



KEY FACTORS AFFECTING CONSUMPTION OF MEAT AND MEAT PRODUCTS FROM PERSPECTIVE OF SLOVAK CONSUMERS

Kristína Predanociová, Ľubica Kubicová, Zdenka Kádeková, Ingrida Košičiarová

ABSTRACT

Nowadays, meat and meat products are considered as a part of the daily diet of most people. Therefore, it is necessary to deal with meat and meat products and their consumption according to individual types of meat. Based on the above, the paper is focused on the issue of consumption of individual types of meat in the Slovak Republic and the identification of key factors affecting the consumption of meat and meat products from Slovak consumers' point of view. Secondary and primary data is used to fulfil the aim of the paper. Secondary data is obtained from the Statistical Office of the Slovak Republic, on the basis of which the development of consumption of individual types of meat is predicted by 2020. It can be stated that poultry and pork meat and meat products consumption is constantly increasing and there is a slight change in beef and fish meat and meat products consumption, which is currently at a very low level. In the context of the above, a questionnaire survey is realised and based on its results it could be concluded that the price is a main reason for the inadequate consumption of different types of meat. However, consumers consume meat and meat products mainly because of taste, which can be considered as an aspect of irrationality in the diet of Slovak consumers. Furthermore, a number of factors affecting the purchase and consumption of meat and meat products have been identified. The results show rational and irrational aspects in the decision making of Slovak consumers. The most important factor is the quality of meat and meat products, which consumers perceive differently, mainly on the basis of their own personality and other aspects of meat quality (price, origin, freshness, and sensory characteristics of meat). Other important factors are the perception of composition, freshness, price and country of origin.

Keywords: consumer; consumption; factor; meat; meat product

INTRODUCTION

The demand for food, including meat and meat products, is relatively inelastic and is influenced by a number of factors. The main factors are the gross domestic product and its redistribution among the population, the standard of living, the market structure, the intensity of international trade and individual consumer behaviour (Skořepa, 2009). In relation to meat consumption, the factors determining the consumption of meat and meat products can be divided into three basic categories. The first category is represented by commercial and political factors, which include trade liberalization, globalization and political issues linked to the common agricultural policy (Thow, 2009). The next factors are related to the production of meat and meat products. This group of factors includes the industrialization of production, problems with livestock farming and subsequent production, as well as the possibility of falsifying meat and meat products in the production process (Rivera-Ferre, 2009). The last category of factors affecting the meat and meat products

consumption includes determinants related to socio-economic aspects. These factors include, in particular, the standard of living and the degree of urbanization resulting mainly from changes in eating habits, as well as individual consumer behaviour (York and Gossard, 2004).

Individual consumer behaviour has a significant role, because it influences consumers most in the process of purchase and consumption of meat and meat products. Consumer behaviour is influenced by several factors, including personal, cultural, social and psychological factors.

The first group of factors influencing consumer behaviour are personal characteristics. Kotler and Armstrong (2004) define gender, age, level of education, employment, income and lifestyle as the main personal factors determining individual consumer behaviour. Keyzer et al. (2005) states that consumer behaviour on the meat and meat products market is determined by an increase in population incomes. Increased incomes or lower prices lead to an increase in

food consumption, especially of animal origin. Consumers with a higher income maintain a healthy lifestyle and prefer the consumption of beef, which is more nutritionally. The effects of increased consumer income can be considered beneficial and lead to a higher quality of eating, better health care, a lower risk of obesity and other health diseases (Marmot, 2001). Consumer behaviour is thus determined by the purchasing power of the consumers, which is a reflection of their income and savings (Benda-Prokeínová and Hanová, 2016; Sans and Combris, 2015). Consumers' gender also has an impact on meat consumption, women tend to avoid eating red meat more than men and prefer white meat especially chicken (Kubberød et al., 2002). Another demographic factor is age. According to Jongen and Meulenberg (2005) it is expected that the population older than 65 years will represent 21% in the European Union. This part of the population perceives consumption of meat and meat products differently compared to other age categories (Bleiel, 2010). The size of households is another demographic factor affecting meat consumption (Jongen and Meulenberg, 2005). The following demographic aspect is the level of education. Nowadays consumers have better education, which enables faster and better understanding of information presented in advertisements or information contained in product labelling (Frewer and Van Trijp, 2006). Lifestyle has a significant factor in relation to personal influences and is influenced by general factors affecting the consumption of meat and meat products. Buitrago-Vera et al. (2016) diversify consumers according to their consumers' lifestyles and their relationship to meat and meat products into four groups: indifferent consumers, cooks, comfortable consumers and rational consumers.

Cultural factors are another group of factors influencing consumer behaviour in relation to meat and meat products. Culture has a significant impact on consumers, which is reflected in the shaping of their behaviour and in providing standards and rules on the facts that affect the consumption of the selected type of food (Schiffman, Kanuk and Hansen 2012). In the context of meat and meat products, it is necessary to emphasize the symbolic importance of meat (Beardsworth and Keil, 1997) or the tradition of eating meat and meat products based on cultural and religious elements such as rituals, myths, taboo (Mathijs, 2015). In some cultures, there have been changes in the practices of killing animals, presenting meat on the table, and in what is considered edible and not in recent years (Dvořáková-Janů, 1999). Currently, there are cultures where meat is considered as a tool of hierarchical consolidator or social connection of the population (Mathijs, 2015). Within the culture, the subcultures are also created and divided into four groups: ethnic groups, religious groups, racial groups, geographical areas (Richterová et al., 2007).

Consumer behaviour on the meat and meat products market can be also influenced by social factors. Social factors – consumer groups, family, the role of the individual in society, etc., have a significant impact on the resulting consumer behaviour (Kotler, 2007). In the context of consumer behaviour on the meat market, opinion leaders have an important role in terms of marketing. There are people influencing the consumer behaviour of other members of the group, and they may be

relatives, friends, doctors, nutritional advisers (Font-i-Furnols and Guerrero, 2014). The family also plays an important role in the consumer's behaviour in the process of purchase and consumption of meat. With regard to social factors, it is also important to point out that consumers also demonstrate their position in society by the consumption of individual types of meat and meat products (Ingr, 2011).

