and distributors did not want to comment on the test results. A common problem with the issue of dual quality was that inspectors published the results of food quality tests before allowing producers to explain. In such cases, especially with international companies that did not have a representative in the respective country, companies could not react adequately and communicate with the customers (Koreň, 2019). There have also been cases when a product with a similar composition was described differently on the packaging, even though it was an identical product from the same plant with the same composition and sensory properties (Pokorná, 2018). In general, manufacturers were little involved in the dual quality dialogue.

However, the most important stakeholder in the case of dual quality is the consumer. Consumer research was conducted in the Czech Republic, where respondents said they were bothered by this practice (Klicnar, 2017), and in Poland, where most respondents did not have any personal experiences with dual quality, one third of the respondents believed it existed (UOKiK, 2018). In Slovakia, research on consumer attitudes to the issue of dual quality was lacking, which makes it impossible to create a comprehensive picture of the situation in Central Europe. None of the surveys

carried out explored whether there was a match between the products tested and the products where consumers perceived dual quality. Our research aims to make this comparison.

Methodology

The main aim of this research paper is to explore the relationship between the nature of products tested to reveal dual quality and customers' experiences, and to draw guidelines for individual organisations towards future solutions to the problem. This main aim is divided into four partial research goals:

1. To identify products affected by the dual quality issue according to the experiences of consumers.
2. To identify the products for which consumers consider the problem of dual quality to be the most serious.
3. To compare the focus and results of dual quality tests performed by officially recognised organisations and the experiences of consumers, to identify inconsistencies.
4. To formulate guidelines for the solution of dual quality problems that would be most desired by consumers.

To achieve these aims, the research team used secondary data on known tests of dual quality in the EU and compared it with findings from a primary survey conducted specifically for this purpose. The data used in this paper were provided by the first nationwide survey conducted throughout a Central European country - the Slovak Republic - on the dual quality issue targeting consumers. This state was chosen for the research since it was one of the countries where the existence of dual quality had already been proven. The survey explored the opinions of consumers and provided evidence on what products the consumers notice as unequal. The survey was part of a project in which both academic experts and experts from the private sector collaborated on discovering the real needs of different customers in the EU. Respondents of the survey were selected randomly throughout the country to ensure the representativeness of the sample. They were contacted randomly through various consumer organisations located in the Slovak Republic and by volunteers in shopping areas. Random sampling was ensured by using the simple random sampling method as a type of probability sampling in which a subset of participants from a population is randomly selected. The population was defined by the existing Slovak consumers. Contacts were selected randomly from databases of various consumer organisations using the random number method. This way, every consumer was assigned a number. The random number function (RAND) in Microsoft Excel was applied to generate random numbers and thus select the respondents. This way, each member of the population had an equal chance of being selected. A questionnaire was used to collect data which is available, upon request, from the authors.

A total of 987 consumers participated in this survey. All participants involved were the main buyers of daily consumption products for their households; therefore, women represented 66.15% of the consumers in the sample file. The representativeness of the created sample of Slovak consumers was verified. Since only the main buyers in their

Table 1 Structure of base file and sample file.

The age group of customers (in years)	Base file		Sample file	
	No. of people	Percentage	No. of people	Percentage
19–25	406 044	9.26%	94	9.52%
26–45	1 681 150	38.35%	379	38.40%
46–65	1 448 396	33.04%	316	32.2%
Over 66	848 019	19.35%	198	20.06%
Total	4 383 608	100.00%	987	100.00%

Source. Own elaboration based on data from a survey and the Statistical Office of the Slovak Republic.

households were included in the survey, the sample is not representative by gender of Slovak citizens. Therefore, the sample was put together so that it would be representative with the age of customers as the main criterion. The base file at the time of research consisted of all people in the Slovak Republic between the ages of 19 to 80. Table 1 provides the data on both the base file and the sample file. To verify the representativeness of the sample according to population structure, the Chi-square test was used. The test was performed at a significance level of 95 % using the following formula (1) for statistic testing in SPSS software:

$$\chi^2 = \sum_{j=1}^r \frac{(n_j - m_j)^2}{m_j} \approx \chi_{(r-1)}^2 \quad (1)$$

where χ^2 is the Pearson statistics, r is a line, n is the overall frequency in the base file, and m is the measured frequency. The Chi-square value proved that the created sample file is a representative sample of the base file.

Spearman's rank correlation and basic correlation coefficients were used to identify relationships with the potential of high impact. Both these methods were necessary to use, since the data used in this research were of different nature. Spearman's rank correlation was applied to measure the strength and direction of association between two-ranked variables and Pearson correlation coefficients were calculated to measure linear correlation between two variables. Pearson correlation coefficients were calculated according to the formula previously used by various authors (Veselovská, 2022; Závadská & Závadský, 2018; Závadský, Malá, Benčíková, Sedláčiková, & Šatanová, 2020;), as described in formula 2:

$$r = r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}} \quad (2)$$

where:

x_i, y_i are defined as a value of i -element belonging to dataset $\{x_1, \dots, x_n\}$,
 $\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$ is the sample mean stands analogously for \bar{y} .

Spearman's rank correlation was calculated according to formula 3, where the value n is the number of customers and d represents the difference in the ranks:

$$R_s = 1 - \left(\frac{6 \times \sum d^2}{n^3 - n} \right) \quad (3)$$

A binomial test was used to statistically confirm an important finding. This test used sample data to determine if the consumer proportion of one level in a binary (or dichotomous) variable equals a specific claimed value, which in this case, if the value is dominant. The test was performed at a significance level of 95% ($\alpha = 0.05$). The test statistic for the needs of the binomial test was calculated based on formula 3:

$$P(X) = \frac{n!}{(n-X)!X!} \times p^X \times q^{n-X} \quad (4)$$

where n represents the number of all consumers in the sample set, X represents the expected result, and p is the probability of occurrence of the expected result, which in this case was the selection of one of the types of products where consumers had observed dual quality, taking into account the size of the research sample, that is, this is an assumption of its dominant occurrence, q represents the probability of the occurrence of other options - other types of products.

Results and discussion

The main aim and partial aims focused this research on identifying the products in which the consumers noted dual quality and, consequently, in discovering whether officially performed tests managed to correspondingly target the correct product types to serve as relevant guidelines for elaborating policies. By connecting the two sets of information, a clear image of the reality of the dual quality issue can be created. According to the results of the research, up to 89% of consumers have heard about the problem of dual quality. Research also shows that this problem is important for up to 75% of consumers. Furthermore, up to 65% of Slovak consumers perceived the problem of dual quality mainly as an ethical issue. However, most of them believe that the nature of this problem is economic. These findings point towards the importance of dual quality issues for all segments of consumers in one of the post-communist countries.

