

FACTORS INFLUENCING SLOVAK CONSUMER'S ACTUAL BUYING BEHAVIOR TOWARDS FRESH VEGETABLE

Michaela Šugrová¹, Ludmila Nagyová², Filip Tkáč³, Erik Janšto⁴

Slovak University of Agriculture in Nitra^{1,2,3,4}

Department of Marketing and Trade^{1,2}

Department of Statistics and Operations Research³

Department of Informatics⁴

Trieda A. Hlinku 2, 949 76

Nitra, Slovak Republic

e-mail^{1,2,3,4}: michaela.sugrova@gmail.com, ludmilanagyova@hotmail.com,
fptkac@gmail.com, erikjansto@gmail.com

Abstract

The main objective of the submitted paper was to identify factors influencing the behaviour of Slovak consumers on the market with fresh vegetable. Primary data were obtained through a questionnaire survey, which was carried out on a randomly selected sample of 390 respondents in Slovakia. The questionnaire survey was conducted online in November and December 2017. The obtained data were analysed by using Excel program as well as the statistical programming language - R. For a deeper analysis of the collected data, we formulated several scientific assumptions. We verified their accuracy with the Chi-Square Test of Independence, Cramer's V Coefficient, Fisher's Test and Kruskal-Wallis Test. Based on our research we the conclusion is that consumers while buying fresh vegetable are most influenced by the freshness of vegetable, taste, maturity, quality as well as the general appearance of vegetable. Moreover, we found out that there exists dependence between attributes, which are the most important to respond to the purchase of vegetable (price, colour, taste, shape, size, smell, maturity, general appearance) and what is most attracted to the vegetable counter. Based on our research, we also proved dependence between the purchase of vegetable and respondent's place of residence as well as dependence between consumers' attitude towards organic products and preferences of origin. Finally, following the significance of selected factors, we examined the dependence of their perceptions on the socio-demographic characteristics of the respondents.

Keywords: *Consumers, Consumer Behavior, Factors Influencing Consumer Behavior, Fresh Vegetable, Slovak Republic*

JEL Classification: *M 31*

1 Introduction

The current modern consumer has other preferences, other eating habits, and lifestyle as it had been in the past decades. He is more interested in healthy eating, consumes more vegetable, and in addition, he is more interested in food origin and quality. According to Kádeková, Récky, Nagyová, Košičiarová, and Holienčinová (2017), the consumption of organic farming products is also increasing for Slovak consumers. Ragaert, Verbeke, Devlieghere, and Debever (2004); Dixon, Mullins, Wakefield, and Hill (2004); Rekhy and McConchie (2014); Pollard, Greenwood, Kirk, and Cade (2001); Carrroll, Samek, and Zepeda (2018) state that vegetable, due to its protective function against cancer, obesity, cardiovascular diseases as well as other chronic degenerative diseases, has a significant impact on the health of each of us. Consuming vegetable and a diet, which is rich in the vegetable is important for achieving and keeping good health (Geeremos, Verbeke & Kenhove, 2008). Abadias, Usall, Anguera, Solsona, and Viñas (2008) add that fresh vegetable is part of basic components of human food, and there is considerable evidence of the health and nutritional benefits of eating a vegetable. As state Storey and Anderson (2018), at least three servings of vegetable every day are recommended. Menozzi, Sogari, and Mora (2017) report that eating a vegetable is one of several ways to improve the worsening trend of healthy eating. According to Kearney (2008), the world's biggest problem is the inadequate consumption of vegetable even though the production of vegetable has been steadily rising in recent years. De Droog, Van Nee, Govers, and Buijzen (2017) state that current consumption of vegetable by children in most European countries does not correspond to the recommended daily allowances. Cox and Poelman (2015) state that the segmentation of vegetable consumers in the past included: taste preferences, lifestyle, consumer behaviour, gender, vegetable consumption, household characteristics, place of residence, children and children's age, education, occupation, and genetic variation in taste. Bongoni, Steenbekkers, Verkerk, Boekel, and Dekker (2013) argue that consumer's behaviour in relation to vegetable consumption can be influenced by various factors such as habits, sensory preferences, situational factors and health benefits. According to Saba, Moneta, Peparaio, Sinesio, Vassallo, and Paoletti (2018); Perez-Cueto et al. (2017); Van Stokkom, Blok, Van Kooten, De Graaf, and Stieger (2018); Paluchová, Berčík, and Horská (2017); Paluchová,