Another group of factors are psychological factors. The incentive aspect plays an important role and lead consumers to buy and consume meat and meat products. In particular, physiological needs and the fact that the consumption of meat and meat products is essential for the nutrition of consumers could be considered as motivation (Dostálová and Kadlec, 2014). Motivation encourages consumers to ask questions with the purpose to buy meat products. On the other hand, it is important to point out the demotivation of consumers to meat and meat products and the orientation of consumers towards healthy eating with the absence of a given type of food. Another factor is perception. Perception of sensory aspects of meat, such as the taste and visual appearance of meat, plays an important role in consumer behaviour in the meat and meat products market. The appearance of fresh meat and meat products, especially their colour, is influenced by genetics, nutrition, livestock farming, climatic conditions or the product packaging (Kerry, 2009). The juiciness and taste of the meat are very difficult to identify in the process of selection of meat and meat products. These factors are mainly influenced by the breed of animals, age, and the process of ripening of meat (Ingr, 2011). According to Pirvutoiu and Popescu (2013) consumers prefer domestic meat and meat products mainly because of their lower risk. There are mainly risks related to meat and meat products that do not meet the quality requirements for a given type of food (Kameník, 2014). All these factors are considered as aspects affecting the quality of meat and meat products. If the consumers do not have necessary information, they often assess the quality of the products on the basis of their perception. The choice of specific meat products could be influenced by the personality of the consumer. The last factor is the emotions that affect consumers and can change depending on the experience of buying products. Emotions are recorded in memory depending on the degree or intensity of the sensory experience, and it leads to the recall of past experiences (Horská and Berčík, 2017; Rybanská, Nagyová and Košíčiarová, 2014).

Scientific hypothesis

The aim of the paper is to point out the consumption of meat and meat products in the Slovak Republic and to identify the main factors affecting the consumption from the point of the Slovak consumer. For a deeper analysis of the research objectives, the following hypotheses were formulated:

Hypothesis no. 1: We assume that Slovak consumers evaluate the factors influencing the purchase and subsequent consumption of meat and meat products differently.

Hypothesis no. 2: We assume that there is a difference in noticing percentage of meat in meat products depending on different types of meat.

Hypothesis no. 3: We assume that there is a difference in consumer perception of freshness depending on different types of meat and meat products.

Hypothesis no. 4: We assume that there is a difference in consumer perception of prices depending on different types of meat and meat products.

Hypothesis no. 5: We assume that there is a difference in the preference of Slovak origin of meat and meat products depending on different types of meat and meat products.

MATERIAL AND METHODOLOGY

The aim of the paper was achieved by using and processing secondary and primary data.

The secondary data was obtained from the Statistical Office of the Slovak Republic. The obtained secondary data became the basis for the calculation of the average growth coefficient (k') and for the prediction of the development of meat and meat products consumption by 2020 using the determinant coefficient R².

The primary data was obtained from the consumer survey aimed at the identification of key factors affecting the purchase and subsequent consumption of meat and meat products in the Slovak Republic. The questionnaire survey was conducted on a sample of 498 respondents in the Slovak Republic and was realised in the electronic version from April to December 2018.

The respondents involved in the questionnaire survey were diversified into 8 categories by gender (women 62.0%; men 38.0%), age (up to 25 years 44.4%; 26 – 35 years 22.3%; 36 – 50 years 19.3%; more than 51 years 14.1 %), education (elementary 2.0%; secondary 46.0 %; university 52.0%), residence (village 47.8%; city 52.2%), economical status (student 37.8%; employed 47.8%; the self-employed person 4.8%; unemployed 1.0%; maternity leave 2.2%; retired 6.4%), monthly income of respondent (up to 400 Euro 40.4%; 401 – 800 Euro 38.8%; more than 801 Euro 20.9%), monthly household income (up to 1,000 Euro 20.1%; 1,001 – 2,000 Euro 56.0%; more than 2,001 Euro 23.9%) and by number of members in the household (1 – 2 members 25.7%; 3 members 21.1%; 4 members 35.7%; more than 5 members 17.5%).

Statistic analysis

Collected data was processed by using Microsoft Excel and then evaluated in the statistical program XL Stat.

The formulated hypotheses were tested by applying the following statistical methods:

- Cochran's Q test,
- Friedman test,
- Nemeny's method.

In hypothesis testing, if the p-value is lower than significant level, in case of XL Stat software, it is 0.05, the null hypothesis is rejected and the alternative hypothesis is confirmed.

RESULTS AND DISCUSSION

In the Slovak Republic, the development of meat and meat consumption was at a relatively stable level with an average annual growth rate of 1.12% (k' = 0.0112) in the period 2009 – 2018 (Figure 1) (Statistical Office of the Slovak Republic, 2019). Meat and meat products consumption was sufficient and exceeded the recommended amount in terms of food rationalization (meat 57.3 kg, fish 6.0 kg) during the analysed period except for 2014 and 2015. The lower consumption of meat and meat products may have been due to food scandals in the last years, mainly related to poultry and beef, as well as rising prices for selected types of food. Since 2015, there has been a relatively fast growth rate in the consumption of meat and meat products because the consumption has increased by 16.7 kg per person and year over the last four years. The trend of the development of meat and meat products consumption in the monitored period can be expressed by the following quadratic function:

$$q_t = 69.592 - 5.4243 * t + 0.5572 * t^2$$

$$R^2 = 0.8125$$

On the basis of the chosen quadratic function, it is possible to expect the trend of the development of meat and meat products consumption in the future, which will have an increasing tendency and the consumption of analysed types of food should increase to 85 kilograms per person and year in 2020. In this context, it is necessary to point out the possible reasons for the overall high consumption of meat and meat products. These reasons may include lower prices for pork and poultry meat compared to fish and beef, the level of prices of meat and meat products in relation to consumers' incomes, standard of living in the Slovak Republic, insufficient information about the positive and negative effects of meat consumption on human health, or inadequate promotion of individual types of meat (Skořepa, 2009).

