

Received: 2020-10-03  
Accepted: 2020-12-16  
Online published: 2020-12-30  
DOI: <https://doi.org/10.15414/meraa.2020.06.02.72-79>



*Original Paper*

## **Consumers' motivation and purchasing behavior in selected shopping chain with grocery: a case study**

**Dana Országhová\*, Gabriela Petreková**

<sup>1</sup> Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Department of Mathematics, Nitra, Slovak Republic

### **ABSTRACT**

Food products are among the most frequently purchased goods, because they are part of the basic life necessities of every individual. In this paper, we focused on the shopping behavior of consumers who buy products in the shopping chain COOP Jednota. The main goal was the analysis of motivational and purchasing behavior of consumers and statistical evaluation of independence between observed features. We obtained data for the analysis by the method of questionnaire and we evaluated the answers of the respondents focused on four research questions. We applied  $\chi^2$ -test of independence to determine dependence between these statistical features: respondent's education, frequency of respondent's purchases, effect of advertising on purchasing of consumers, and amount of the monthly payment for the purchase. Results confirmed that there is dependence between the respondent's education and the frequency of purchases in the mentioned shopping chain. The dependence was not approved in the following three cases: between the respondent's education and the incentive effect of advertising on purchases; between the respondent's education and the monthly payment for the purchase, and between the frequency of purchases in the COOP Jednota chain and the motivational effect of advertising on the respondent's purchase.

**KEYWORDS:** questionnaire survey, purchasing behavior, COOP Jednota shopping chain,  $\chi^2$ - test of independence

**JEL CLASSIFICATION:** M20, C12

### **INTRODUCTION**

The four main marketing tools, product, price, place, and promotion, have become the basis of the marketing theory in examining consumer behavior and preferences when purchasing products and services. Retailers need to consider very carefully what goods and to whom they will offer, what pricing policy they will use when selling a product, where and how they will

\* Corresponding author: doc. RNDr. Dana Országhová, CSc., Department of Mathematics, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, e-mail: [dana.orszaghova@uniag.sk](mailto:dana.orszaghova@uniag.sk)

sell, and how they will motivate and attract consumers' interest in shopping using various types of promotion.

The food industry covers a wide area from the processing of agricultural products to the production of food products, which are then offered to consumers in the required quantity, range and quality. Food production and consumption is under constant control in order to properly assess the economic, financial, health and potential environmental consequences for the life of society [6].

As stated by Korauš [4], price is an important tool of the marketing mix, which as a direct tool brings the company a profit. For the consumer, the price is an important factor in the purchase and expresses how much the consumer is able or willing to pay for a certain tangible or intangible goods.

New trends in purchasing behavior include event marketing, which creates or mediates new experience for the buyer. Experience create different emotions in people, which influence their shopping behavior and can contribute to a positive perception of the product brand, but also of the company as a whole [9].

As Kunová [5] points out, during the purchase of food products, consumers observe various factories, and on this basis the following three groups can be characterized. The first group of consumers mainly monitors food prices and buys products during time of special offers. The second group includes consumers who buy delicacies of all kinds and do not look at their price and the amount of nutrients they contain. The third group of consumers concentrates on the nutritional and health factors of purchased food or require organic food.

The interest in buying organic food is associated with the health problems of consumers or with the trends of healthy lifestyle [13]. Consumers are interested in the special effects of substances that are contained in fruits and vegetables on human health [1]. The young generation of consumers forms their own habits of consuming and buying food and sellers must respond to them [10].

In this contribution, we focused on the shopping behavior of consumers who buy food in the COOP Jednota shopping chain. This sales network offers customers the opportunity to purchase daily necessities in one place and, in addition to food, also offers selected products from the drugstore and household goods. We know from the history of the company that it belongs to the oldest trading systems in the Slovak Republic. This company was founded in 1845 by Samuel Jurkovič as the first cooperative in Slovakia and was called the Farm Association. Later, in 1869, Samuel Ormis founded the first Food Association in Revúca, which was the predecessor of cooperative retail. Since then, the company has been continuously managed, has undergone many changes and continues to this day [11].

## **MATERIAL AND METHODS**

The main source of material for the paper was a questionnaire survey among respondents from Slovakia. The questionnaire survey was conducted in 2019 and was focused on consumers who buy in the shopping chain named COOP Jednota Slovensko. 220 respondents were contacted, either through online questionnaire on the Internet or in the printed form. The questionnaire contained 21 questions, of which 3 questions were identification questions.

