

Purchase intentions of consumers on the meat market: Comparative study of individual types of meat

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Abstract

Meat is a traditional and important part of the consumer's diet and its adequate consumption primarily brings nutritional and health benefits. The aim of the paper is to explore consumer behaviour in making meat purchasing decisions with an emphasis on poultry, pork, beef and fish, as well as to examine the differences in purchase intentions between these types of meat. For achievement the aim of the paper a questionnaire survey was conducted in the Slovak Republic on a sample of 730 respondents buying all four types of meat. Using various statistical methods, differences in purchasing behaviour between individual types of meat were examined. Based on the results, it can be concluded that the most frequently purchased type of meat is poultry, followed by pork, fish and beef. Furthermore, we identified that purchase of individual types of meat is influenced by demographic characteristics (gender, residence, education, number of members in the household). The results further indicated that the highest monthly expenses are spent on the purchase of poultry and pork, because the prices are perceived as acceptable. Approximately 50 % consumers spend up to 10 euros per month on the purchase of beef and fish due to higher prices. The results also showed that more than 50% consumers do not react to price changes in the case of pork and poultry meat. In general, it can be stated that meat and meat products of all types are mostly purchased in supermarkets and hypermarkets and in local groceries, while the place of purchase is chosen based on the product quality, the assortment and the distance from the place of residence. Slovak consumers are relatively satisfied with the range of meat products, but differences have been identified and consumers would welcome a wider range of fish and beef. Results showed that the purchase of all types of meat and meat products is primarily determined by the quality, freshness and percentage of meat. The consumer study brings a new perspective on consumer behaviour in making purchasing decisions for meat with an emphasis on the differences in purchasing intentions between individual types of meat. Study dealing with this issue is currently absent in Slovakia and thus can fill a scientific research gap. In addition, the results of the study provide valuable information not only for scientific purposes, but also for food companies in the creation of marketing strategies and policy makers.

Keywords: consumer, meat, poultry, pork, beef, fish

1. Introduction

Meat is one of the important components of human diets and provides our body with a range of nutrients, making it an essential food for us to eat. Meat contains important sources of whole protein, unsaturated fat acids, minerals including calcium, zinc, iron and B vitamins, especially vitamin B12 (Pereira & Vicente 2013; Valsta et al. 2005; Scollan et al. 2006; Zhang et al. 2010). Meat can be divided into white meat and red meat, and the predetermined basic parameters are mainly the content of myoglobin or heme iron, lipid profile, fatty acid composition, cholesterol content. Red meat contains very important sources of proteins, minerals such as zinc and iron, vitamin B12 and a wide variety of fats including essential omega 3 polyunsaturated fats. White meat is also valuable source of vitamins and minerals mainly iron and zinc. However, mineral and B12 vitamin contents are lower compared to red meat (Ingr 2002; Keeton & Dikeman 2017; Williams 2007).

The consumption of meat is desirable, but only in adequate quantities because excessive meat consumption together with unhealthy lifestyle behaviour can lead to the risk of many diseases. In relation to the above, it should be emphasized that red meat is more associated with the risk of chronic diseases compared to white meat (Giromini & Givens 2022). Richi et al. (2015) emphasize, that many studies indicate that the long-term excessive consumption of red meat and processed meat is associated with an increased risk of total mortality, cardiovascular disease, colorectal cancer and type 2 diabetes.

Despite the risk of diseases, meat consumption has been increased in recent years and it is expected that the global demand for meat will increase over the coming decades (Font-i-Furnols & Guerrero 2022). Among the various types of meat on the market, the consumption of poultry and pork has increased the most, while the consumption of beef has remained stable or even declined slightly in recent years (Basu 2014; Milford 2019). The consumption and demand for meat is determined by various factors. Purchasing behavior and the purchase decision are strongly influenced by personal characteristics, mainly age, gender, level of education, employment, income, household size (Kotler & Armstrong 2017; Bielik et al. 2021) and lifestyle (Buitrago-Vera et al. 2016), or the purchasing power of the population (Benda-Prokeinova & Hanova 2016, Font-i-Furnols & Guererro 2014, Sans & Combris 2015). Cultural differences (Mathijs, 2015) and social factors, such as the role of the individual or the family, also influence the purchase and consumption of meat (Font-i-Furnols & Guererro 2014; Ingr 2011). Psychological factors including the motivation, perceived quality, and the personality of the consumer also have a significant impact (Dostálová & Kadlec 2014; Predanociová et al. 2019). Marketing factors are increasingly mentioned as a determinant of the purchase of meat and meat products, and include price, brand, promotion, or availability (Font-i-Furnols a Guerrero, 2014).