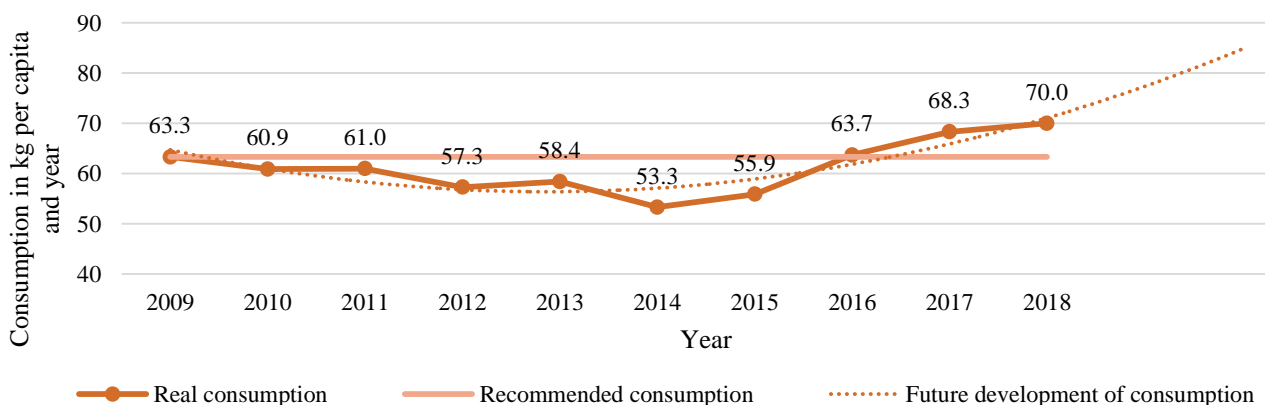


Figure 1 The development of meat and fish consumption in kilograms per capita and year in the Slovak Republic. Note: Statistical Office of the Slovak Republic, 2019.

In connection with the consumption of meat and meat products, it is important to highlight the proportion of individual types of meat in the diet of Slovak consumers.

The consumption of pork meat and meat products had a slightly increasing tendency and ranged from 32.0 kg to 35.8 kg per inhabitant of the Slovak Republic and year during the monitored period 2009 – 2018, which implies an average annual growth of consumption of the given type of meat by 1.25% ($k' = 1.0125$) (Figure 2). In 2014, a greater decrease in pork meat and meat products consumption was recorded, mainly due to lower prices of poultry meat. From 2015 to 2018 the sharp increase in consumption was recorded by almost 8 kilograms, which represents an increase of 27.9%. We have chosen quadratic function with the following parameters as a suitable function to describe the trend in the development of pork meat and meat products consumption:

$$q_t = 33.748 - 1.7749 * t + 0.209 * t^2$$

$$R^2 = 0.7174$$

Based on the quadratic function, it is possible to assume the consumption of pork meat and meat products with a perspective for the next two years. The consumption should increase and exceed the level of 40 kilograms per inhabitant of the Slovak Republic in 2020. The increasing trend in consumption may be caused by the availability of pork meat in commercial establishments, various marketing activities for sales support in retail, the prices of substitute products and by the existence of food scandals related to other types of meats, in particular, beef and

poultry meat (Matošková and Gálik, 2016).

Poultry meat and meat products consumption was similar in the first and last year of monitored period 2009 – 2018 (Figure 3). The development of consumption of poultry meat and meat products was accompanied by slight fluctuations in both growth and decline. Average growth coefficient k' reached the level of 1.0073, so it means stagnating and relatively stable development of poultry meat and meat products consumption. In 2014 and 2015 the consumption did not reach the recommended dose level and covered 95% of recommended intake. However, the tendency in poultry consumption has increased since 2016 and nowadays poultry meat and meat products are consumed at the level of 22.1 kg. We chose a quadratic function with the following parameters to express the trend of poultry meat and meat products consumption in the monitored period:

$$q_t = 24.89 - 3.2686 * t + 0.2932 * t^2$$

$$R^2 = 0.7215$$

Based on the quadratic function, we expect that the consumption of poultry meat and meat products will increase in the following two years. In 2020 the consumption will reach the annual level of 28 kg per inhabitant of the Slovak Republic. Increasing tendency in poultry meat consumption can be influenced mainly by favourable price relations, purchasing power of the population or new nutritional trends and lifestyles (Kubicová, 2008).

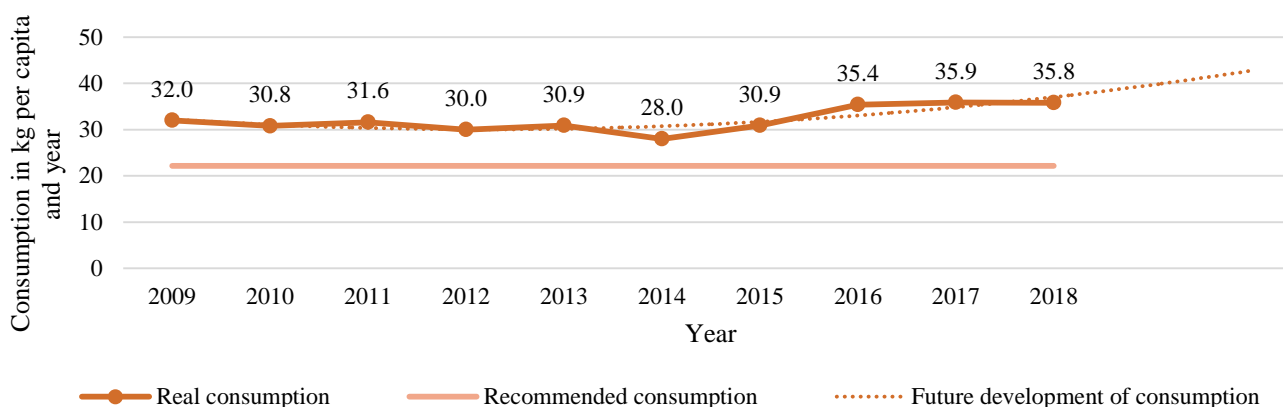


Figure 2 The development of pork meat consumption in kilograms per capita and year in the Slovak Republic. Note: Statistical Office of the Slovak Republic, 2019.

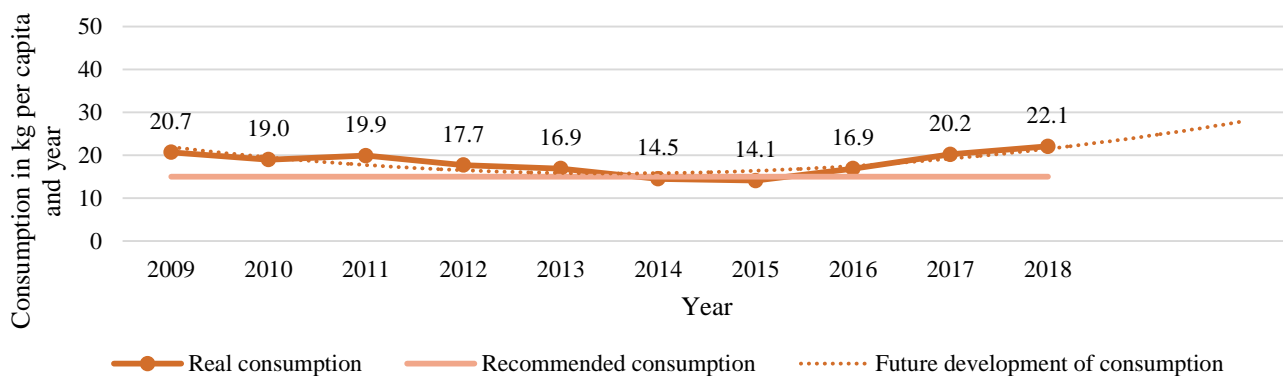


Figure 3 The development of poultry meat consumption in kilograms per capita and year in the Slovak Republic. Note: Statistical Office of the Slovak Republic, 2019.