Together, we analyzed the answers of respondents from 172 questionnaires. The answers show that 40% of respondents came from eastern Slovakia, 36% of respondents were from western Slovakia and 24% of respondents were from central Slovakia. We excluded respondents who do not buy in this shopping chain from further analyzes.

The obtained data from the questionnaire were sorted out and formulated hypotheses were verified by  $\chi^2$ - test of independence. This method is often used to evaluate data of conducted questionnaires and to determine the independence (or dependence) of selected features, based on a contingency table of examined characters.

The test statistics is given by

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - n'_{ij})^2}{n'_{ij}}$$

where  $n_{ij}$  indicates experimental frequencies,  $n'_{ij}$  indicates expected frequencies. We reject the null hypothesis at the chosen level of significance  $\alpha$  if the value of the test criterion exceeds the tabular critical value for the corresponding number of degrees of freedom  $k = (r - 1)(s - 1)$ .

The formula of the contingency coefficient is

$$C = \sqrt{\frac{\chi^2}{n + \chi^2}}$$

where  $n$  is the number of elements in the research sample [3], [8].

In our research we verified the following research questions, assuming a customer's purchase in the COOP Jednota chain:

Is there a relationship between selected statistical features?

1. Between respondent's education and the frequency of purchases?
2. Between respondent's education and the motivational effect of advertising on purchasing?
3. Between respondent's education and the amount of the monthly payment for the purchase?
4. Between the frequency of purchases and the motivational effect of advertising on the respondent's purchase?

The test results were processed using MS Excel tools.

## RESULTS

The first classification question was about the sex of the respondents and the results are graphically shown in Fig. 1. We see that women predominate in the research sample, which corresponds to the real situation that food purchases for the family are provided mainly by women and they have an overview of what food products and meals the family consumes almost every day.

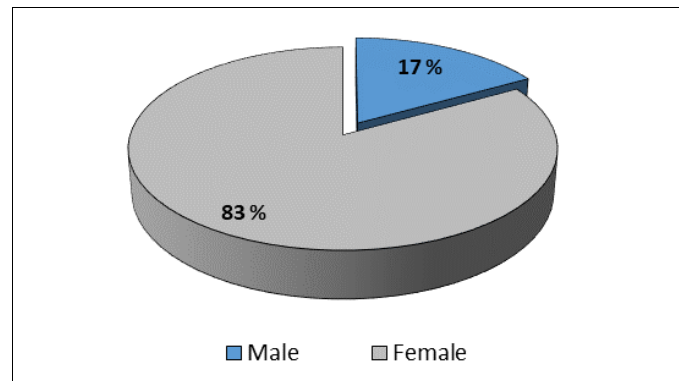


Figure 1 Distribution of respondents by sex  
Source: authors

In the second question, we obtained an overview of the respondents' education. The results show that in the research sample respondents with a university degree dominate (Fig. 2). This is also due to the fact that respondents who have experience with the usage of various digital tools answered the questionnaire via the Internet.

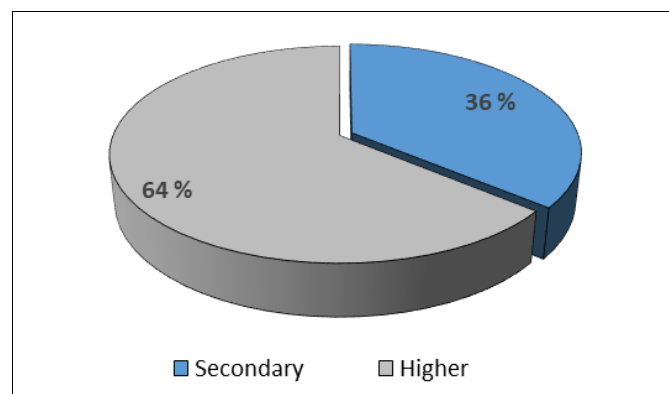


Figure 2 Distribution of respondents by education level  
Source: authors

In the questionnaire the respondents were asked to answer how often they shop in the COOP Jednota shopping chain. The analysis of answers in absolute terms is presented in Fig. 3. We can see that out of the research sample, most respondents shop daily (64.5%) in the mentioned supply chain.

A strategic location in the territory of Slovakia is important for a well-functioning and stable company. The company COOP Jednota has almost 2,200 shops and operations, which are located in cities, housing estates, but mainly in the countryside, where these shops are sometimes the only source where food and non-food goods can be bought. The COOP Jednota shopping chain offers customers interested in a healthy lifestyle a product line under the "BIO" and "Active Life" brands [10].