Berčík, and Neomániová (2016) among the important factors of consumer decision-making, not only about vegetable are sensory attributes such as appearance, freshness, odour, smell, texture, taste. According to Loebnitz and Grunert (2018), the shape is a key criterion for the definition of vegetable in terms of appearance, but also other visual criteria such as colour or size, to determine their impact on perceived risk to consumers. Moser, Raffaelli, and Thilmany-McFadden (2011) report that in most cases, the most important factor of consumer decision-making is the country of origin, and according to Sillani and Nassivera (2015) there is also the price included. Farragher, Wang, and Worsley (2016) in their study state that the consumption of vegetable affects demographic characteristics, nutritional knowledge, personal values and factors of personality. According to Dos Santos, Nogueira, Alvarez, and Perez-Cueta (2017), other factors include religion, pleasure, individual mood, and personal preferences. According to Ma, Blake, Barnes, Bell, and Liese (2018), the selection of vegetable is one of the important decision-making factors and it also includes the psychological aspects that explain the consumption of vegetable and the motivation of consumer's behaviour. According to the authors, women generally have a tendency to consume more vegetable than men. In addition, Baselice, Calantuoni, Lass, Nardone, and Stasi (2017); Sinesio, Saba, Pepparaio, Civitelli, Paoletti, and Moneta (2018) consider social interactions, time points, advertising, social and physical surroundings as important factors in the selection and consumption of vegetable. An important role in product decision-making and choice also plays consumer emotions which, according to Spinelli, Masi, Zoboli, Prescott, and Monteleone (2015), can be attributed to the intrinsic sensory characteristics of products, packaging, and brands. According to Koutsimanis, Getter, Behe, Harte, and Almenar (2012), the information stated currently on the packaging of fresh vegetable, which significantly affects consumer decision-making, is inadequate. Therefore, it is important to understand consumer perception, so that appropriate packaging of products can be designed. Increased consumption of vegetable according to Elsbernd, Reicks, Mann, Redden, Mykerezzi, and Vickers (2016); Keller, Motter, Motter, and Schwarzer (2018) is possible through behavioural economics strategies. These strategies use natural human behaviour to increase the number of consumers, who choose and consume healthier groceries.

2 Data and Methods

Primary data from our research were collected based on a questionnaire survey conducted in November and December 2017. 390 respondents from all over the Slovak Republic participated in the questionnaire survey. Respondents were

randomly selected by consumers of vegetable. The main objective of our research was to identify factors influencing the behaviour of Slovak consumers on the market with fresh vegetable. All obtained data were analysed and evaluated by using Excel and the statistical programming language - R. We used selected statistical methods for deeper data analysis. Chi-square Test of Independence we used to find out the dependence between the examined variables. We used Cramer's V Coefficient to determine the extent of the existing dependence between the variables. We also used the Fisher's Test to investigate the dependence in cases where Chi-square Test of Independence is inadequate with respect to the size of the selected sample. Kruskal-Wallis Test was used to examine dependence between the significance of selected factors and their perceptions according to the socio-demographic characteristics of the respondents. Moreover, we have formulated several scientific assumptions, which were verified by using selected statistical methods.

Assumption 1: We assume dependence between the purchase of vegetable and respondent's place of residence.

Assumption 2: We assume dependence between the frequency of buying vegetable and gender of respondents.

Assumption 3: We assume dependence between attributes, which are the most important to a response of vegetable purchasing (price, colour, taste, shape, size, smell, maturity, general appearance) and what is most attracted to the vegetable counter.

Assumption 4: We assume dependence between consumers' attitude towards organic products and preferences of origin.