The first partial goal of the survey was to identify products affected by the dual-quality issue according to the experiences of consumers. It was discovered that consumers have most often heard or personally experienced dual quality in relation to meat and meat products, milk and milk products, sweets, detergents, and cosmetics. Figure 2 provides a closer look at this data. Consumers also mentioned other products that may be related to dual-quality issues such as cars and electronics, pizza as a semi-finished product, dog pellets, pasta, medicines, sanitary napkins, and

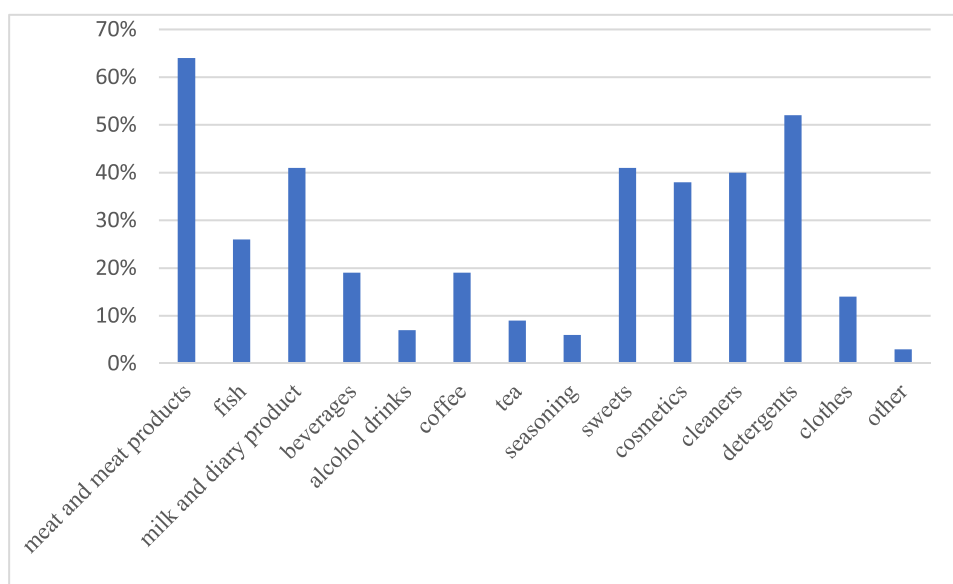


Figure 2 Products affected by the dual-quality issue that consumers have heard about. Source: Author collated

other feminine hygiene products as some dual-quality goods, but these were not considered in this research, as they are not daily consumer goods that this research was primarily focused on.

Binomial test was used to statistically confirm that consumers are more familiar with dual quality of food products than any other types of daily used products. The binomial test indicated that the proportion of people who were familiar with dual quality of food products of 0.8257 was higher than the expected 0.50 (Table 2). This finding proves the importance of testing these types of products to a greater extent on national levels to achieve recognisable results that can serve as the foundation for defining policies.

Further findings were obtained by analysing the survey results. Another issue the research focused on was discovering where consumers learned about dual quality. This is an important factor that directly contributes to understanding of consumers' perceptions of dual quality and provides a context for the partial objective designed to identify the products for which consumers consider the problem of dual quality to be the most serious. The seriousness of the problem can be considered to be higher if consumers have a personal experience, in comparison to just hearing about the problem in the media. In the process of identifying the products for which consumers consider the problem of dual quality to be the most serious, it was discovered that as many as 72% of consumers have heard about the problem of dual quality from the media, 43% of consumers have personal experience with this practice, and 30% have an acquaintance

with personal experience of this issue. One person stated that he had heard about this practice directly from an employee of a company that produced dual-quality goods.

Even though the findings presented in Figure 2 prove that consumers have heard of the dual-quality issue, this information may not be based on relevant data and could potentially include hoaxes. Therefore, it is crucial to discover what the personal experiences of consumers are. According to the survey, consumers have the most personal experience with dual quality in the case of meat and meat products, detergents, sweets, milk and dairy products, and cosmetics and cleaning products. Thus, the order of the products did not change compared to Figure 3, but consumers had personal experience to a much lesser extent, compared to the level of information on dual quality in general. In addition to the products listed in Figure 2, consumers had personal experience with cars and electronics, pasta, medicines, and feminine hygiene products.

As many as 84% of consumers stated that this practice bothers them, 12% could not assess it, and 4% did not care about it or were not interested. Consumers consider dual quality to be the most serious problem in the case of meat and milk and meat products. This may be so because these products are consumed on a regular basis. Furthermore, they also perceive this problem as serious in the case of detergents, fish, sweets, and cosmetics. These data are illustrated in more detail in Figure 4. As observed from the presented data, people have more experiences with dual quality in the case of non-food products; however, they are

Table 2 Binomial test—products.

Binomial test		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Food	Group 1	1	812	,83	,50	<,001
	Group 2	0	172	,17		
	Total		987	1,00		

Source: Author collated

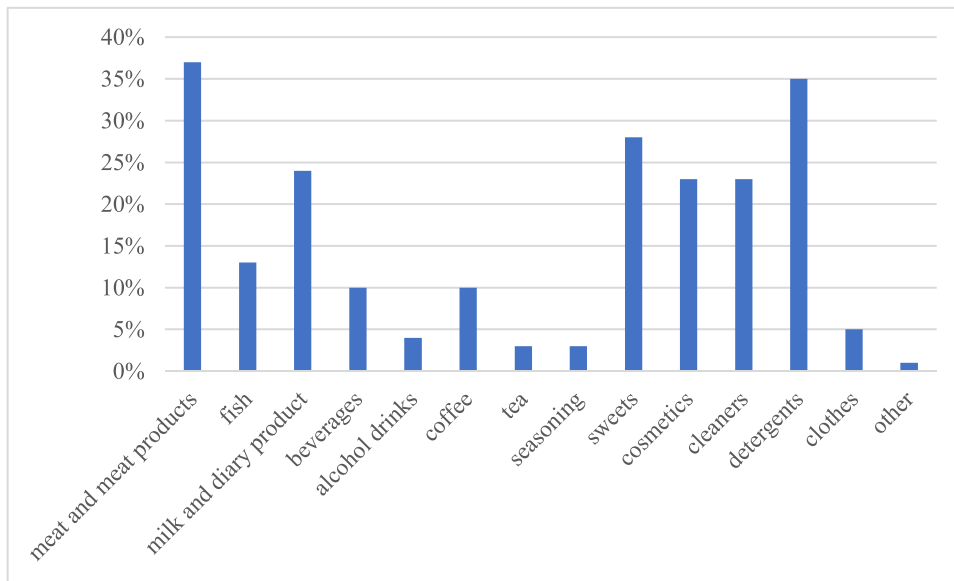


Figure 3 Dual-quality products with which consumers have personal experience. Source: Author collated

more concerned about dual quality in the case of foodstuffs. This inconsistency is most likely caused by the fact that non-food products have a longer shelf-life, and were imported to Slovakia from abroad, and people have more time to use them and to compare them. However, foodstuff directly influences the health of people; therefore, they care more about quality and dual quality of food.

The findings presented so far consider the entire adult population of the selected country. However, there may exist differences in opinions and experiences of different segments of consumers. Therefore, the issue of dual quality was examined in terms of the age of consumers, as it greatly influences consumer behaviour, among other factors (cultural, social, and psychological). Depending on their age, people buy different products. Gradual ageing changes the individual’s view of food, clothing, furniture, recreation,

housing, and so on. It was assumed that the perception of dual quality changes depending on the age of the consumers. Furthermore, age was selected as the criterion, since the research sample is a representative example of the base file according to this criterion. As the research findings show, the importance of dual quality for different age groups depended on the type of product. Figure 5 provides information on the products for which respondents from individual age groups consider the dual-quality problem to be the most serious.