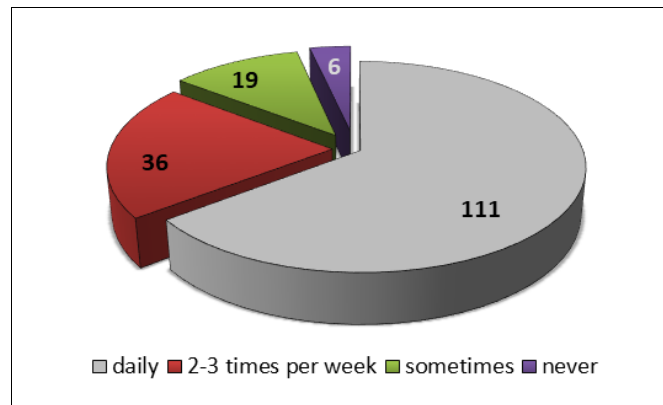


Figure 3 Frequency of respondents purchases in COOP Jednota  
Source: authors

Advertising is an important factor in gaining customers and effective way of purchase motivation. In the following question, respondents had to indicate whether their purchase was motivated by advertising. Advertising of the company COOP Jednota is actively broadcast on television, is humorous and appeals to consumers at the national level. From the presented analysis of the answers (Fig. 4) we see that 71 respondents (41.3%) declared a positive answer, which means that they were motivated by advertising to do a purchase. The product range is focused on Slovak manufacturers, which means that the COOP Jednota chain gains customers who return for shopping and buy preferred types of products and goods.

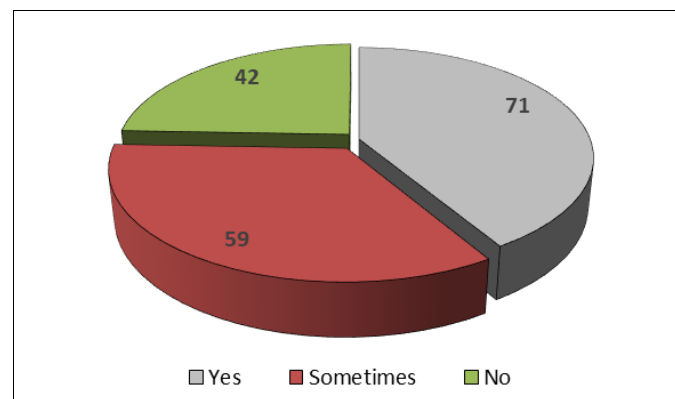


Figure 4 Advertising as a motivational factor of purchase  
Source: authors

All retailers want to motivate consumers' shopping activity by different means and ways. Next important motivating means for the purchase of consumers are stock prices and discounts, which subsequently affect the amount of the monthly payment.

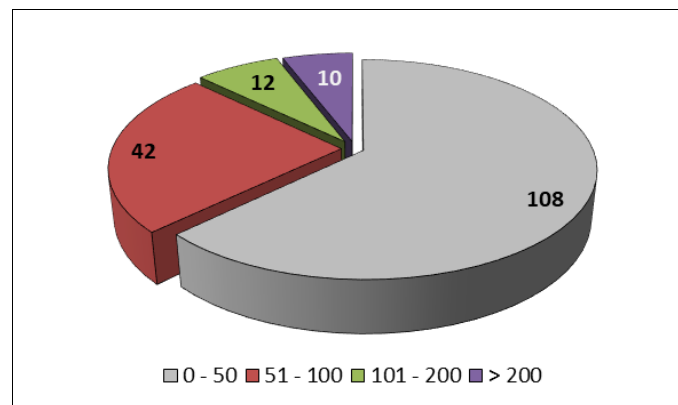


Figure 5 Distribution of respondents by the amount of payment per month in COOP Jednota  
Source: authors

The answers of the respondents to the question about the amount of payment per month in COOP Jednota are processed in Fig. 5. From the results follows that the respondents who pay monthly up to 50 euros in COOP Jednota (108 participants; 62.8%) have a clear predominance.

In the following section we present results of the dependency testing via  $\chi^2$  - test between these characters: Respondent's education, Frequency of purchases, Payment amount per month, and Motivation by advertising. We test the null hypothesis: the characters  $X$  and  $Y$  are independent, in the contrary to the alternative hypothesis: the characters  $X$  and  $Y$  are dependent. The results of hypotheses testing are summarized in Tab. 1.