Assumption 5: We assume influence of consumers' education on the perception of vegetable taste and health aspect.

Assumption 6: We assume influence of consumers' income on the perception of vegetable taste, advertising, product discount, health aspect and vegetable freshness.

Assumption 7: We assume influence of consumers' place of residence on the perception of vegetable taste, advertising and vegetable freshness.

3 Results and Discussion

Based on the results of the questionnaire survey, we can characterize a typical respondent as a woman aged 19-25, a student with the highest level of education at a secondary school with A level, living in one household with parents and siblings, with a monthly income of up to 400 €, and comes from Nitra region while living in the countryside. The detailed structure of the sample is shown in Figure 1.

Figure 1 Characteristics of respondents

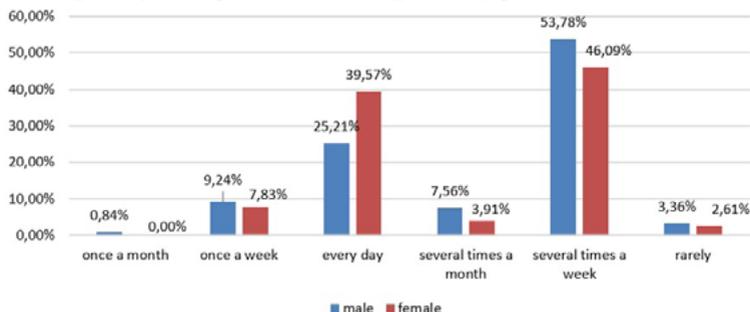
Gender	%	Age structure	%	Education	%	Economic activity	%
man	34.0	up to 18 years	4.3	primary education	4.9	student	48.0
women	66.0	19 – 25 years	53.1	secondary without A level	7.7	employed	30.0
		26 – 35 years	11.1	secondary with A level	66.6	unemployed	1.4
		36 – 45 years	8.6	higher education	20.8	self-employed	2.3
		46 – 55 years	6.6			entrepreneur	2.3
		56 – 65 years	7.1			retiree	15.1
		over 65 years	9.1			maternity leave	0.9
Income	%	Place of residence	%	Household structure	%	Region	%
up to 400 €	45.7	city	51.4	I live alone	8.9	Bratislava	3.1
401 – 600 €	18.9	counterside	48.6	I live with my parents	24.6	Trnava Nitra	23.1 50.9
601 – 800 €	13.4			I live with my parents and siblings	30.0	Trenčín Žilina	7.7 2.0
801 – 1000 €	7.7			I live with my wife/husband or partner without children	19.7	Banská Bystrica Prešov	9.1 3.4
over 1000 €	14.3			I live with my wife/husband or partner with children	16.9	Košice	0.6

Source: Own processing, 2018.

Respondents were asked how often they consume vegetable and when they consume vegetable the most during the day. In the following figure (Figure 2) we can see the frequency of vegetable consumption by respondent gender. Based on the results, we can say that most respondents consume vegetable several times

a week (53.78% of men and 46.09% of women). Every day, vegetable consume 25.21% of men and 39.57% of women. The minority of respondents said that they consume vegetable only once a month (0.84% of men and 0% of women). Most respondents (39.4%) consume vegetable for lunch and 29.7% for breakfast. We also found out that respondents consume vegetable at least between lunch and dinner (2.5%) and between breakfast and lunch (6.2%).

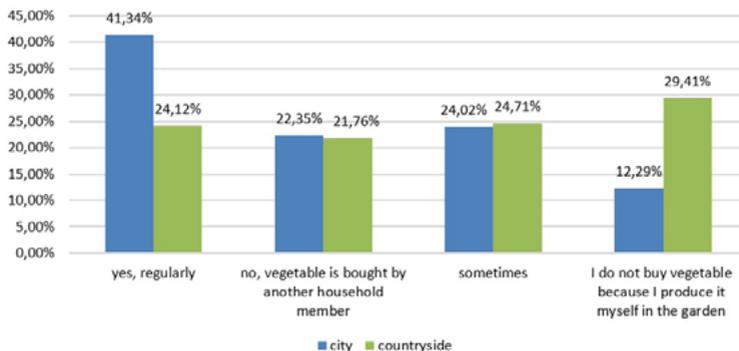
Figure 2 Frequency of vegetable consumption by gender



Source: Own processing, 2018.