Each of the age groups emphasises the quality of food, which is understandable, as we consume food products every day and spend a large part of our income on them. Furthermore, the binomial test was used to statistically confirm this significant finding in each age segment. Tables 3-6 show the tests results. Respondents in the retirement age group have

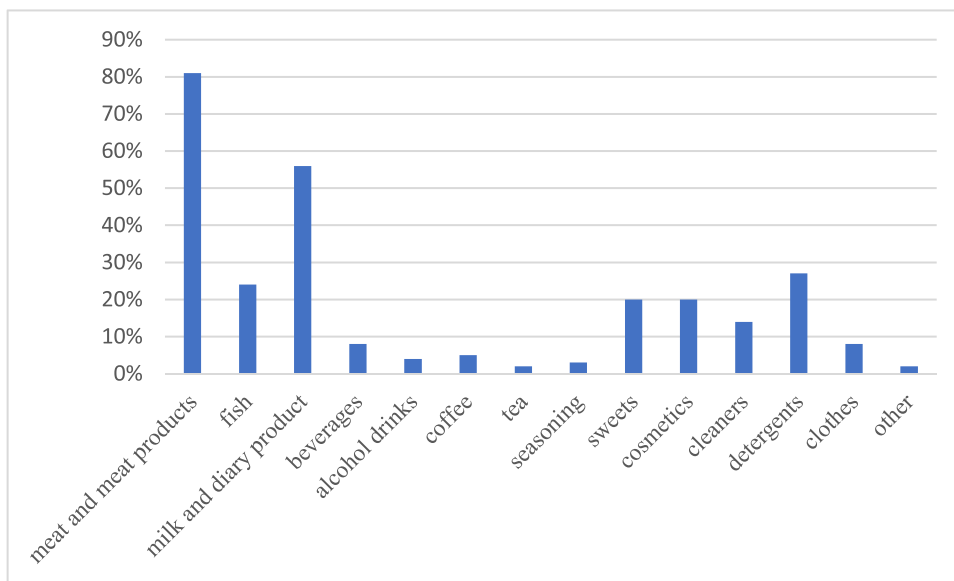


Figure 4 Products for which consumers consider the problem of dual quality to be the most serious. Source: Author collated

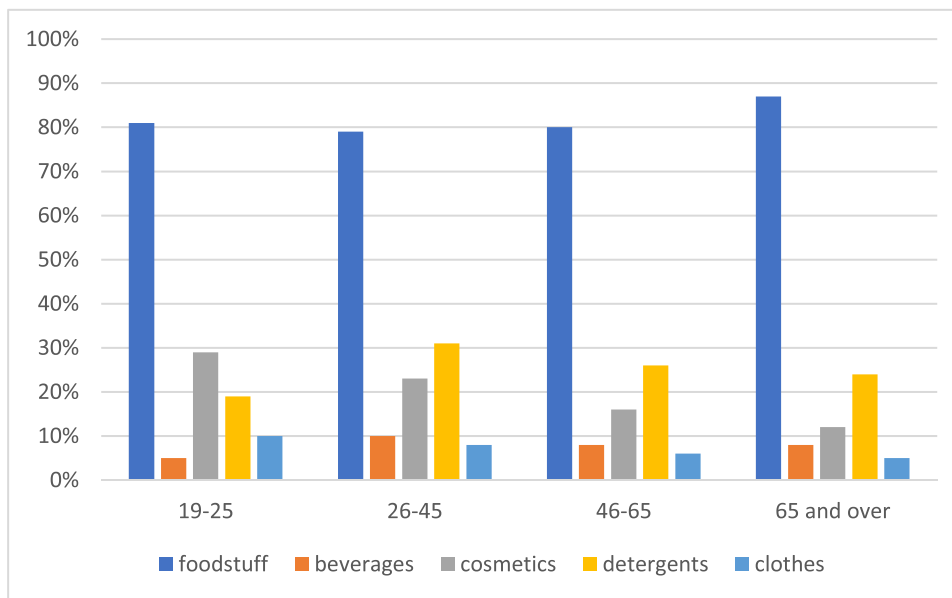


Figure 5 Products for which consumers consider the problem of dual quality to be the most serious according to the age groups. Source: Author collated

Table 3 Binomial test—importance of quality in age group 19–25.

Binomial test		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
quality_1 st _age	Group 1	1	187	,82	,50	<,001
	Group 2	0	17240	,17		
	Total		227	1,00		

Source: Author collated

Table 4 Binomial test—importance of quality in age group 26–45.

Binomial test		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
quality_2 nd _age	Group 1	1	76	,19	,50	<,001
	Group 2	0	329	,81		
	Total		395	1,00		

Source: Author collated

Table 5 Binomial test—importance of quality in age group 46–65.

Binomial test		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
quality_3 rd _age	Group 1	1	212	,76	,50	<,001
	Group 2	0	66	,24		
	Total		278	1,00		

Source: Author collated

Table 6 Binomial test—importance of quality in age group over 65.

Binomial test		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
quality_4 th _age	Group 1	1	65	,76	,50	<,001
	Group 2	0	20	,24		
	Total		85	1,00		

Source: Author collated

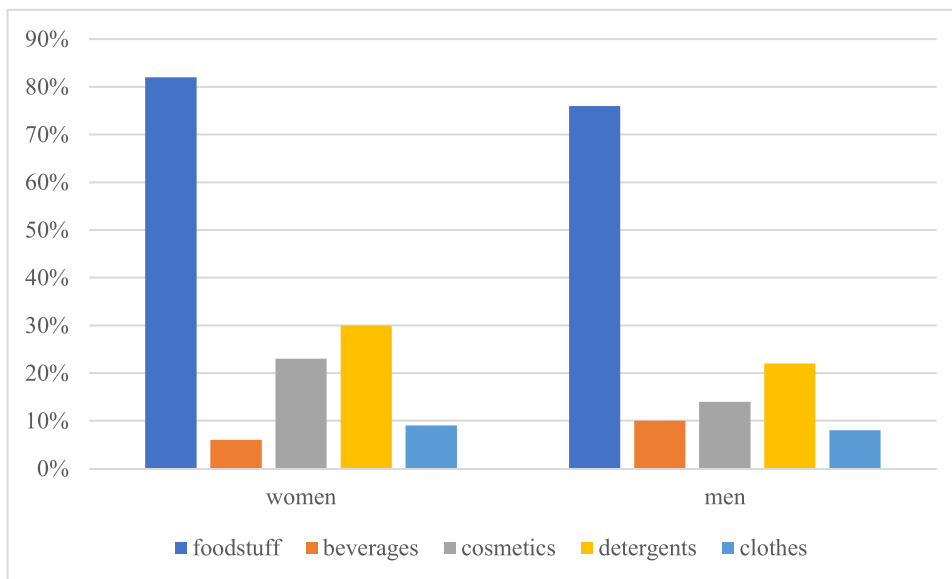


Figure 6 Products for which consumers consider the problem of dual quality to be the most serious according to gender. *Source:* Author collated

a reduced income and use it mainly in food and medicine, so they consider this issue to be the most important in food products, more significantly than by any other age category. On the contrary, the lowest percentage in this group perceive dual quality as important in cosmetic products and clothing, much less than by other age groups. This finding could also be explained by the fact that, generally, people of retirement age may no longer prefer to invest in new clothes. Also, because of lowered economic standards, it is understandable that they do not invest in cosmetics and hence do not address the issue of dual quality in cosmetics. And typically, this age group may no longer even experiment with new cosmetic products, as they are likely to be loyal to their select brands.