Based on the above, in the Slovak Republic, the total meat consumption is more than 70 kg per year, so it is sufficient, but the distribution among individual types of meat is inadequate (Predanociová et al. 2019). It is necessary to emphasize, that pork and poultry consumption is high and beef and fish consumption is low (Statistical Office of the Slovak Republic, 2023). On this background the aim of the paper is to examine purchase intentions and factors affecting purchase decision-making process of Slovak consumers in the meat market, individually for poultry, pork, beef and fish. In the context of the aim the following research questions were formulated:

1. Which type of meat and meat products are the most frequently purchased by Slovak consumers?
2. What are buying patterns of consumer towards poultry, pork, beef and fish meat and meat products in Slovakia?

2. Methodology

The consumer study is based on the primary data which were obtained from a questionnaire survey. The aim of the questionnaire was to identify attitudes of consumers towards purchasing of individual types of meat and explore consumer perception, preferences, factors affecting purchase intentions of consumers on the meat market. Questionnaire survey was conducted on a sample of 1,409 respondents in the Slovak Republic, of which 730 respondents purchasing all four types of meat (poultry, pork, beef and fish). The demographic profile of the research sample is shown in Table 1.

Table 1 Demographic profile of research sample (Source: own research)

Categories	Sub-categories	Whole sample	Selected sample
gender	female	59%	52.8%
	male	41%	47.2%
age	18-25 years	38.8%	34.8%
	26-35 years	22.1%	23.4%
	36-50 years	21.8%	24.0%
	over 51 years	17.3%	16.8%
education	elementary	3.4%	3.3%
	secondary school	47.5%	48.4%
	university education	49.1%	48.4%
economic status	employed	48.9%	51.0%

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	entrepreneur	8.9%	10.7%
	student	31.2%	28.2
	retired	7.6%	6.3%
	unemployed	0.8%	1.1%
	on maternity leave	2.7%	2.7%
	1	5.8%	4.7%
	2	20.3%	18.8%
no. of household members	3	27.3%	28.6%
	4	30%	31.0%
	>4	16.5%	17.0%
	up to €500	39.2%	34.4%
	€501 – €1,000	37.3%	40.4%
monthly income of the respondent	€1,001 – €1,500	16.5%	16.7%
	€1,501 – €2,000	4.6%	5.5%
	>€2,001	2.3%	3.0
	up to €1,000	17.7%	14.0%
	€1,001 – €2,000	49.6%	51.1%
monthly household income	€2,001 – €3,000	23.7%	24.4%
	€3,001 – €4,000	4.8%	5.9%
	>€4,001	4.1%	4.7%
	rural	45.5%	43.4%
residence	urban	54.5%	56.6%

Consumer survey was focused on exploration of consumer behaviour in making meat purchasing decisions with an emphasis on poultry, pork, beef and fish and examination of differences in purchase intentions. Firstly, consumers determined the frequency of purchase of meat individually for each type and chose from options: more than once a week, 1-2 times a week, irregularly. Moreover, statistically significant differences depending on the demographic characteristics (gender, age, education, residence, members of households, economic activity, monthly income) were examined using the Chi-square test of independence.

In the context of the purchasing behaviour, monthly expenditure on meat and meat products were also investigated and consumers determined their monthly expenditures on individual types of meat in the following categories: less than 10 euros, 10-15 euros, 16-20 euros, 21-25 euros, more than 25 euros. Consumers also specified their perception towards the price of individual types of meat and indicated whether they perceive the prices as low, adequate or high.

Further part of questionnaire was focused on preferences related to place of purchase of individual types of meat. Consumers chose the most preferred place of purchase from the following options: super/hypermarkets, local grocery stores, specialized grocery stores or other. Besides the mentioned, Slovak consumers identified the key factors for choosing purchase place and chose one of these options: price, quality, assortment, distance from home, experience and other.