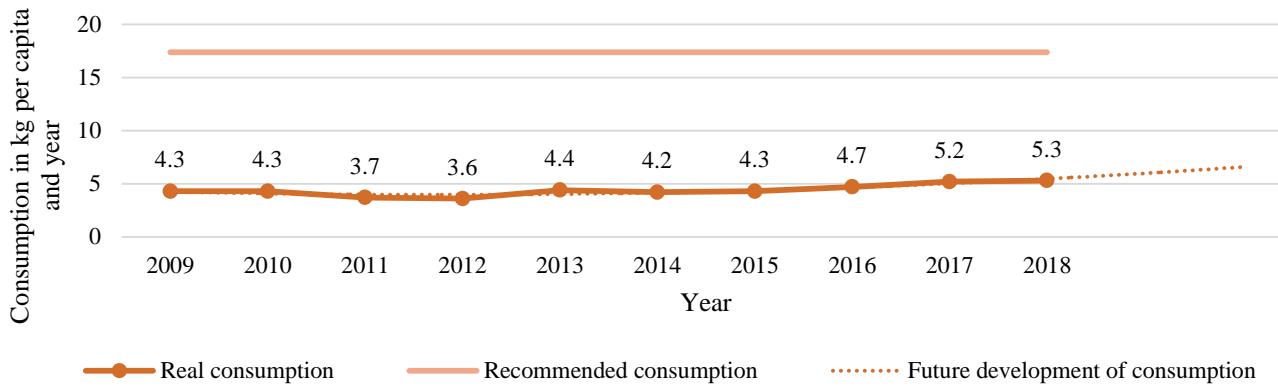


Figure 4 The development of beef meat consumption in kilograms per capita and year in the Slovak Republic. Note: Statistical Office of the Slovak Republic, 2019.

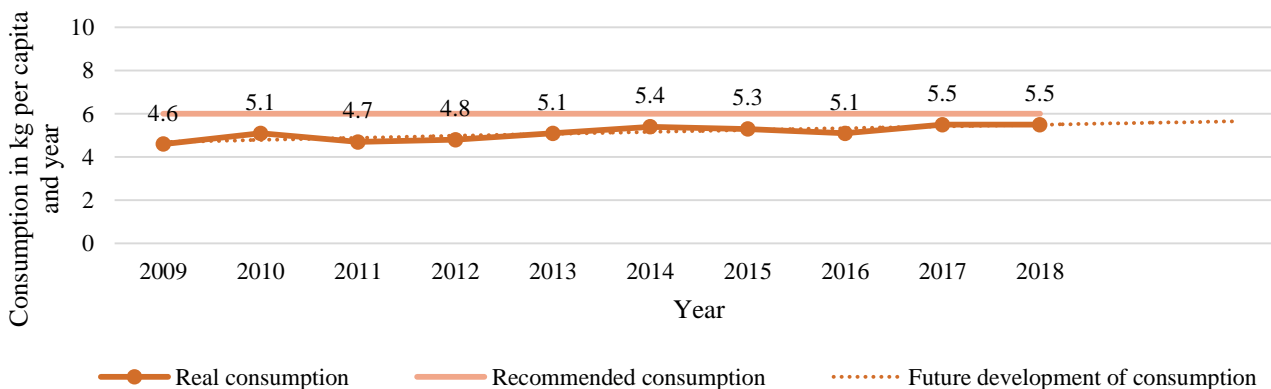


Figure 5 The development of fish meat consumption in kilograms per capita and year in the Slovak Republic. Note: Statistical Office of the Slovak Republic, 2019.

Consumption of beef meat and meat products had a decreasing tendency in the period 2009 – 2018 and an average growth coefficient k' was at the level of 1.0235 (Figure 4). Beef meat and meat products did not reach the level of recommended consumption resulting from the rational diet. In the last year of the monitored period the annual consumption of beef meat and meat products was only 5.3 kg per Slovak citizen. Low beef consumption was due to its unfavourable prices compared to other types of meat, and a decline in consumer confidence caused by the occurrence of food scandals related to beef quality and technology. We chose the quadratic function with following parameters to express the trend of development of beef meat and meat products consumption in the period 2009 – 2018:

$$q_t = 4.5017 - 0.2863 * t + 0.0383 * t^2$$

$$R^2 = 0.8271$$

Based on the quadratic function, it is possible to assume the future development of beef meat and meat products consumption to the next two years. We estimate that the consumption should increase moderately and reach almost 7 kilograms per inhabitant of the Slovak Republic in 2020. The slightly increasing tendency in beef meat and meat products consumption can be influenced by the growth of real wages and living standards of the population, changing eating habits, and expansion of health education and awareness of positive effects on consumer health (Matošková and Gálik, 2016).

The trend in the development of fish consumption had an increasing tendency with an average growth coefficient k' at the level of 1.02 in the period 2009 – 2018 (Figure 5). Fish consumption ranged from 4.6 kg per person and year to 5.5 kg per person and year, so it means an increase on the level of 19.6% compared to the first year of the monitored period. The annual consumption of fish per capita of the Slovak Republic is lower by approximately 8% compared to the recommended doses of consumption in terms of rational nutrition. The trend in the development of fish consumption in the years 2009 – 2018 was expressed by the quadratic function with the following parameters:

$$q_t = 4.595 + 0.1016 * t - 0.0011 * t^2$$

$$R^2 = 0.6907$$

Based on the quadratic function, it is also possible to assume fish consumption in the next two years. Consumption of fish meat and meat products should rise slightly and should reach approximately 5.7 kilograms per inhabitant of the Slovak Republic in 2020. The slightly increasing trend in fish consumption may be influenced by increasing incomes of the population, rising living standards of the population, awareness of consumers about the benefits of fish consumption, changing eating habits, and by existence of food scandals related to other types of meat.