As can be seen from the data in Figure 5, the dual quality in detergents is mostly addressed by middle-aged respondents who have established families and children. Their priority is to take care of the offspring and the household (cleaning, cooking, washing, and ironing). On the contrary, appearance and body cult are seen as important for young people, and so they place the greatest emphasis on quality cosmetics and clothing.

Even though women are more represented in the sample file of this research, it would still be beneficial to investigate possible differences in consumer opinions, based on this

criterion. Therefore, as part of the research, the analysis was focused on structuring the results in terms of the gender of consumers. It was assumed that women would perceive the issue of dual quality more intensely than men. A detailed analysis of research results in terms of consumer gender largely mirrored the research results of the whole set; but, in general, it was discovered that the issue of dual quality affects women more, since they pay more attention to it and adjust their consumer behaviour accordingly. Figure 6 shows the food products for which these consumers consider the dual-quality issue to be most important, depending on their gender.

The order of importance of products in the context of dual quality is the same for all consumers, regardless of their gender. Once again, however, women prove to be more interested, as they perceive the importance of dual quality in food, cosmetics, and detergents, that is, basic household products, more intensely. Men, on the other hand, perceive this problem more than women, for soft drinks. Spearman’s rank correlation also proved that the relationship between the perceptions of dual quality of these products is stronger for female consumers than male consumers. Table 7 shows the corresponding data.

Income levels also influence consumer behaviour. Consumers with different incomes buy different products and focus on different criteria when shopping. Consumer

Table 7 Spearman’s rank correlation.

			Gender	Product type
Spearman’s rho	Gender	Correlation Coefficient	1	0.662
		Sig. (2-tailed)	.	0.02
		N	987	987
	Product type	Correlation Coefficient	0.662	1
		Sig. (2-tailed)	0.02	.
		N	987	987

Source. Own elaboration.

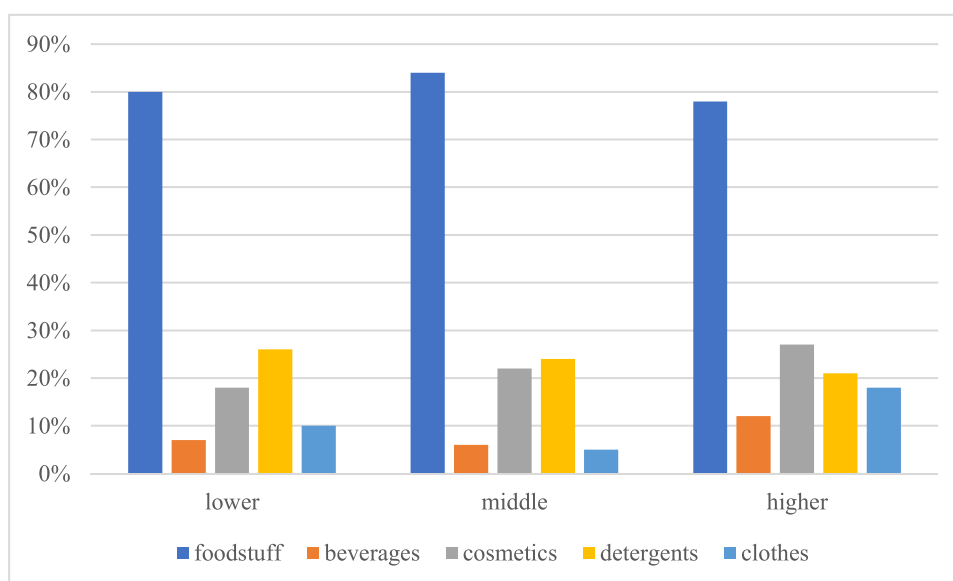


Figure 7 Products for which consumers consider the problem of dual quality to be the most serious according to the level of income. *Source:* Author collated

behaviour was examined in terms of household income in the context of dual quality. Consumers were divided into three groups according to the monthly income of their households: the low-income group consisted of consumers with an income of €400-1,000, the middle-income group of consumers with an income of €1,001-1,600, and the high-income group with an income of €1,601.

Figure 7 shows the goods for which consumers consider the dual-quality problem to be the most important, depending on the level of income. Based on the results presented here, it can be stated that for low- and medium-income consumers, the problem of dual quality is most serious in food and detergents. These are basic goods that they buy for the household, and so they give them the highest priority. For low-income consumers, it is still possible to observe a penchant for clothing. It can be estimated that this is because the consumer with a low income does not buy clothes very often and, would hope that the clothes will last for as long as possible. However, the differences between income groups of consumers are not statistically significant according to Spearman's rank correlation tests, since none of the calculated coefficients were higher than 0.216. Therefore, it can be concluded that other consumer behaviour factors are more relevant in situations when dual quality of products are involved. It can be observed that people with higher income show a preference for cosmetics, and there is also a comparative increase in the importance of clothing. It can be assumed that this is because they buy them at higher prices from more prestigious brands and thus expect from them a quality corresponding to a higher price. At the same time, it should be noted that, in addition to food, detergents are also more important for people with lower incomes.

Manufacturers who produce dual-quality products have various reasons to adopt such strategies. Their end goal is not to provide different compositions and quality for other countries, but rather to adopt cost-saving strategies using lower-quality ingredients that can be bought cheaper. However, since the consumers are now more aware of this issue,

as our findings have proved, the manufacturers defend themselves by stating more complex reasons for adopting the dual-quality strategy such as the availability of resources, different taste preferences, and habits of consumers from different backgrounds. As the findings in this study prove, this issue is especially problematic for food products where consumers are most inconvenienced by dual quality.

Conclusion

In recent years, Central European consumers have become more demanding of quality. According to several surveys by GfK Slovakia, most respondents state the quality and freshness of food as a decisive preference when buying food products (GfK, 2008; GfK, 2015). And although price is still important for consumers when shopping, the emphasis on quality is rising (GfK, 2017). In 2016, the Post Bank analysed the shopping behaviour of the population of the Slovak Republic (Kušnírová, 2016). The analysis showed that Slovak consumers are interested in quality food, and in the western regions of the Slovak Republic, are willing to pay a higher price for such food. This view applies not only to the purchase of food, but also when buying other products, for example, sports shoes and supplies. From these results, it can be concluded that Slovak consumers will no longer be satisfied with low quality and will be concerned by the dual quality of products, especially if they receive goods of a lower quality. Therefore, organisations should implement business strategies oriented on quality (Fidlerová, Stareček, Vraňaková, Bulut, & Keaney, 2022).

This research focused on exploring the relationship between the nature of products tested to reveal dual quality and customers' experiences. The objective was to discover whether the officially recognised test of dual quality managed to create an accurate image of reality by selecting the correct products for conducting the tests. However, reality proved to be more complex, and more evidence is needed to

fully understand the relationship between officially conducted tests and consumers' experiences. Therefore, this research provides a significant contribution to the existing pool of knowledge. However, the results need to be considered in the context of other studies conducted on the issue of dual quality.