In the following figure (Figure 3), we can see whether respondents buy vegetable and whether this is influenced by the respondent's place of residence. Based on the results, we can state that vegetable is regularly purchased by respondents coming from the city (41.34%), while these respondents do not grow vegetable in the garden at all (12.29%). Compared to respondents, who come from the countryside, we can see that they prefer vegetable from their own garden (29.41%) and only 24.12% of them buy vegetable regularly. In addition, we have formulated the assumption and considered whether there is a proven dependence between the purchase of vegetable and respondent's place of residence. Based on the Chi-square Test of Independence, we proved a dependence with $P\text{-value } 0.0001 < 0.05$. The next step was to verify the degree of dependence. Using the Cramer's V Coefficient we can conclude that the dependence can be considered as weak (0.2409).

Figure 3 Purchase of vegetable depending on the respondent's place of residence



Source: Own processing, 2018.

In our questionnaire survey, we have investigated how often respondents buy vegetable. Respondents buy vegetable the most several times a week (42.37% of men and 56.03% of women). The minority of respondents buy vegetables rarely (1.69% of men, 3.55% of women). We have formulated the scientific assumption, in which we wanted to demonstrate the dependence between the frequency of buying vegetable and the respondent's gender. We used the Chi-square Test of Independence, with P-value $0.1939 < 0.05$, confirming a zero hypothesis, and thus we did not find any dependence between the variables examined.

Regarding the factors that respondents are influenced by when they buy vegetable, in Figure 4 we presented complete results. Respondents on the 10 - point scale rated 26 factors that influence them when buying vegetable and ranging from 1 to 10 (1 - no impact, 10 - the maximum impact) reported that influenced them more or less. Based on the questionnaire, survey we found out that the respondents are most influenced by vegetable freshness (7.91 points), vegetable maturity (7.78 points), general appearance (7.59 points) and quality (7.49). They are at least influenced by the advertising of vegetable (2.47 points), brand (3.71) and BIO quality of vegetables (4.45). The price was rated by the respondents as a factor that has an average impact on the purchase of vegetable (5.77 points). The country of origin was also among the factors that were rated at a similar level as the price. As a result, consumers are primarily interested in quality factors than how expensive the vegetable is.

Figure 4 Factors influencing consumer's buying behaviour towards vegetable



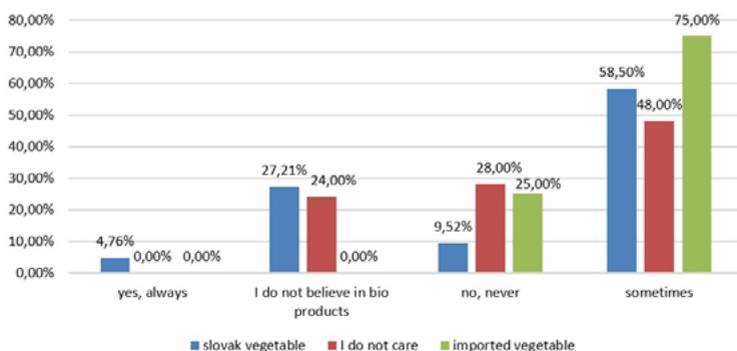
Source: Own processing, 2018.

We were also interested in, what specifically respondents attract, besides the need to buy vegetable, to the counter with vegetable the most (Figure 13). We found out that it is an especially fresh-looking vegetable (51.2%). Only 1% of respondents are interested in advertising of vegetable and only 2% of respondents are encouraged to eat a vegetable on the counter. 25.9% of respondents said they always buy vegetable depending on need. Moreover, we formulated scientific assumption and the purpose was to examine whether there exist a certain dependence between attributes, which are the most important to responding to the vegetable purchase (price, colour, taste, shape, size, smell, maturity, general appearance) and what is most attracted to the vegetable counter (freshly looking vegetable, discount, advertising, tasting, arrangement and way of vegetable storing on the counter, lighting of the counter with vegetable). Based on the results of Chi-square Test of Independence, we found out that the dependence between examined variables exists ($P\text{-value } 0.0059 < 0.05$). The next step was to verify the degree of dependence by the Cramer's V Coefficient. We can conclude that the dependence between the examined variables is weak (0.2391).