Analysis of the development of meat and meat products consumption in the Slovak Republic shows sufficient total consumption of meat and meat products, but inadequate distribution among individual types of meat. In the context of the above, we were interested in the opinion of Slovak consumers why there is a relatively high consumption of pork and poultry meat and low consumption of beef and fish in the Slovak Republic. Consumers ranked 4 possible reasons for the high consumption of pork and poultry meat, 1 being the most important reason and 4 the least important and the reasons were ranked according to the average order.

Based on the research results (Figure 6), it can be concluded that consumers consider the lower price of monitored products compared to the disposable income (1.58) as the main reason for the relatively high consumption of pork and poultry meat and meat products followed by a higher quality (1.55), offer of substitution products (2.70) and insufficient education related to excessive consumption of poultry and pork (3.17).

Furthermore, consumers also ranked 4 reasons for low consumption of beef and fish, 1 being the most important reason and 4 the least important. Based on the results of the questionnaire survey (Figure 7), it can be concluded that consumers consider the higher price of monitored products compared to disposable income (1.62) as the main reason for the low consumption of beef and meat products and fish, followed by lower product quality (2.48), offer of substitution products (2.78) and inadequate education in the consumption of these type of meat (3.11).

In connection with the consumption of different types of meat, the main reasons for consumption were evaluated. The results of the questionnaire survey (Figure 8) showed that Slovak consumers consume poultry meat and meat products mainly because of taste (30.3%), rational diet (29.9%) and high level of nutritional values (21.1%). Pork is consumed mainly due to its taste (32.3%), high levels of nutritional values (19.5%) and addiction since childhood (19.5%). Beef is preferred due to its taste (32.3%), high nutritional values (25.7%) and part of a rational diet (12.9%).

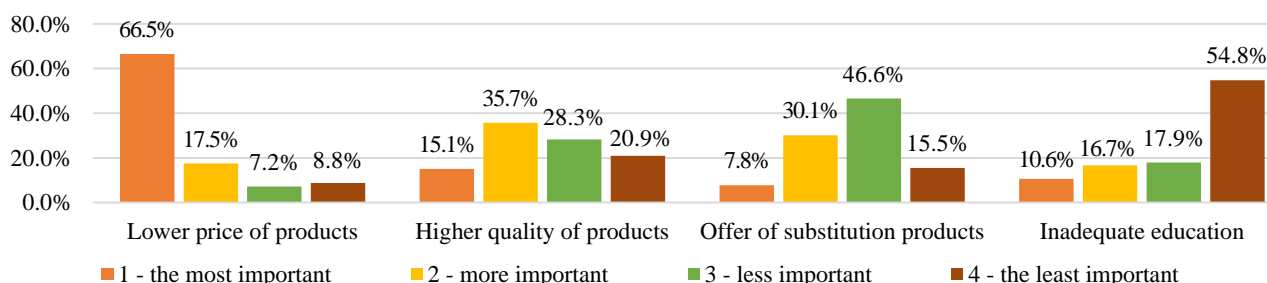


Figure 6 Reasons for high consumption of pork and poultry meat and meat products. Note: questionnaire survey.

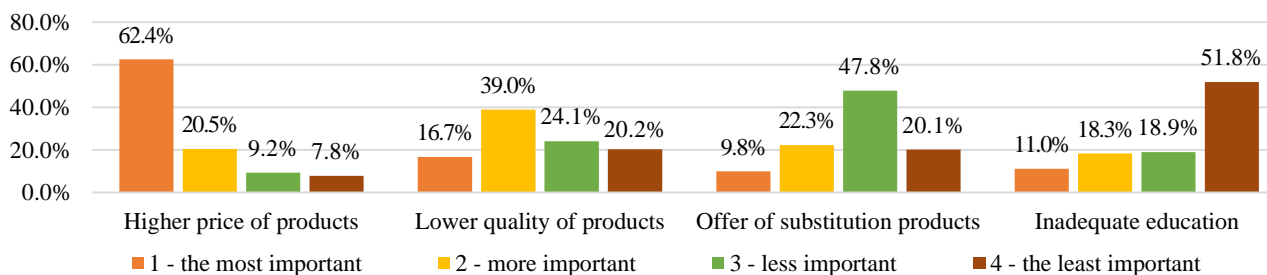


Figure 7 Reasons for low consumption of beef and fish meat and meat products. Note: questionnaire survey.

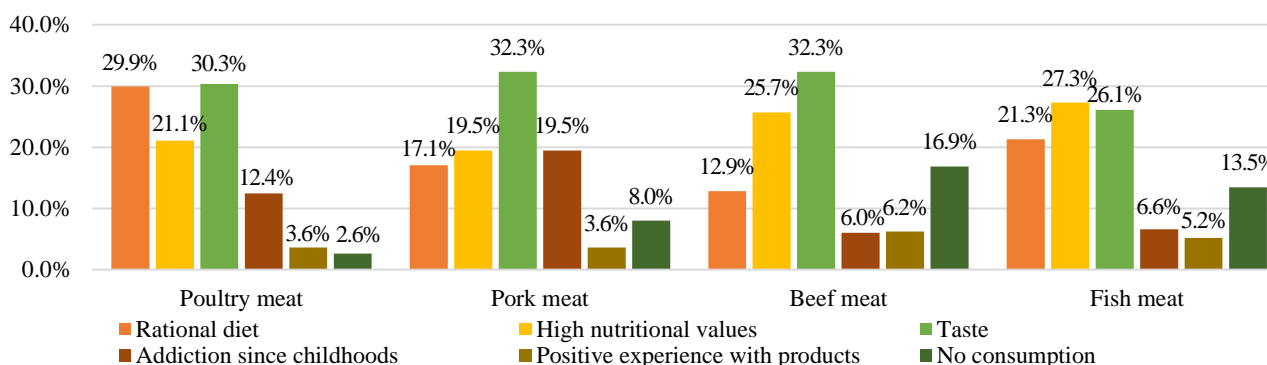


Figure 8 Reasons for meat consumption. Note: questionnaire survey.

Fish meat and meat products are consumed because of high nutritional values (27.3%), taste (26.1%) and rational diet (21.3%).