The Slovak Republic was selected as the country of interest since it is one of the post-communist bloc countries. It was chosen because, to the best of our knowledge, there was no research on consumer attitudes towards dual quality in this country. Several comparative tests were carried out, and dual quality became the agenda of several Slovak politicians, but the opinions of consumers were not investigated. Similarly, even abroad, there are only comparative product tests examining the existence of dual quality, and research on consumer attitudes are absent. Consumers' view of dual quality was investigated only in the Czech Republic (Klicnar, 2017; Mth, 2016) and Poland (UOKiK, 2018). In Poland, only consumers' awareness of the existence of dual quality was investigated, not their attitudes towards this issue.

In line with the aims of this research, it was discovered that Slovak consumers are most bothered by dual quality in the case of food products. Due to gender, women might experience life differently, leading to differences in cognition, affect, and behaviour (Messner, 2017). In the case of dual quality in the Slovak Republic, women were more concerned about the issue than men. This result is in accordance with the knowledge that women are generally considered to be those who purchase and prepare food, and purchase other household goods (Carlson, Miller, & Sassler, 2018; Crane, Tangney, French, Wang, & Appelhans, 2019; Flaggs, Sen, Kilgore, & Locher, 2014). Furthermore, it was discovered that consumers are most concerned about dual quality in the case of food products. Most of the officially performed tests included various categories of products enabling comparisons. As can be seen from the overview of testing products for dual quality in Europe (Figure 1), dual quality in the case of food has indeed been confirmed. The pursuit of a healthy lifestyle is increasingly important for consumers, which is primarily related to healthy foods. Using different, cheaper ingredients can be a reason for consumer dissatisfaction. Moreover, consumers perceive dual quality as an ethical issue. While the majority of Slovak consumers perceive dual quality as an ethical problem, Czech consumers also have a similar opinion and consider the application of dual quality by producers to be unfair behaviour towards consumers and it bothers them (Klicnar, 2017; Mth, 2016).

It is therefore very important for companies to properly communicate this issue to their consumers. The majority of respondents of the survey stated that dual quality should not exist, and manufacturers should offer uniform products throughout all EU markets. Consumers do not exclude different products tailored to the specifics of each country; they only require them to be clearly labelled. It is food that is an important element through which national identity can be promoted in everyday consumption. As stated by the producers, it is sometimes legitimate to adapt products to local ingredients and national tastes. Traditional dishes play an important role in the authentication of ethnic and national culture (Bardone & Spalvena, 2019; Nair & Maram, 2014; Parasecoli, 2017). It is therefore legitimate to adapt products to the specific tastes and customs of each country, but

they should not be packed in the same or at first sight, very similar packaging. There are a lot of attributes considered while choosing a product; however, quality is the most important factor for consumers when buying products, especially food, and it should be unified in the EU (Petrescu, Vermeir, Burny, & Petrescu-Mag, 2022).

Manufacturers should turn this in their favour and differentiate in the packaging of their products. We therefore propose, for example the inscription 'Made for ... (Slovakia)'. Another designation can be '... (Slovak) recipe' or the title 'Slovak' above the main product name. This label evokes a sense of authenticity in the consumer and encourages conservative and traditionalist consumers to buy. Also, the results of prior research show that, about 45% of people buy products by country of origin (Petrescu-Mag & Petrescu, 2017). So, such a local designation can lead to an increase in the company's revenue (Foltys, Dębicka-Ozorkiewicz, Królczyk, & Hladlovský, 2015; Sedliacikova, Satanova, Zavadsky, & Zavadská, 2015; Zavadská, Syč, Korenková, & Zavadský, 2017). When using local raw materials (or raw materials allowed in a given country), if the products differ in purchase price or simplification in the processing, this should also reflect in the selling price of the goods.

Opportunities to conclude from the results of the few officially recognised tests seem vast, at first glance. However, these tests did not consider the opinions of consumers in the Slovak Republic thereby limiting their scope. This research aimed to address the existing gap by providing a different perspective on the issue. The main focus of the comparison was on product categories where dual quality could be proven, since this is the one aspect that can be documented by both the officially recognised tests and experiences of consumers covered in this research. Furthermore, this research also added to the work on this issue by providing opinions of consumers on other aspects of dual quality, such as on the nature of this problem and sources of information on dual quality.

As research proves, the dual quality of products is a matter that involves several stakeholders. This problem was especially highlighted by politicians (in the Slovak Republic and the Czech Republic) who were involved in this issue, took the opportunity and built their agenda on it, and encouraged a solution to the issue of dual quality through the European Commission. The European Commission did not originally wish to address this issue, according to official statements at the time. Manufacturers did not seem to break any rules, as they indicate the composition of the products on the packaging. Later, however—under pressure from politicians in Central and Eastern Europe—the EU acknowledged that such behaviour was not fair and took steps to eliminate dual quality. The Joint Research Centre developed a uniform methodology for product testing, and the European Commission adopted a directive that identifies dual quality as an unfair practice and provides for sanctions for its use. National parliaments are now obliged to incorporate the prepared methodology and measures resulting from the directive into their national legislation.

Comparative tests conducted at the national level have shown that dual quality exists. However, the individual tests had different methodologies and hence the results were not comparable. The JRC's unified test also confirmed the existence of dual quality, although the geographical pattern

that products are worse in the eastern countries of the EU than in the western ones was not confirmed. Most of the tests focused on food, and only marginally on non-food goods. Consumers' views on the issue of dual quality were not given much importance.

Dual quality bothers Slovak consumers mostly in the case of food. However, they have more personal experience with dual quality in the case of non-food goods, especially detergents. The European Commission elaborated a framework for uniform product testing at the national level. The list of goods suitable for testing will also include products whose dual quality was reported by consumers. As a result, non-food products will also get more frequently into comparative tests.

However, this methodology does not eliminate dual quality completely. Sometimes, there is a reason for dual quality, for example, local tastes and preferences, customs, or production conditions of the country. Consumers do not even require dual quality to be eliminated, but they do require that such products be properly labelled as having been made specifically for their country. Manufacturers should also have more opportunity to explain the use of dual quality in order to explain and defend their practice.

Acknowledgement

This contribution was supported by Project VEGA 1/0134/22, titled 'Changes in consumer behavior due to the COVID-19 pandemic with intent to predict its development'.