Consumption of organic products is currently very popular and the number of consumers of these products is increasing steadily (Kretter & Kádeková, 2013). Regarding Kádeková et al. (2017), more than a third of consumers buy organic fruit and vegetable. The following graph (Figure 5) shows that consumers who prefer home-grown vegetable buy organic products only a few times a year (58.50%), and always these products are bought only by 4.76% of respondents.

Respondents, who prefer imported vegetable, buy it occasionally (75%). In both cases, the organic vegetable is not trusted by a quarter of consumers. The results of our research, together with the results of the Kádeková et al. (2017) point out the fact that consumers are inclined to buy organic products, but, occasionally. Regarding Figure 5, we can see dependence between consumers' attitude towards organic products and preferences of origin. This is confirmed by using Fisher's Test with P-value $0.0249 < 0.05$.

Figure 5 Influence of the consumers' attitude towards organic products on preferences of origin



Source: Own processing, 2018.

Following the significance of selected factors, we examined the dependence of their perceptions on the socio-demographic characteristics of the respondents (education, income, place of residence). Applying the Kruskal-Wallis Test, we state that the following factors are influenced by education: the taste of vegetable (P-value 0.0459) and health aspect (P-value 0.0161). The respondent's income is influenced by the perception of the importance of taste of vegetable (P-value 0,0027), advertising (P-value 0,0338), product discounts (P-value 0,0402), health aspect (P-value 0,0049) and freshness of vegetable (P-value 0,0435). Regarding the respondent's place of residence, its influence was not proven by any factor.

4 Conclusion

The main objective of this article was to identify factors influencing the behaviour of Slovak consumers on the market with fresh vegetable. Based on the obtained data through the questionnaire survey, we found that most respondents consume vegetable several times a week (53.78% of men and 46.09% of women). Every

day, a vegetable is consumed only by 25.21% of men and 39.57% of women. Most respondents (39.4%) consume vegetable for lunch and at least between lunch and dinner (2.5%). The vegetable is regularly purchased by respondents coming from the city (41.34%), while those respondents are not likely to grow vegetable in the yard (12.29%). Respondents coming from countryside tend to produce vegetable in the yard (29.41%) and only 24.12% of them buy vegetable regularly. In addition, we have found that there is a proven dependence between the purchase of vegetable and respondent's place of residence. In our questionnaire survey, we examined how often respondents buy vegetable. Respondents buy vegetable the most several times a week (42.37% of men and 56.03% of women). Regarding the factors that influenced respondents when buying vegetable, we found out that respondents are most influenced by vegetable freshness, vegetable maturity, general appearance and quality when buying vegetable. At least, they are influenced by advertising of vegetable, brand, and by organic vegetable. We were also interested in, what specifically respondents attract, besides the need to buy vegetables, to the counter with vegetables the most. Based on the results, we can state that for more than 50% of respondents it is especially freshly-looking vegetable. Only 1% of respondents are interested in advertising of vegetable. Moreover, we have proven weakly dependence between attributes which are the most important to responding to the purchase of vegetable (price, colour, taste, shape, size, smell, maturity, general appearance) and what is most attracted to the vegetable counter (freshly looking vegetable, discount, advertising, tasting, arrangement and the way of vegetable storing on the counter, lighting of the counter with vegetable). The research results also point to the fact that consumers are positively inclined to buy organic products, but buy them only rarely. We also examined dependence between consumers' attitude towards organic products and preferences of origin. Based on our research, we also found out that the perception of some selected factors influencing the purchase of vegetable depends on socio-demographic indicators (income, education, and respondent's place of residence).