The questionnaire survey was also focused on factors that influence Slovak consumers in the process of purchase and subsequent consumption of meat and meat products. On the basis of the results (Figure 9) it can be stated that quality (99.0%), composition (94.8%), price (93.1%), freshness (91.7%) and country of origin (81.5%) are the main factors which are the most important for Slovak consumers in selection of meat and meat products. On the other hand, Slovak consumers do not consider product promotion (75.3%) and the appearance of the product packaging (63.1%) as the important criteria in deciding to buy meat and meat products. The survey of GfK (2017) has shown that for the Slovak consumers is still a very important price when deciding about purchasing chosen food, including meat and meat products, but the emphasis on quality is clearly rising. 59% of consumers say they closely monitor the prices of food in different stores and shop where the best deal is offered. As a result, consumers are focusing on quality, but at the same time they are looking for quality for the best price. In relation to the assessment of the various factors affecting the choice of

meat and meat products by consumers, we found differences in the assessment of these criteria among the respondents. It is possible to identify differences in factor evaluation that is confirmed by applying Friedman test and the statistical calculation of the *p*-value (<0.0001). By using Nemeny's method and based on the data in the Table 1, we conclude that quality and composition are the most important criteria when choosing meat and meat products (Group A), another group of significant factors is created by composition, price and freshness (Group B), followed by a set of criteria created by the country of origin, nutrition data and producer (Group C), the other group of factors consisted from the country of origin, the producer and the package size (group D), and the last group of factors is the appearance of packaging and the product promotion (Group E). By dividing the factors determining consumer behaviour when choosing meat and meat products into these groups, it is possible to point to the differences in the assessment of individual criteria (groups) by consumers. The composition criterion is placed in two groups (Group A and Group B), which can be explained by the fact that there is no statistically significant difference in their ratings among Group A and Group B factors.

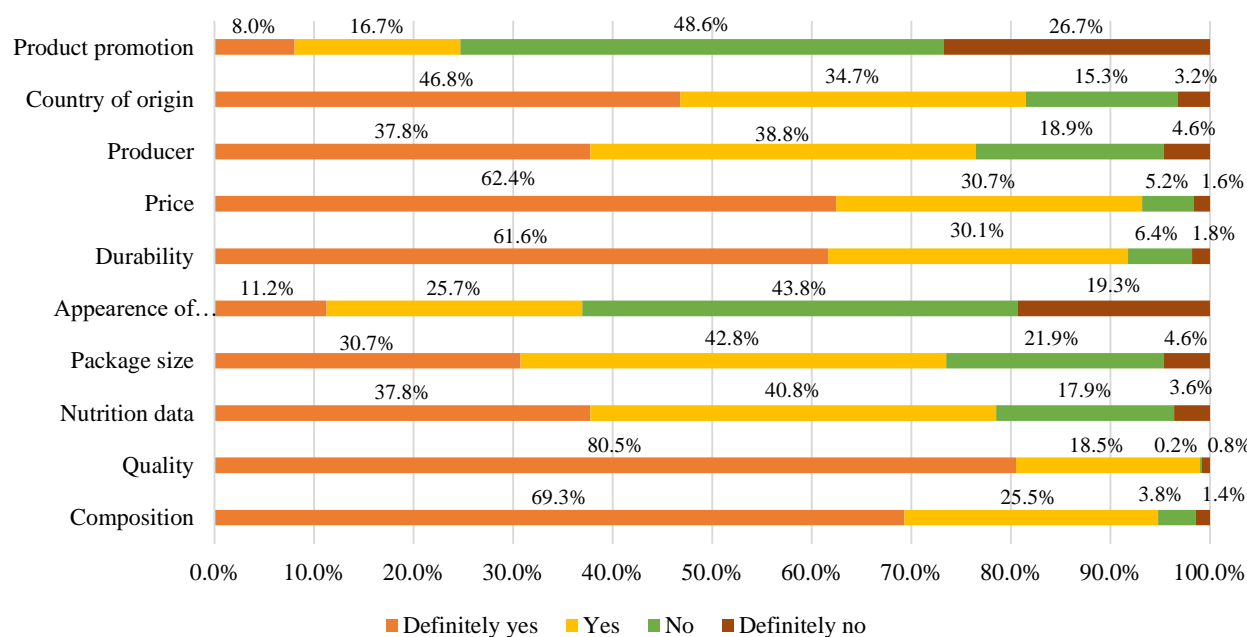


Figure 9 Factors affecting the purchase and consumption of meat and meat products. Note: questionnaire survey.

Table 1 Differences in factor evaluation when choosing meat and meat products by applying the Friedman Test and Nemeny's Method.

Sample	Frequency	Sum of ranks	Mean of ranks	Groups	
Quality	498	1710.000	3.434	A	
Composition	498	1989.500	3.995	A	B
Price	498	2134.000	4.285		B
Freshness	498	2151.000	4.319		B
Country of origin	498	2591.500	5.204		C
Nutrition data	498	2812.000	5.647		C D
Producer	498	2849.000	5.721		C D
Size of package	498	3007.500	6.039		D
Appearance of package	498	3940.000	7.912		E
Product promotion	498	4205.500	8.445		E

Note: questionnaire survey.

However, between groups A and B there is a difference in the assessment of factors by consumers. The similar explanation has also two factors, nutrition data and producer, which are placed in two groups (Group C and Group D).

The quality of meat and meat products as the most important factor in purchasing and subsequent consumption can be perceived differently by each consumer. The perception of the quality of meat and meat products therefore depends mainly on the personality of the consumer. This is also confirmed by **Stávková, Stejskal and Toufarová (2008)**. Consumers evaluate the quality of selected foods based on several aspects, for example, price, composition, sensory, origin, experience with the products, product promotion and so on. These aspects may have a rational and irrational explanation by consumers. However, in the questionnaire survey, we focused on factors that consumers consider as important and perceive them in the process of purchase and subsequently consumption of meat and meat products.

The first factor is the composition. The main component of meat products is meat, so its percentage should be as large as possible. For this reason, we were interested in whether consumers notice the percentage of meat in meat products and how they perceive it in the process of buying products. In general, consumers have started to notice the percentage of meat in their purchase and subsequent consumption (**Tovar&Predaj, 2017**). On the other hand, we assume the possible differences in the noticing the percentage of meat depending on the individual types of meat. We identified these differences on the basis of the applied Cochran's Q test, by calculating of which we confirmed our assumption (p -value = <0.0001). The results (Figure 10) showed that most consumers perceive the

percentage of meat when buying poultry meat products (83.5%) and pork meat products (80.3%). On the other hand, the percentage of meat in the process of buying beef meat products is not perceived by 25.3% and in the case of fish meat products the percentage of meat is ignored by 35.3% consumers. These findings could be caused by two factors. Firstly, consumers do not buy these products because of their high prices and the second factor is the fact that consumers buying these products choose from the cheapest ones. It is probable that these products contain a low percentage of meat, so consumers do not look for this information on the product packaging.