The last part of survey was aimed at identifying factors affecting meat purchase. Consumers evaluated factors: quality, freshness, meat content, origin, aroma, appearance, durability, previous experience, producer, health aspect, price, emulsifiers content, protein content, water content, fat content, salt content, nitrates content, saturated fatty acids, energy, product information, size of packaging appearance of packaging, ecological aspect, product promotion and convenience, on a 10-point scale, where 1 represented the unimportance of factor, 10 represented the high importance of factor. Differences between evaluated factors for all four types of meat were analysed using the Friedman test and Nemenyi post-hoc test. For statistical testing, the significance level was set at 0.05 and XLSTAT 2022.4.1 software was used.

3. Results

The results of the consumer survey showed that 48.9% of consumers buy all four types of meat and meat products and only these consumers were selected for further parts of survey. Based on the research results, we can state, that the most preferred for purchase is poultry meat and meat products, followed by pork meat and meat products. On the other hand, Slovak consumers prefer to buy beef and fish meat and meat products at least. In the context of the purchase frequency, the results stated in the Table 2 showed that poultry meat and meat products are the most often purchased and 80 % of consumers purchase poultry at least once a week. Pork meat and meat products are the second most often purchased type of meat and almost 60 % of consumers buy it at least once a week. The results also showed that fish and beef are the least purchased types and almost 70 % of consumers buy them only irregularly.

Table 2 Frequency of purchase of meat and meat products (Source: own research)

	Poultry		Pork		Beef		Fish	
	n	%	n	%	n	%	n	%
more than once a week	213	29.2	101	13.8	43	5.9	51	7.0
1-2 times a week	372	51.0	342	46.9	181	24.8	200	27.4
irregularly	145	19.8	287	39.3	506	69.3	479	65.6

3.1. Poultry meat and meat products

The first examined type of meat was poultry, as the most frequently purchased. There were identified differences in frequency of poultry meat and meat products purchasing and demographic characteristics using Chi-square test of independence. Based on the results it can be stated that consumers from households with more members, students and consumers with lower income buy more poultry compared to others (p -value <0.05). On the other hand, results showed that gender, age, education and residence have no influence on purchasing behaviour and frequency of poultry purchases.

The results also showed, that 57% of consumers prefer to buy this type of meat in supermarkets (56.4%), followed by local grocery stores (19.3%) and specialized grocery stores (12.1%). Moreover, the key determinants for choosing a place of poultry purchasing are distance from home, quality, assortment and also the price of poultry meat a meat products.

In our research, we were also interested in monthly expenditure on meat products. Based on the results, we can state, that 22.3% of respondents spend less than 10 euros, 23.2% consumers spend from 11 to 15 euros, 24.0% spend from 16 to 20 euros and approximately 30 % of consumers spend more than 21 euros per month on poultry meat and meat products. In connection with the above we identified that almost 70 % of consumers perceive price of poultry as adequate.

Slovak consumers buying poultry meat and meat products also evaluated selected factors affecting poultry meat purchase. By applying Friedman test (p -value <0.001) we identified statistically significant differences in the evaluation of factors and based on the results we can state that the most important factors for purchasing of meat are quality, freshness, meat content and also the origin of meat. Consumers rated the promotion and convenience as the least important factors affecting poultry purchases. Demsar plot shown in the Figure 1 indicated results of Nemenyi post-hoc test which point out the specification of differences in assessment of the influence of factors affecting poultry purchases.

3.2. Pork meat and meat products

The second most frequently purchased type of meat among Slovak consumers are pork meat and meat products. Results achieved by Chi-square test of independence showed that the purchase frequency of pork meat and meat products is influenced by monthly income, gender and age of respondents (p -value <0.005). We can state that consumers with lower income, men and older consumer buy more pork compared to other consumers. On the other hand, it is necessary to emphasize that no differences

were identified between demographic variables such as education, residence, members of households and economic activity and frequency of purchase of pork meat and meat products.

The results of the survey also showed that consumers prefer to buy this type of meat in supermarkets and hypermarkets (50.3%), followed by local grocery stores (21.9%) and specialized grocery stores (15.3%). In the context of the purchase place, results indicated that the place choice is affected by quality, distance from home, and assortment of pork meat products.