Acknowledgements

The paper is a part of the research project KEGA 038SPU-4/2016 "Using of new technologies and interdisciplinary associations in consumer studies "conducted at the Department of Marketing and Trade at the Faculty of Economics and Management of the Slovak University of Agriculture in Nitra.

References

1. ABADIAS, M. et al. (2008). Microbiological quality of fresh, minimally-processed fruit and vegetables, and sprouts from retail establishments. *International Journal of Food Microbiology*, 123(1-2), p. 121-129. doi: 10.1016/j.ijfood-micro.2007.12.013
2. BASELICE, A. (2017). Trends in EU consumer's attitude towards fresh-cut fruit and vegetables. *Food Quality and Preference*, 59, p. 87-96. doi: 10.1016/j.foodqual.2017.01.008
3. BONGONI, R. et al. (2013). Studying consumer behaviour related to the quality of food: A case on vegetable preparation affecting sensory and health attributes. *Trends in Food Science & Technology*, 33(2), p. 139-145. doi: 10.1016/j.tifs.2013.08.004
4. CARROLL, K. A., SAMEK, A., ZEPEDA, L. (2018). Food bundling as a health nudge: Investigating consumer fruit and vegetable selection using behavioural economics. *Appetite*, 121, p. 237-248. doi: 10.1016/j.appet.2017.11.082
5. COX, D. N., POELMAN, A. A. M. (2015). Towards greater vegetable consumption: Change the product or change the person? Case studies of two vegetable commodities. *Food Research International*, 69, p. 348-356. doi: 10.1016/j.foodres.2014.12.026
6. DIXON, H. et al. (2004). Encouraging the consumption of fruit and vegetables by older Australian: an experimental study. *Journal of Nutrition Education and Behavior*, 36(5), p. 245-249. doi: 10.1016/S1499-4046(06)60387-4
7. De DROOG, S. M. et al. (2007). Promoting toddlers' vegetable consumption through interactive reading and puppetry. *Appetite*, 116, p. 75-81. doi: 10.1016/j.appet.2017.04.022
8. Dos SANTOS, Q. et al. (2017). Consumption of fruits and vegetables among university students in Denmark. *International Journal of Gastronomy and Food Science*, 10, p. 1-6. doi: 10.1016/j.ijgfs.2017.08.001
9. ELSBERND, S. L. et al. (2016). Serving vegetables first: A strategy to increase vegetable consumption in elementary school cafeterias. *Appetite*, 96, p. 111-115. doi: 10.1016/j.appet.2015.09.001
10. FARRAGHER, T., WANG, W. C., WORSLEY, A. (2016). The associations of vegetable consumption with food mavenism, personal values, food knowledge and demographic factors. *Appetite*, 97, p. 29-36. doi: 10.1016/j.appet.2015.11.005
11. GEEREMOS, N., VERBEKE, W., KENHOVE, P. V. (2008). Health advertising to promote fruit and vegetable intake: Application of health-related motive