References

- Andrejkovičová, N. (2017, October 3). Druhý test potravín na Slovensku a v Rakúsku: Takmer polovica výrobkov má rozdiely v kvalite. <https://www.startitup.sk/druhy-test-potravin-na-slovensku-v-rakusku-takmer-polovica-vyrobkov-ma-rozdiely-v-kvalite/>
- Annarita, C., Fabio, C., & Marcello, S. (2023). Dual quality and limits to international adaptation of product quality: Development of a conceptual framework and research agenda. *Total Quality Management & Business Excellence* 34 (9-10), 1243-1256. <https://doi.org/10.1080/14783363.2022.2158804>.
- Baimenov, A., & Liebert, S. (2019). Governance in the post-soviet era: Challenges and opportunities. *Public Administration Review* 79 (2). <https://doi.org/10.1111/puar.13014> 281-285.
- Barbu, P. (2019, June 24). EU dual food quality study: Same packaging, different composition for nearly a third of products. <http://business-review.eu/news/eu-dual-food-quality-study-same-packaging-different-composition-for-nearly-a-third-of-products-202550>
- Bardone, E., & Spalvena, A. (2019). European Union food quality schemes and the transformation of traditional foods into European products in Latvia and Estonia. *Appetite* 135 (4), 43-53. <https://doi.org/10.1016/j.appet.2018.12.029>.
- Bartková, L. (2019). How do consumers perceive the dual quality of goods and its economic aspects in the European Union? An empirical study. *Problems and Perspectives in Management* 17 (3), 382-394. [https://doi.org/10.21511/ppm.17\(3\).2019.31](https://doi.org/10.21511/ppm.17(3).2019.31).
- Benešová, B., Švejsová, Z., & Kubová, A. (2017, July 11). Veľké srovnání potravín za hranicami a v českých obchodech: z 21 výrobků se zhodovali jen tři. https://www.irozhlas.cz/zpravy-domov/velke-srovnani-kvality-potravin-z-21-vyrobyku-se-shodovaly-jen-tri-1707111548_ph
- Bradford, D., Courtemanche, C., Heutel, G., Mc Alvanah, P., & Ruhm, C. (2017). Time preferences and consumer behavior. *Journal of Risk and Uncertainty* 55 (2-3), 119-145. <https://doi.org/10.1007/s11166-018-9272-8>.
- Brežnický, J. (2018, October 9). Different quality of food in Poland and Germany. UOKiK presented the results of the research. <https://www.money.pl/gospodarka/wiadomosci/artikul/rozna-jakosc-zywnosci-w-polsce-i-w-niemczech,6,0,2418182.html>
- Brož, J. (2015, June 1). Srovnání potravín v ČR a Německu: stejný obal, stejná cena, jiné jídlo. https://ekonomika.idnes.cz/stejne-potraviny-v-cesku-a-nemecku-se-lisi-ukazal-test-pp4-/test.aspx?c=A150701_183949_test_ozr
- Carlson, D.L., Miller, A.J., & Sassler, S. (2018). Stalled for whom? Change in the division of particular housework tasks and their consequences for middle- to low-income couples. *Socius* 4, 1-17. <https://doi.org/10.1177/2378023118765867>.
- Chen, J.X., Liang, L., Yao, D.Q., & Sun, S.N. (2017). Price and quality decisions in dual-channel supply chains. *European Journal of Operational Research* 259 (3), 935-948. <https://doi.org/10.1016/j.ejor.2016.11.016>.
- Crane, M.M., Tangney, C.C., French, S.A., Wang, Y., & Appelhans, B.M. (2019). Gender comparison of the diet quality and sources of food purchases made by urban primary household food purchasers. *Journal of Nutrition Education and Behavior* 51 (2), 199-204. <https://doi.org/10.1016/j.jneb.2018.07.016>.
- Čimová, D. (2016, August 2). PepsiCo vrátila cukor do koly, Coca-Cola ponúkne Fantu a Sprite bez cukru. <https://e.dennikn.sk/526846/pepsico-vratila-cukor-do-coly-coca-cola-ponukne-fantu-a-sprite-bez-cukru/>
- Čimová, D. (2017, March 17). Na Slovensku sme výrobkom ponechali názvy, ale character sme im zmenili. <https://e.dennikn.sk/707216/na-slovensku-sme-vyrobkom-ponechali-nazvy-ale-character-sme-im-zmenili/>
- Domański, T., & Bryła, P. (2013). *Marketing Produktów Regionalnych na Europejskim Rynkużywności*. Lodz University Press, Lodz.
- dTest. (2023). Stop dvojí kvalite. <https://www.dtest.sk/kampane/dvoji-kvalita/zjisteni-dtestu>
- European Commission. (2019, June 24). Dual food quality: Questions and answers. https://europa.eu/rapid/press-release_QANDA-19-3333_en.htm
- Ferebauer, V. (2017, July 11). Stejný obal, jiný obsah. Většina výrobků se liší, ukázal průzkum. https://zpravy.idnes.cz/kvalita-potravin-srovnani-jurecka-dtz-/domaci.aspx?c=A170711_103807_domaci_jj
- Fidlerová, H., Stareček, A., Vraňaková, N., Bulut, C., & Keaney, M. (2022). Sustainable entrepreneurship for business opportunity recognition: Analysis of an awareness questionnaire among organisations. *Energies* 15 (3), 1-15. <https://doi.org/10.3390/en15030849>.
- Flagg, L.A., Sen, B., Kilgore, M., & Locher, J.L. (2014). The influence of gender, age, education and household size on meal preparation and food shopping responsibilities. *Public Health Nutrition* 17 (9), 2061-2070. <https://doi.org/10.1017/S1368980013002267>.
- Foltys, J., Dębicka-Ozorkiewicz, G., Królczyk, J.B., & Hiadlovský, V. (2015). Financing craft enterprises associated in the Polish craft association. *E+M Ekonomie a Management* 18 (4), 166-183. <https://doi.org/10.15240/tul/001/2015-4-012>.
- Forbes. (2019, October 9). Poles buy worse quality of food than Germany. UOKiK has no doubts. <https://www.forbes.pl/handel/polacy-kupuja-gorsze-jedzenie-niz-niemcy-badanie-uokik/p2n9mgg>
- Gallarza, M., Saura, I.G., & Arteaga, F. (2020). The quality-value-satisfaction-loyalty chain: Relationships and impacts. *Tourism Review* 68 (1), 3-20. <https://doi.org/10.1108/16605371311310048>.
- GfK. (2008, April 8). Slováci nakupujú potraviny podľa kvality, cena je druhoradá. <https://ekonomika.sme.sk/c/3816458/slovaci-nakupuju-potraviny-podla-kvality-cena-je-druhorada.html>
- GfK. (2015, August 17). Pri výbere obchodného reťazca je najdôležitejšia čerstvosť, odhalil prieskum. <https://strategie>