Survey was also focused on the monthly expenditures of respondents related to purchasing pork meat and meat products and the results showed that respondents 28.2% respondents spend less than 10 euros, 30.1 % spend from 11 to 15 euros, 21.0% spend from 16 to 20 euros and almost 20.0% consumers spend more than 20 euros per month on a pork meat and meat products purchases. The monthly pork meat expenditures are relatively high and the possible justification is the fact that almost 70 % consumers involved in our research perceive price of pork meat and meat products as adequate.

Results of the Friedman test ($p\text{-value} < 0.001$) indicated statistically significant differences in the evaluation of factors affecting pork meat and meat products purchases and we can state that the most important factors for purchasing of pork are quality, freshness, meat content, the origin of meat, aroma and appearance and the least important factors are product promotion and convenience, ecological aspect, appearance of packaging. Subsequently Nemenyi post-hoc test pointed out specification of the differences in factor evaluation. The following Demsar graph showed these differences (Figure 2).

3.3. Beef meat and meat products

Beef meat and meat products belongs to the least preferred types of meat and meat products purchased by Slovak consumers. Despite the overall low frequency of purchase, differences were identified depending on the demographic characteristics of Slovak consumers. According to Chi-square test of independence, frequency of beef meat and meat products purchase is influenced by monthly income, residence and gender ($p\text{-value} < 0.05$). Consumers with higher income, men and urban consumers buy more beef compared to other ones. Other demographic characteristics, education, age, members of households, economic activity, do not affect the frequency purchase of beef meat and meat products.

Based on the research results we can conclude that almost 50% of consumers prefer supermarkets for purchase beef meat and meat products. Local grocery stores

and specialized grocery stores are less preferred among consumers when purchasing beef. In general, however, it can be stated that the key determinants for purchase place choices are quality, distance from home, assortment.

We also examine the monthly expenditures for beef meat purchasing. We found, that more than 40 % of consumers spend less than 10 euros and 40 % spend from 11 to 20 euros per month on beef meat and meat products. It is also necessary to emphasize that only up to 17% respondents spend more than 20 euros per on beef. The monthly expenditure on beef meat and meat products are connected to consumer perception of beef prices. The result showed that more than 60 % consumers involved in our survey perceive price as high, so it means that higher prices cause lower interest for purchase of beef.

We also identified statistically significant differences in the evaluation of factors and based on the results of Friedman test ($p\text{-value} < 0.001$) we can state, that the most important factors for purchasing of beef are quality, freshness, meat content, the origin of meat, aroma and appearance and the least important factors are product promotion and convenience, ecological aspect, appearance of packaging. Nemenyi post-hoc test and Demsar graph indicated the specification of factor evaluation differences (Figure 3).

3.4. Fish meat and meat products

The last object of research was fish meat, which is classified as a rarely purchased type of meat and meat products. The results of applied Chi-square test of independence ($p\text{-value} < 0.05$) showed statistically significant differences in the frequency of fish purchases depending on demographic variables, namely education, residence. Consumers with higher education and urban consumers buy more beef compared to others. Differences in frequency of fish purchase were not found for demographic characteristics., that gender, age, members in households, economic status and monthly income.

From the point of view of purchase places, consumers most prefer supermarkets and hypermarkets (74.4%) and local grocery stores (10.9%). In the process of deciding on the choice of place, consumers mainly consider distance from home, and assortment of fish meat products.

In research, we were also interested in monthly expenditure on fish meat products. Based on the results, we can state, that 50 % of respondents spend less than 10 euros and almost 40 % spend 11 - 20 euros per month on fish meat and meat products. Relatively low expenditures are determined by consumer perception of price and the results indicated that almost 50 % of consumers perceive price of fish meat and meat products as high, so the purchase frequency of fish is lower among Slovak consumers.

In addition, the consumer evaluated the importance of selected factors in the process of purchasing of fish meat and meat products. Based on the results of Friedman test (p -value <0.001) we identified statistically significant differences in the evaluation of factors and we can state, that the most important factors for purchasing of beef are quality, freshness, meat content, the origin of meat, aroma and appearance and the least important factors are product promotion and convenience, appearance of packaging. In the Figure 4 is shown Demsar graph which graphically shows the results of the Nemenyi post-hoc test and specifies the differences in the assessment of the factors determining the purchase of fish.