The results of the questionnaire survey showed that another important factor in the process of purchase and subsequent consumption of meat and meat products is their freshness that is connected mainly with the taste of selected foods. **Nagyová et al. (2012)** confirm that freshness is one of the most important aspects for consumers buying food, especially meat and meat products. Our results reached by applying Cochran's Q test showed the existence of a difference in the perception of meat freshness depending on the individual types of meat (p -value = <0.0001). The results of the questionnaire survey also showed (Figure 11) that most consumers prefer fresh products in the case of poultry meat and meat products (81.3%), pork meat and meat products (75.1%) and beef meat and meat products (66.9%). In terms of fish meat and meat products, 46.0% of consumers perceive their freshness. On the other hand, more than 50 % do not perceive the freshness in buying fish, which could be caused by preference of frozen fish meat and meat products, semi-finished products or by the fact that consumers do not consume this type of meat.

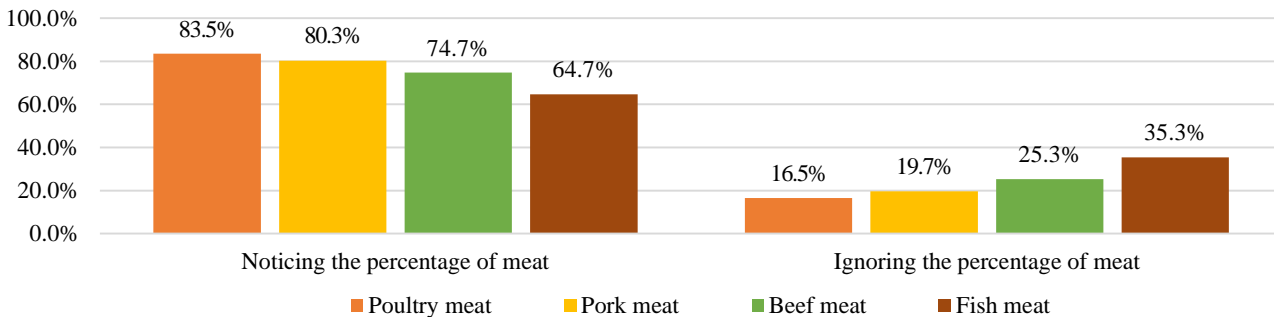


Figure 10 Noticing the percentage of meat in meat products according to different types of meat. Note: questionnaire survey.

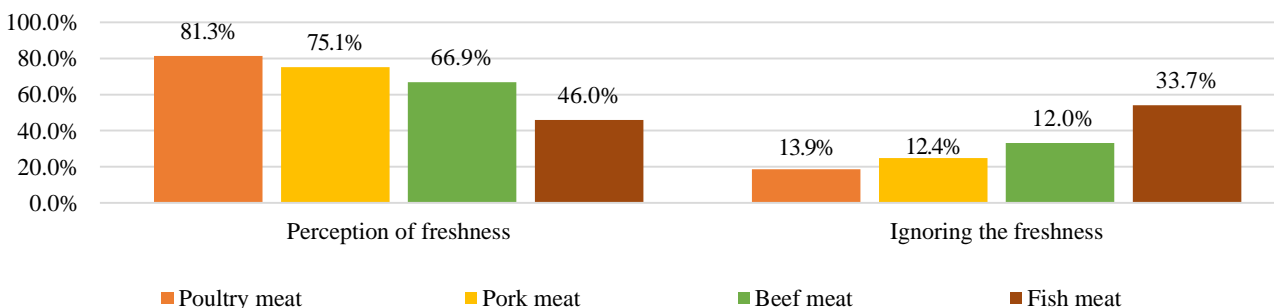


Figure 11 Perception of freshness of meat and meat products according to different types of meat. Note: questionnaire survey.

The following factor determining Slovak consumers in the process of purchase and subsequent consumption of meat and meat products is their price. Price has shaped consumer habits and eating habits since the past, and this can also be seen in the purchase and consumption of analysed foods (Kubičková and Šerhantová, 2005). Within the questionnaire survey, we were interested in the perception of prices of individual types of meat from the perspective of Slovak consumers. In the context of the question, we assumed the differences in the price perception depending on individual types of meat and meat products. We confirmed our assumption based on the calculation of the Friedman test (p -value = <0.0001). Based on the survey results (Figure 12), it can be also concluded that most consumers perceive prices of poultry meat and meat products (69.9%) and pork meat and meat products (70.7%) as reasonable. On the other hand, it is probably that Slovak consumers will start to perceive prices of pork meat as above average, because of the increased prices. Risen prices may be caused by the spread of African disease of pigs, which will have a negative impact on pork production. Furthermore, an increase in demand for European pork by China may also have a negative impact on the development of pork prices (Ministry of Agriculture and Rural Development of the Slovak Republic, 2019). Prices of beef meat and meat products are perceived by most consumers as high or very high (63.9%). In the case of fish meat, prices are considered reasonable (47.2%) and high or very high (46.4%) by Slovak consumers. These results are also confirmed by Schmid et al. (2017), which note the high prices of beef and fish. In this context, consumers are relatively sensitive to changes in the prices of different types of meat (Kubicová and Kádeková, 2012). This fact is also confirmed by Souček and Turčínková (2015), who emphasize that the impact of the price is particularly

important for people with lower purchasing power and is reflected in the focus on cheaper types of meat and meat products.

Another important factor for Slovak consumers in the purchase and subsequent consumption of meat and meat products is their origin. Orientation to the domestic origin of meat and meat products is becoming a global trend, so we were interested in the questionnaire survey whether consumers prefer Slovak meat and meat products. In the context of the above, we assume that differences in preference of Slovak origin of meat and meat products depending on the individual types of meat. These differences were confirmed by calculating the applied Cochran's Q test (p -value = <0.0001) and are demonstrated in Figure 13. Based on the results of the realized questionnaire survey it can be concluded that consumers prefer Slovak products in the case of poultry meat and meat products (85.6%), pork meat and meat products (82.3%) and beef meat and meat products (76.6%). Consumers may prefer the Slovak origin of these products mainly due to the absence of any food scandals related to Slovak meat, shorter distance from the supplier, elimination of carbon footprint, perception of safety and risk of meat, or other perceived characteristics of Slovak meat. These findings were confirmed by Nagyová et al. (2019) and Golian et al. (2018). The Slovak origin of fish meat is not preferred by 51.1% of consumers, which may be due to several factors, such as the limited offer of Slovak fish products, the import of fish products from abroad or the price of foreign fish products is lower compared to Slovak substitutes. However, it is assumed the future widespread of fish farming in the Slovak Republic, so the possibility of a greater preference of Slovak fish products by consumers is probable (Poľnoinfo, 2017).