- segmentation. *Food Quality and Preference*, 19(5), p. 481-497. doi: 10.1016/j.foodqual.2008.02.004
12. KÁDEKOVÁ, Z. et al. (2017). Consumer's purchasing preferences towards organic food in Slovakia. *Potravinárstvo Slovak Journal of Food Sciences*, 11(1), p. 731-738. doi: 10.5219/846.
 13. KEARNEY, J. (2018). Food consumption trends and drivers. *Philosophical Transactions of the Royal Society B*, 365, p. 2793-2807. doi: 10.1098/rstb.2010.0149
 14. KELLER, J. et al. (2018). Augmenting fruit and vegetable consumption by an online intervention: Psychological mechanisms. *Appetite*, 120, p. 348-355. doi: 10.1016/j.appet.2017.09.019
 15. KOUTSIMANIS, G. et al. (2012). Influences of packaging attributes on consumer purchase decisions for fresh produce. *Appetite*, 59(2), p. 270-280. doi: 10.1016/j.appet.2012.05.012
 16. KRETTNER, A., KÁDEKOVÁ, Z. (2013). Eco marketing in agriculture and barriers to organic food sales. *Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie*, 59, (10), p. 394-401. doi: 10.1.1.869.3499.
 17. LOEBNITZ, N., GRUNERT, K. G. (2018). The impact of abnormally shaped vegetables on consumers' risk perception. *Food Quality and Preference*, 63, p. 80-87. doi: 10.1016/j.foodqual.2017.08.004
 18. MA, X. (2018). What does a person's eating identity add to environmental influences on fruit and vegetable intake? *Appetite*, 120, p. 130-135. doi: 10.1016/j.appet.2017.08.025
 19. MENOZZI, D., SOGARI, G., MORA, C. (2017). Understanding and modelling vegetables consumption among young adults. *LWT – Food Science and Technology*, 85, p. 327-333. doi: 10.1016/j.lwt.2017.02.002
 20. MOSER, R., RAFFAELLI, R., THILMANY-MCFADDEN, D. (2011). Consumer Preferences for Fruit and Vegetables with Credence-Based Attributes: A Review. *International Food and Agribusiness Management Review*, 14(2), p. 121-142.
 21. PALUCHOVÁ, J., BERČÍK, J., HORSKÁ, E. (2017). *The sense of smell*. In Sendra, E. & Carbonell-Barrachina, Á. A. (2017). *Sensory and aroma marketing*. Wageningen: Wageningen Academic Publishers.
 22. PALUCHOVÁ, J., BERČÍK, J., NEOMÁNIOVÁ, K. (2016). The atmosphere and its impact on consumer behaviour in food stores. *International Scientific Days. The Agri-Food Value Chain: Challenges for Natural Resources Management and Society*, p. 804-811. doi: 10.15414/isd2016.s10.05

23. PEREZ-CUETO, F. J. A. (2017). Danish adolescents like their vegetables fresh rather than frozen or canned. *International Journal of Gastronomy and Food Science*, 9, p. 29-33. doi: 10.1016/j.ijgfs.2017.05.003
24. POLLARD, J. et al. (2001). Lifestyle factors affecting fruit and vegetable consumption in the UK Women's Cohort Study. *Appetite*, 37(1), p. 71-79. doi: 10.1006/appe.2001.0415
25. RAGAERT, P. et al. (2004). Consumer perception and choice of minimally processed vegetables and packaged fruits. *Food Quality and Preference*, 15(3), p. 259-270. doi: 10.1016/S0950-3293(03)00066-1
26. REKHY, R., MCCONCHIE, R. (2014). Promoting consumption of fruit and vegetables for better health. Have campaigns delivered on the goals. *Appetite*, 79, p. 113-123. doi: 10.1016/j.appet.2014.04.012
27. SABA, A. et al. (2018). Towards a multi-dimensional concept of vegetable freshness from the consumer's perspective. *Food Quality and Preference*, 66, p. 1-12. doi: 10.1016/j.foodqual.2017.12.008
28. SILLANI, S., NASSIVERA, F. (2015). Consumer behavior in choice of minimally processed vegetables and implications for marketing strategies. *Trends in Food Science & Technology*, 46, p. 339-345. doi: 10.1016/j.tifs.2015.07.004
29. SINESIO, F. et al. (2018). Capturing consumer perception of vegetable freshness in a simulated real-life taste situation. *Food Research International*, 105, p. 764-771. doi: 10.1016/j.foodres.2017.11.073
30. SPINELLI, S. et al. (2015). Emotional responses to branded and unbranded foods. *Food Quality and Preference*, 42, p. 1-11. doi: 10.1016/j.foodqual.2014.12.009
31. STOREY, M., ANDERSON, P. (2018). Total fruit and vegetable consumption increases among consumers of frozen fruit and vegetables. *Nutrition*, 46, p. 115-121. doi: 10.1016/j.nut.2017.08.013
32. Van STOKKOM, V. L. et al. (2018). The role of smell, taste, flavour and texture cues in the identification of vegetables. *Appetite*, 121, p. 69-76. doi: 10.1016/j.appet.2017.10.039