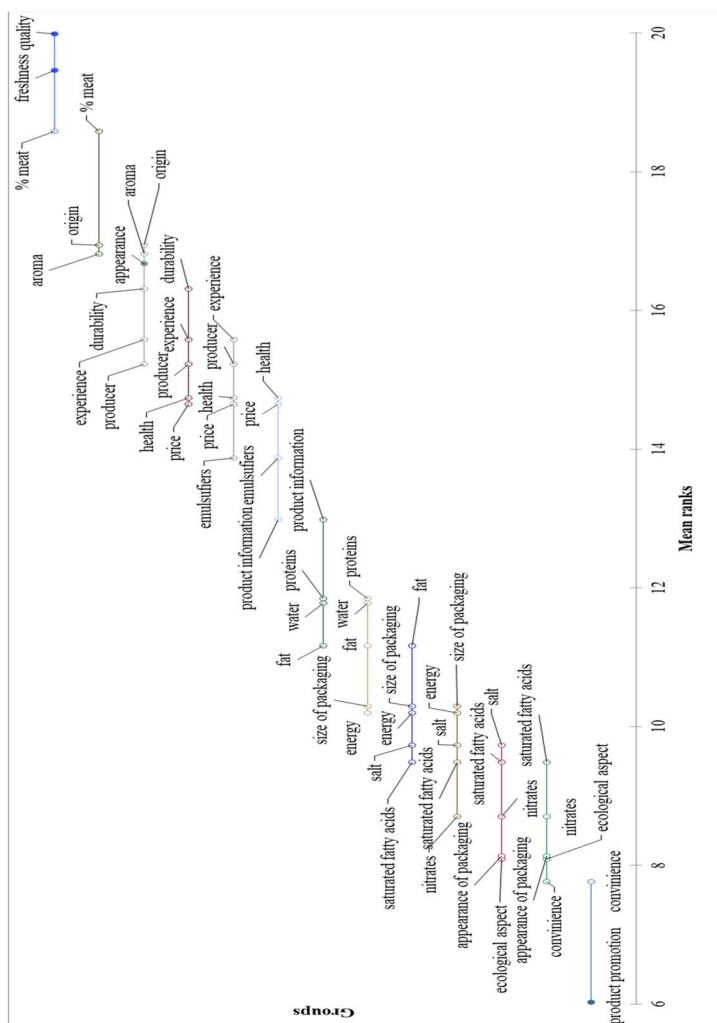


Figure 1 Factors affecting poultry meat and meat products purchase

Source: own research

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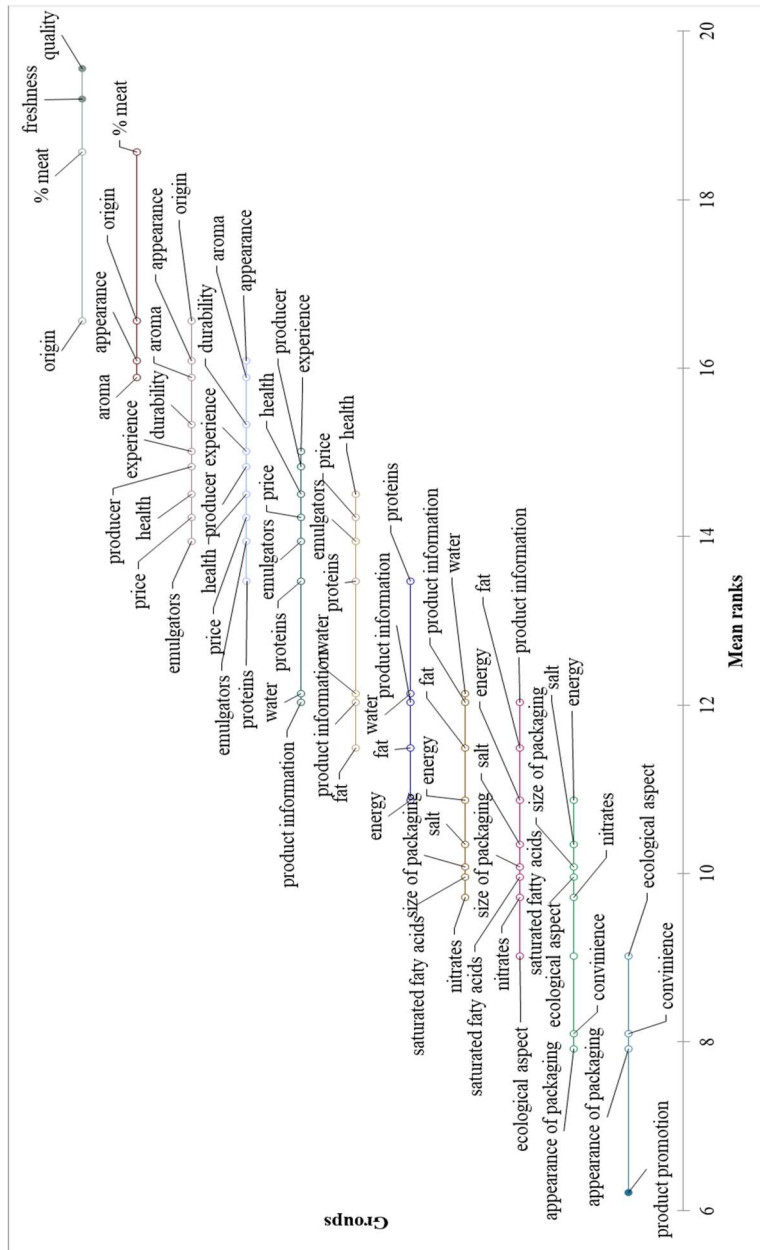