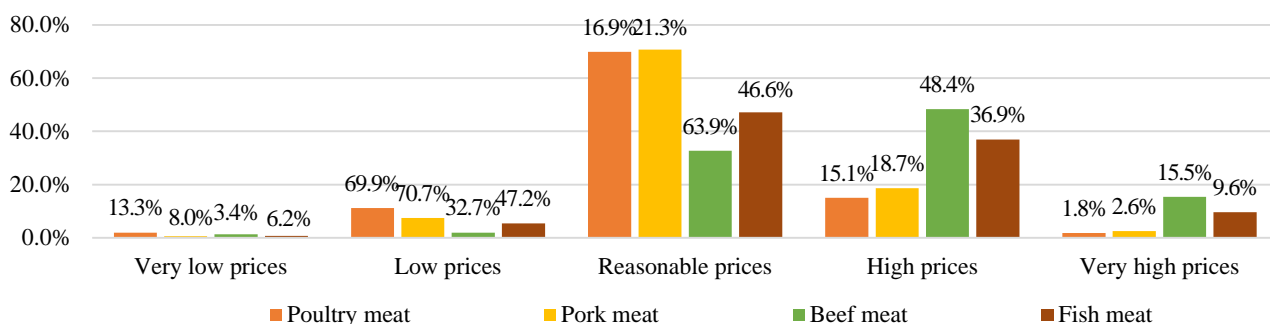


Figure 12 Perception of price of meat and meat products according to different types of meat. Note: questionnaire survey.

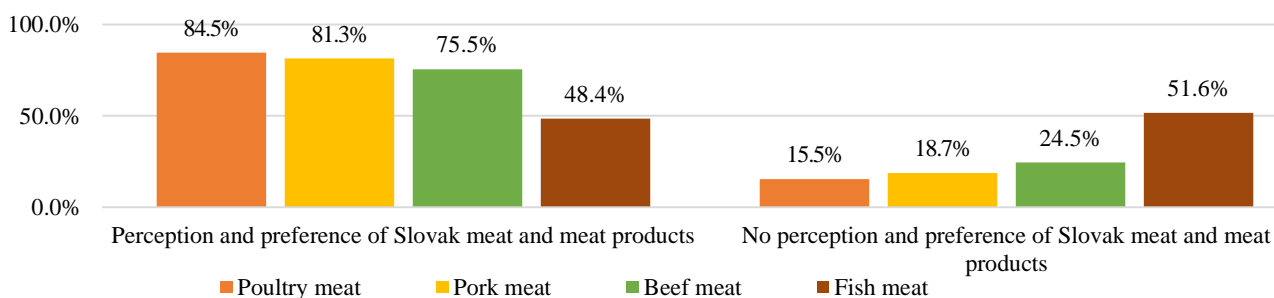


Figure 13 Perception and preference of Slovak origin of meat and meat products according to different types of meat. Note: questionnaire survey.

Based on the reached results, it can be stated that significant changes in the consumption of individual types of meat should not occur and will still be the relatively high pork and poultry meat and insufficient beef and fish meat consumption in 2020 in the Slovak Republic. Consumption is mainly influenced by individual consumer behaviour, which is related mainly to personal and psychological factors. The perception is the main factor from the psychological ones and was identified on the basis of the results of the questionnaire survey. The most important factor in the purchase and subsequent consumption of meat and meat products is the perception of quality, percentage of meat, freshness, price and origin.

CONCLUSION

The paper was focused on the meat and meat products consumption in the Slovak Republic, as well as on the identification of key factors affecting the purchase and consumption. Based on the obtained secondary data, we predicted the development of consumption of poultry, pork, beef and fish meat by 2020 and expect a stronger growth of poultry and pork consumption and slight growth in beef and fish consumption. Although this progression has demonstrated that the total consumption of meat and meat products will be sufficient, the distribution between the different types of meat will still be inadequate. High consumption of pork and poultry meat, as well as low consumption of beef and fish, are mainly caused by price relations of meat in relation to disposable incomes of Slovak consumers. This was confirmed by the primary data from the questionnaire survey, which showed that the price together with the quality of products and the existence of substitution products have a significant influence in the inadequate consumption of individual types of meat. On the other hand, it is important to note that approximately one-third of Slovak consumers consume different types of meat, mainly because of taste. We have also identified the perception of quality, composition, freshness, price and origin as the main determinants in the purchase and consumption of meat and meat products from the Slovak consumer's point of view. In relation to the identified factors, we have analysed in more detail the influence of these factors in the purchase of individual types of meat. The percentage of meat in meat products is most noticed by consumers in the process of purchase and consumption of poultry and pork meat products. Consumers look for the freshness of meat and meat products in the case of poultry, pork and beef. Consumers perceive the prices of poultry and pork as reasonable, but prices of beef and fish as high, which can be considered as the main reason for the low consumption of these two types of meat. The origin of meat is perceived by consumers mainly in the process of purchase and consumption of poultry and pork. Results show that Slovak consumers do not perceive the percentage of meat in products and the origin of meat, especially for beef and fish. It is also important to note that factors such as the perception of the meat and meat products quality, the perception of the percentage of meat in meat products, the perception of freshness, perception of price and perception of meat origin are crucial for consumers. However, consumers approach them individually and explain them

rationally and irrationally, depending mainly on their personality.

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Contact address:

*Ing. Kristína Predanocyová, Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Marketing and Trade, Trieda A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421 37 641 4835,

E-mail: kristina.predanocyova@gmail.com

ORCID: <https://orcid.org/0000-0001-8867-1666>

doc. Ing. Ľubica Kubicová, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Marketing and Trade, Trieda A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421 37 641 4165,

E-mail: kubicova.lubka@gmail.com

ORCID: <https://orcid.org/0000-0003-3789-6894>

Ing. Zdenka Kádeková, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Marketing and Trade, Trieda A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421 37 641 4171,

E-mail: zdenka.kadekova@yahoo.com

ORCID: <https://orcid.org/0000-0003-2814-5239>

Ing. Ingrida Košičiarová, PhD., Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Marketing and Trade, Trieda A. Hlinku 2, 949 76 Nitra, Slovakia, Tel.: +421 37 641 4171,

E-mail: ingrida.kosiciarova@gmail.com

ORCID: <https://orcid.org/0000-0003-3763-0826>

Corresponding author: *