- hnonline.sk/tlacove-spravy/785816-pri-vybere-obchodneho-retazca-je-najdolezitejsia-cerstvost-odhalil-prieskum
- GfK. (2017, March 13). Tretina ľudí nakupuje podľa letákov. <https://instoreslovakia.sk/2017/03/gfk-tretina-ludi-nakupuje-podla-letakov/>
- Hammer, J. (2017, October 8). Slováci zistili u poloviny potravín výrazné rozdiely v kvalite. https://www.idnes.cz/ekonomika/test-a-spotrebitei/dvoji-kvalita-potravin-test-vyrobyky-rozdily-slovensko-rakousko.A171002_152206_test_hm1#space-a
- Horáček, F. (2017, October 12). Další šížené potraviny. Sýrována hračka, jablko místo pomeranče. https://www.idnes.cz/ekonomika/test-a-spotrebitei/dvoji-kvalita-potravin-test-srovnani-zemedelstvi.A171012_120331_test_fih
- Huang, C.-C., Lu, L.-C., You, C.-S., & Yen, S.-W. (2012). Materialism, and selected demographics on consumer ethics: An empirical study in China. *Ethics & Behavior* 22 (4), 315-331. <https://doi.org/10.1080/10508422.2012.677627>.
- Ichijo, A., & Ranta, R. (2016). *Food, national identity and nationalism: From everyday to global politics*. Palgrave Macmillan, Hampshire.
- Joint Research Centre. (2019). Results of an EU wide comparison of quality related characteristics of food products. https://publications.jrc.ec.europa.eu/repository/bitstream/JRC117088/eur29778en_results_of_an_eu_wide_comparison_of_quality_related_characteristics_of_food_products.pdf
- Klabusayova, N. (2018). Consumer in the European Union and dual food quality. In: *Proceedings of the 4TH international conference on European integration*, pp. 712-719.
- Klicnar, F. (2017, March 16). Pro nadnárodní firmy jsme druhořadí spotřebitelé, myslívětšina Čechů. https://www.idnes.cz/zpravy/domaci/pruzkum-stem-spotrebitele-potravin-cesko-zahranici.A170316_142334_domaci_fka
- Koreň, M. (2019, August 7). Problém s rozdielnym zložením potravín existuje, no nehovorí nič o ich kvalite. <https://euractiv.sk/section/ekonomika-a-euro/news/problem-s-rozdielnym-zlozenim-potravin-existuje-no-nehovori-nic-o-ich-kvalite/>
- Kořínek, D., & Hovorka, J. (2015, July 1). Test potravín: Stejně značky mají jiné složení než v Německu. <https://zpravy.aktualne.cz/ekonomika/test-potravin-stejne-znacky-maji-jine-slozeni-nez-v-nemecku/r~021f2be81f2911e5b1d8002590604f2e/>
- Koudelka, J. (2018). *Consumers and marketing*. C. H. Beck, Praha.
- Kuklová, J. (2017, February 24). Tolerujeme rozdielnú kvalitu. Prečo je to tak? <http://www.retailmagazin.sk/produkt/potravinarsky-sortiment/1995-tolerujeme-rozdielnu-kvalitu-preco-je-to-tak>
- Kušnířová, M. (2016, April 1). Ľudia chcú kvalitu. Kto sa neprispôsobí, bude mať problémy. <https://ekonomika.sme.sk/c/20128794/ludia-chcu-kvalitu-kto-sa-nepripisposobi-bude-mat-problemy.html>
- Lacénová, O. (2018, February 22). Koniec dvojitej kvality potravín. Známa pizza je na Slovensku rovnaká ako v Rakúsku. <https://finweb.hnonline.sk/zahranicna-ekonomika/1699391-oetker-zmenil-pizzu-nasa-je-ako-rakuska>
- Leinert, D. (2017a, June 18). Němcimají lepší zboží, dokazují první data z velké průzkumu kvality. https://www.idnes.cz/zpravy/domaci/kvalita-zbozi-srovnani-cesko-nemecko.A170710_212623_domaci_hro
- Leinert, D. (2017b, October 12). Ministerstvo znovu testovalo potraviny, tentokrát selhal kečup. https://www.idnes.cz/ekonomika/domaci/mf-dnes-test-dvoji-kvalita-potravin-kecup-detska-vyziva.A171011_201929_ekonomika_pmk
- Lozano, M.R., & Padilla, R.A. (2013). Are ethical codes an instrument to protect the consumer- stakeholder? A study of Spanish financial, energy and telephone sectors. *Revista de Contabilidad - Spanish Accounting Review* 16 (2), 159-168. <https://doi.org/10.1016/j.rcsar.2013.07.005>.
- Lu, L.-C., Huang, Y.-W., & Chang, H.-H. (2014). Confucian dynamism, the role of money and consumer ethical beliefs: An exploratory study in Taiwan. *Ethics & Behavior* 24 (1), 34-52. <https://doi.org/10.1080/10508422.2013.818921>.
- Macak, T., Regnerova, O., & Toth, S. (2014). Design of experiments for analysis factors influencing consumer behaviour. 17th International Conference Enterprise and Competitive Environment, pp. 371-378. [https://doi.org/10.1016/S2212-5671\(14\)00357-8](https://doi.org/10.1016/S2212-5671(14)00357-8).
- Markíza. (2017, September). Test duálnej kvality potravinárskych výrobkov predávaných na území Slovenskej republiky a Rakúska. https://static.markiza.sk/a542/file/item/sk/0000/dvojaka-kvalita-potravin_2017.RhjX.pdf
- May, S. (2013). Cheese, commons and commerce: On the politics and practices of branding regional food. *Ethnologia Europaea* 43 (2), 62-77. <https://doi.org/10.16995/ee.1116>.
- Messner, W. (2017). The role of gender in building organisational commitment in India's services sourcing industry. *IIMB Management Review* 229 (3), 188-202. <https://doi.org/10.1016/j.iimb.2017.07.004>.
- Ministry of Agriculture and Rural Development of the Slovak Republic. (2017, February 14). Potvrdené: Tie isté výrobky majú na Slovensku a v Rakúsku iné zloženie. <https://www.mpsr.sk/index.php?navID=1&navID2=1&SID=111&id=11185>
- Ministry of Foreign Affairs of the Slovak Republic. (2017, May 12). Dvojitá kvalita potravín: v čom je rozdiel? https://www.mzv.sk/detail-aktuality/-/asset_publisher/Hp2qxsn2Z6I5/content/dvojita-kvalita-potravin-v-com-je-rozdiel-
- Mth. (2016, February 18). V Česku jsou méně kvalitní potraviny než na Západě, lidem to vadí. <http://www.ceskatelevize.cz/ct24/domaci/1699219-v-cesku-jsou-mene-kvalitni-potravin-nez-na-zapade-lidem-vadi>
- Muncy, J.A., & Iyer, R. (2021). Anti-consumer ethics: What consumers will not do for ethical reasons. *Strategic Change - Briefings in Entrepreneurial Finance* 30 (1), 59-65. <https://doi.org/10.1002/jsc.2389>.
- Nair, S.R., & Maram, H.K. (2014). Consumer behavior in choice of food and branding. *Future of Entrepreneurship* 1335-1344.
- Niamh, M. (2017, September 3). Croatian survey: Dual quality and price affects 85% of sampled products. <https://www.foodnavigator.com/Article/2017/09/04/Croatian-survey-Dual-quality-and-price-affects-85-of-sampled-products>
- Novy, M. (2018). Globalization and dual quality of food and drug products. *Globalization and its Socio-Economic Consequences* 2711-2718.
- Papaoikonomou, E., Ryan, G., & Valverde, M. (2011). Mapping ethical consumer behavior: Integrating the empirical research and identifying future directions. *Ethics & Behavior* 21 (3), 197-221. <https://doi.org/10.1080/10508422.2011.570165>.
- Parasecoli, F. (2017). *Knowing where it comes from: Labeling traditional foods to compete in a global market*. University of Iowa Press, Iowa.
- Park, H., Geum, Y., & Park, Y. (2015). A dual quality function deployment approach for benchmarking service quality. *Total Quality Management & Business Excellence* 26 (5-6), 569-582. <https://doi.org/10.1080/14783363.2013.860696>.
- Petrescu, D.C., Vermeir, I., Burny, P., & Petrescu-Mag, R.M. (2022). Consumer evaluation of food quality and the role of environmental cues. A comprehensive cross-country study. *European Research on Management and Business Economics* 28 (2), 100178. <https://doi.org/10.1016/j.iemeen.2021.100178>.
- Petrescu-Mag, R.M., & Petrescu, D.C. (2017). Product policy - food quality labeling as food patriotism. Insights on consumer label reading behavior. *Quality - Access to Success* 18 (2017), 327-333.
- Pokorná, V. (2018, April 17). Klúčom k odstráneniu dvojitej kvality potravín bude spoločná metodika. <https://euractiv.sk/section/ekonomika-a-euro/news/klucom-k-odstraneniu-dvojitej-kvality-potravin-bude-spolocna-metodika/>
- Poracký, M. (2018, February 2). Pizza od Oetkera je užako z Rakúska. Firma zmenila kvalitu. <https://ekonomika.sme.sk/c/20767346/pizza-od-oetkera-je-uz-ako-z-rakuska-firma-zmenila-kvalitu.html>