Figure 2 Factors affecting pork meat and meat products purchase

Source: own research

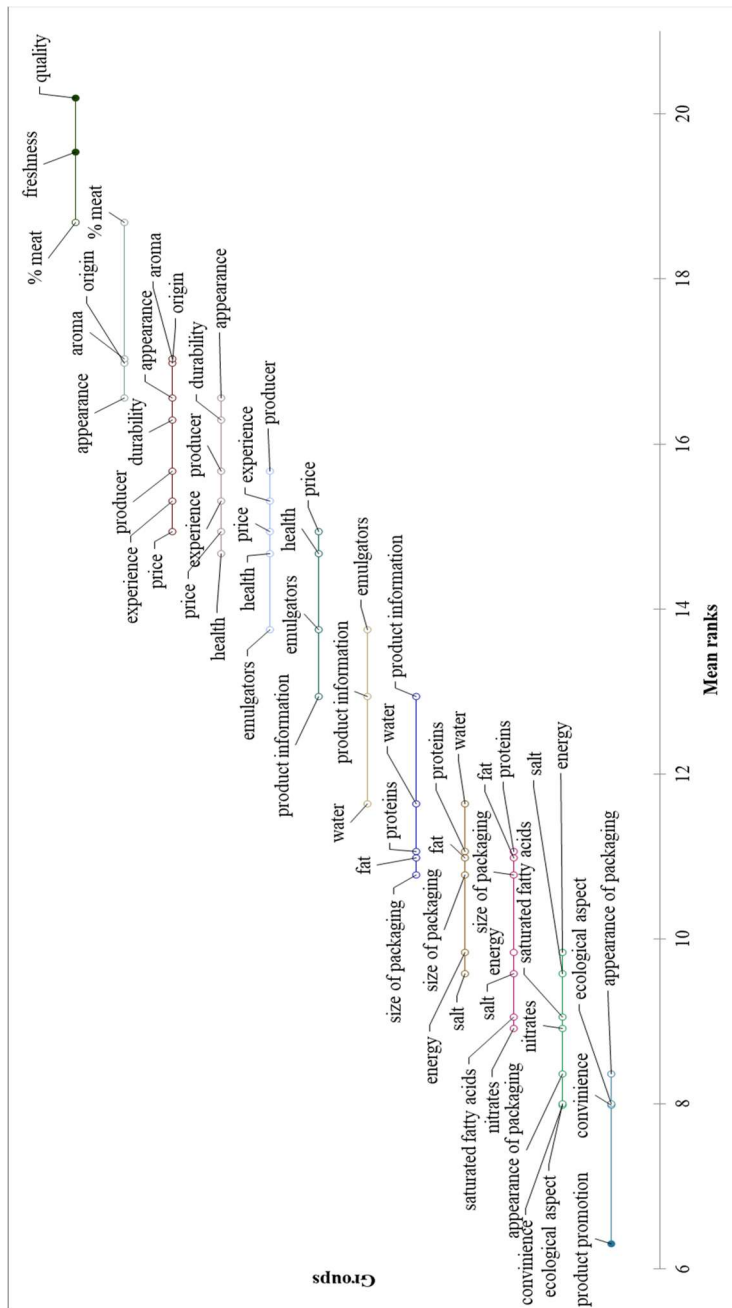


Figure 3 Factors affecting beef meat and meat products purchase
Source: own research

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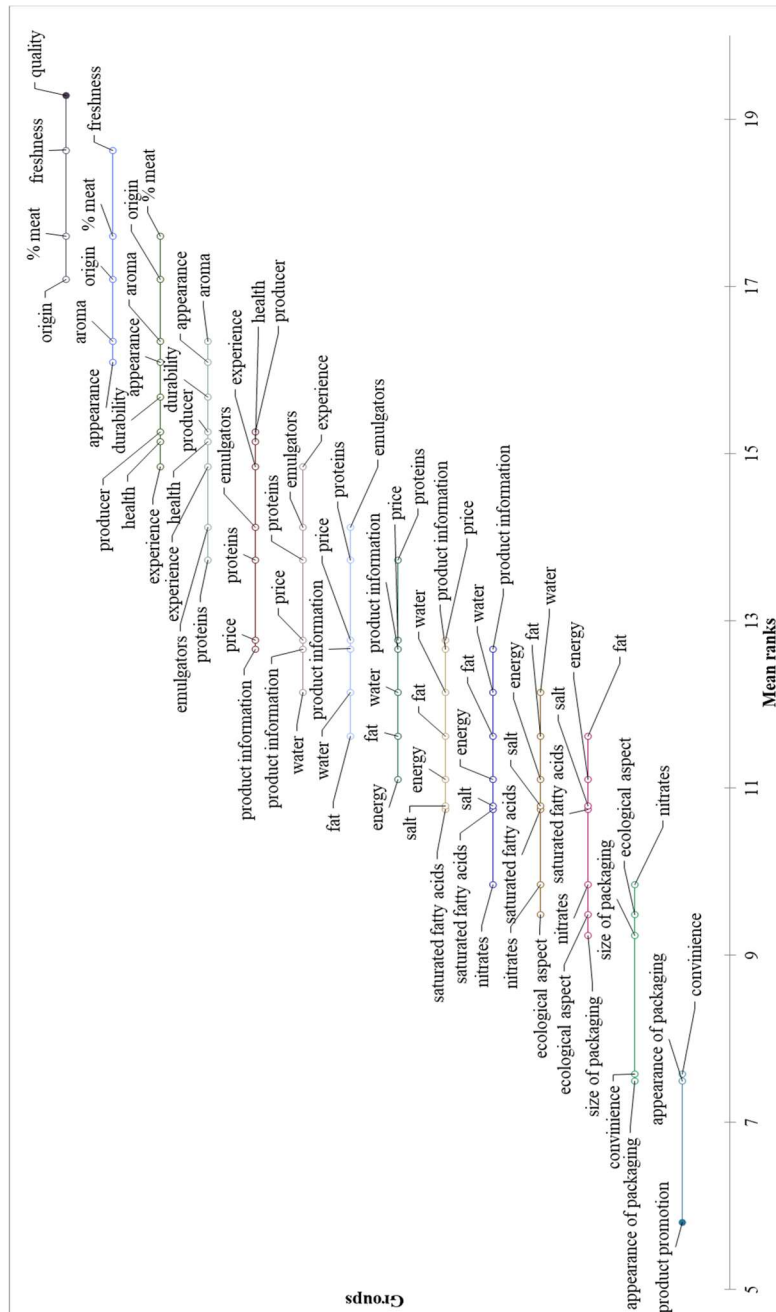


Figure 4 Factors affecting fish meat and meat products purchase
Source: own research