- Pratt, J. (2007). Food values: The local and the authentic. *Critique of Anthropology* 27 (3), 285-300.
- Mihai, R.H., Lazar, I., & Solomon, A. (2009). Exploratory analysis of customer satisfaction in case of Cluj-Napoca city hall social canteen. *Transylvanian Review of Administrative Sciences* 5 (25), 110-131.
- Ramachandran, R., Sudhir, S., & Unnithan, A.B. (2021). Exploring the relationship between emotionality and product star ratings in online reviews. *IIMB Management Review* 33 (4), 299-308. <https://doi.org/10.1016/j.iimb.2021.12.002>.
- Řezníčková, A. (2017, July 12). Které výrobky jsou v Česku šízené a které lepší než v Německu. https://www.idnes.cz/ekonomika/test-a-spotrebitel/srovnani-kvalita-potraviny-cesko-nemecko-sizene.A170712_090002_test_jan
- Sameková, L. (2016, November 8). Slovensko lobuje v EÚ: Na nemeckú kvalitu potravín majú právo všetci. <https://gazduj.etrend.sk/clanky-gazduj/slovensko-nemecka-kvalita-potravin.html>
- Sameková, L. (2017, February 20). Lidl a Manner vyčítaj úministerstvu chyby v porovnaní kvality potravín. <https://www.trend.sk/spravy/lidl-manner-vycitaju-ministerstvu-chyby-porovnan-kvality-potravin>
- Sedliacikova, M., Satanova, A., Zavadsky, J., & Zavadska, Z. (2015). Quality cost monitoring models in practice of woodworking company in Slovakia. *Procedia Economics and Finance* 26, 77-81.
- Shah, S.A.M., & Amjad, S. (2017). Consumer Ethical Decision Making: Linking Moral Intensity, Self-Consciousness and Neutralization Techniques. *Australasian Accounting Business and Finance Journal* 11 (1), 6. <https://doi.org/10.14453/aabfj.v11i1.7>.
- Sivý, R. (2017, July 27). Fico sabude Junckera pýtať na rozdiely v kvalite potravín. <https://www.aktuality.sk/clanok/508349/fico-sa-bude-junckera-pytat-na-rozdiely-v-kvalite-potravin/>
- Sladkovská, I. (2017a, July 13). Výrobca Persilu reaguje na kritiku. Tvrdí, že Slováci majú iné skvrny. <https://www.aktuality.sk/clanok/504997/vyrobca-persilu-reaguje-na-kritiku-tvrdi-ze-slovaci-maju-ine-skrvny/>
- Sladkovská, I. (2017b, October 2). Nové testy dvojakej kvality potravín: Je to čoraz horšie. <https://www.aktuality.sk/clanok/526079/nove-testy-dvojakej-kvality-potravin-je-to-coraz-horsie/>
- Southey, F. (2019, September 23). Nestlé quashes 'dual quality' suspicions in Romania: Minor ingredient ratio variations 'do not reflect an East/West division'. <https://www.foodnavigator.com/Article/2019/09/23/Nestle-refutes-ANPC-dual-quality-claim-in-Romania>
- Sudor, K. (2012, May 25). Neverte jahodám na obale. <https://domov.sme.sk/c/6391125/neverte-jahodam-na-obale.html>
- Tomek, G., & Vávrová, V. (2011). *Marketing*. Professional Publishing, Praha.
- University of Chemical Technology in Prague. (2015, April 24). Závěrečná zpráva srovnání kvality výrobků v ČR a SRN. http://data.idnes.cz/soubory/ekonomika/A150703_HRO_012_ZVRENZPRVAPROAHOLD.PDF
- UOKiK. (2018, October 9). Good because German? Results of UOKiK tests. https://www.uokik.gov.pl/aktualnosci.php?news_id=14842
- Veselovská, L. (2022). Dual quality of products in Europe: A serious problem or a marketing opportunity? *Total Quality Management & Business Excellence* 33 (9-10), 1146-1163. <https://doi.org/10.1080/14783363.2021.1940929>.
- Vokounova, D. (2014). Current consumer buying behavior. In: *Proceedings of the 5th International Scientific Conference on Trade, International Business and Tourism*, pp. 515-521.
- Vukusic, I., & Sago, D (2018). Some Aspects of Civil and Criminal Law Regulation of Food Quality - Croatian and European Point of View. *Economic and Social Development* 84-95.
- Welz, G. (2012). The Diverzity of European Food Culture. In: Kockel, U., Frykman, J. (Eds.), *A companion to the anthropology of Europe*. Wiley-Blackwell, Chichester.
- Wszoborowska, P. (2019, March 5). No more double quality of food in the EU. We are getting closer, but they can block it. <https://innpoland.pl/150631,podwojna-jakosc-zywnosci-w-ue-przepisy-standaryzujace-moga-nie-wejsc>
- Závodská, Z., Syč, M., Korenková, V., & Zavadský, J. (2017). Utilization of selected smart devices in manufacturing processes. *Management and economics in manufacturing: proceedings of scientific papers* 302-308.
- Závodská, Z., & Zavadský, J. (2018). Quality managers and their future technological expectations related to Industry 4.0. *Total Quality Management & Business Excellence* 1 (25), 717-741. <https://doi.org/10.1080/14783363.2018.1444474>.
- Závodský, J., Malá, D., Benčíková, D., Sedliáčiková, M., & Šatanová, A. (2020). Behavioral approach to quality: An empirical study in Slovakia SMEs. *Cogent Business and Management* 1 (19), 1794678. <https://doi.org/10.1080/23311975.2020.1794678>.
- Závodský, J., & Hiadlovský, V. (2020). Economic problems of dual quality of everyday consumer goods. *Economic Annals-XXI*, 185, pp. 70-78. <https://doi.org/10.21003/ea.V185-07>.
- Zhao, D.S., & Wang, L.Y. (2017). An Empirical Study on Influencing Factors of Online Consumer Brand Choice Behavior. In: *Proceedings of the 2017 2nd International Conference on Politics, Economics and Law*, pp. 54-57.
- Zolotareva, O.A., & Druk, V.U. (2014). The Collective Investment: Possible Areas and Prospects in the Post-Soviet Economy. *Financial and Credit Activity - Problems of Theory and Practice* 1 (16), 198-207. <https://doi.org/10.18371/fcactp.v1i16.28526>.