4. Discussion

Meat and meat products are classified as one of basic food groups which consumers often include in their diet. The results of a study conducted on a sample of 1,409 Slovak respondents showed that 51.8% of them purchase all four types of meat. The study analysed the purchasing behaviour of Slovak consumers, individually for poultry meat and meat products, pork meat and meat products, beef meat and meat products and fish meat and meat products. Based on the results, we can summarize the similarities and differences in the purchase intentions of individual types of meat. It is important to emphasize that poultry and pork are the most purchased and beef and fish are the least purchased. Based on the above, we identify the same purchase intentions for poultry and pork on the one hand and the same purchase intentions for fish and beef on the other hand. Poultry and pork are bought mainly because of the adequate price, which is also proven by the higher monthly expenditures of Slovak consumers. In addition to supermarkets, these types of meat are also purchased in local and specialized groceries. Beef and fish are purchased less because the price of the products is perceived to be higher. Total monthly expenditures are lower among consumers and they are mainly bought in supermarkets. From the point of view of the factors determining the purchase of meat, it is possible to state a similar behaviour.

The most important factor when buying all types of meat is quality, freshness, meat content and origin. The achieved results can be confirmed by other conducted studies focused on the purchasing behaviour of consumers. Purchasing meat and meat products belongs to habitual purchasing (Kubičková & Šenhartová, 2005). Balobog (2018) identified that the most preferred type of meat for purchases is poultry. Karli and Bilgic (2007) examined factors affecting the probability decision to purchase meat products and their levels of quantity demanded and results showed that most individual socio-demographic factors have an impact on the purchase of red meat. The study conducted by Balobog (2018) showed that gender, age, number of household size, number of employed household members, number of children and household income affect the beef purchasing behavior of consumers. In addition, Karli and Bilgic (2007) stated that households with higher education, fewer children and middle income prefer white meat over red. Balobog (2018) identified that for chicken, age is the only variable that significantly affect the decision of the consumers. In the context of the demographic variables, specifically age, Lee et al. (2020) found that poultry meat is the most purchased by the youngest cohort. Zhang et al. (2018) emphasizes that the amount of meat purchased depends on the household income, and if the household income is higher, the expenditure on meat will increase. Other studies are also dealt with the issue of the place of purchase of meat and meat products, as well as the factors of their choice. Balobog (2018) identified that consumers prefer to buy meat at supermarkets. The results of the study conducted by

Souček and Turčínková (2015) show that consumers consider price to be the most important factor when choosing a place to buy meat and meat products.

In this context, Kubičková and Šenhartová (2005) add that the place of purchase is also determined by the strength of consumers' habits and consumers prefer specialized grocery stores, butchers for meat purchases. In the context of purchasing behaviour Udomkun et al. (2018) found that consumer decisions related to the purchase of meat products are more often based on sensory factors such as color and texture in the mouth, as well as marketing factors. The study conducted by Predanocyoová et al. (2018) showed that the most important factors affecting meat purchases are the quality of meat, but also composition, freshness, price and country of origin.

5. Conclusion

Consumer study was focused on identifying purchase intentions of Slovak consumers on the meat market, individually for poultry, pork, beef and fish. The paper presents a comparative study focused on the examination of similar and different characteristics of purchase behaviour of consumers. The paper presents a comparative study focused on the investigation of similar and different characteristics of shopping behaviour. In general, it is possible to state, on the one hand, the same behaviour of consumers when buying poultry and pork, and on the other hand, the same behaviour of consumers when buying beef and fish.

The results of the survey are applicable in food companies in the meat industry in the creation of marketing strategies affecting purchase intentions of consumers. Results are also beneficial for scientific purposes, as study provide new insight to the issue of purchase intention on the meat market individually for poultry, pork, beef and fish and focus on the similarities and differences in the purchase behaviour. Moreover, study should be useful for consumers and policy makers. It is necessary to appeal to consumers to focus on adequate meat consumption with an emphasis on health and sustainability aspects and increase the frequency of purchasing beef and fish and decrease the frequency of purchasing pork.

However, there are some limitations of the paper. The key ones are the territoriality of the conducted study and application of self-reported measures related to purchase behaviour of Slovak consumers. Future research should be aimed at current trends on the meat market related to consumers health and sustainability issues in the process of purchasing of individual types of meat and also to conduct a comparative study aimed at attitudes of consumers and purchase intentions of consumers on meat market between different countries.

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