Table 1 Results of  $\chi^2$ - test of independence, significance level  $\alpha = 0.05$

	Feature X	Feature Y	Test statistics	Critical value	Contingency coefficient
1	Respondent's education	Frequency of purchases	53.78*	12.59	0.49
2	Respondent's education	Motivation by advertising	9.02	9.49	-
3	Respondent's education	Payment per month	4.63	12.59	-
4	Frequency of purchases	Motivation by advertising	9.69	12.59	-

Source: authors

Based on the  $\chi^2$  - test of independence, we can make following conclusions:

In the first case, the existence of statistically significant dependence between the respondent's education and the frequency of purchases in the COOP Jednota chain was confirmed. Using the contingency coefficient, the strength of this dependence was determined as a moderate. In the second case, the dependence between respondent's education and the motivation for

shopping by advertising was not confirmed. In the third case, the dependence between the respondent's education and the amount of payment per month in the COOP Jednota chain was not approved. In the fourth case, there was not confirmed the dependence between the frequency of purchases in the COOP Jednota chain and the motivational effect of advertising on the respondent's purchase.

Presented results are an analysis of the shopping behavior of a part of the Slovak customers in 2019. A phenomenon of digitalization has impact on the life of the whole society and changes the character of practical routines of people. What are the shopping prospects in terms of the special situation during the spread of coronavirus in year 2020?

Digital tools support online shopping that is one of contemporary trends and creates new competitive advantages in the field of sale. Online shopping habits of consumers are the objective of research studies, e.g. finding the correlation between food-related lifestyle of consumers and online specialty food-buying behavior, and results help managers improve their marketing strategies on the website [12]. Laguna with co-authors [7] presented results of the surveys about food priorities during lockdown caused by coronavirus and found out that customers reduced the frequency of shopping, but no changes had occurred at the place of purchase. Knowing consumer behavior in different countries and regions helps marketing professionals to develop new business strategies for global markets; it would be appropriate to develop models that comprehensively express consumer behavior in different regions [2].

## CONCLUSIONS

Buying food is one of the activities that consumers do almost every day, and this process is influenced by various factors. In the paper we presented a part of results of a questionnaire survey, which was focused on the preferences of consumers who buy food products in the COOP Jednota shopping chain. In the research sample there was the predominance of women. In the context of education, 64% of respondents were with the higher education and 36% with the secondary education. As the main objective we investigated the existence of statistical dependence between pairs of chosen features. The statistical dependence between the respondent's education and the frequency of purchases was confirmed by  $\chi^2$ -test of independence. In three cases we obtained the same conclusion: there is not dependence between the respondent's education and the motivational impact of purchase advertising; there is not dependence between the respondent's education and the amount of payment per month in the COOP Jednota chain; and finally, there is not dependence between the frequency of purchases and the motivation of the purchase by advertising. Knowing the opinions of consumers is the important prerequisite for correct decisions of the company and the advantage in choosing a marketing strategy for product sales.

## ACKNOWLEDGEMENTS

The paper was supported by the project grant KEGA No. 029SPU-4/2018 *Digital educational applications in mathematics*.

**REFERENCES**

- [1] Durec, J., Kozelová, D., Matejková, E., Fikselová, M., & Jakobová, S. (2019). Fruit as a source of antioxidants and trends in its consumption. *Potravinárstvo Slovak Journal of Food Sciences*, 13, 1 (2019), pp. 251-257. doi: <https://doi.org/10.5219/1042>
- [2] Hamed, S., & El-Deeb, S. (2020). Cash on Delivery as a Determinant of E-Commerce Growth in Emerging Markets. *Journal of Global Marketing*, 1-24.
- [3] Chajdiak, J. (2013). *Analysis of questionnaire data*. STATIS: Bratislava. 108 p. (in Slovak).
- [4] Korauš, A. (2011). *Financial marketing*. Bratislava: Sprint dva (in Slovak).
- [5] Kunová, V. (2011). *Healthy nutrition - 2*. Grada (in Czech).
- [6] Lacková, A., & Karkalíková, M. (2010). *Commodity knowledge of foodstuffs*. EKONÓM (in Slovak).
- [7] Laguna, L., Fiszman, S., Puerta, P., Chaya, C., & Tárrega, A. (2020). The impact of COVID-19 lockdown on food priorities. Results from a preliminary study using social media and an online survey with Spanish consumers. *Food Quality and Preference*, 86, 104028.
- [8] Markechová, D., Tirpáková, A., & Stehlíková, B. (2011). *Basis of Statistics for Teachers*. The Constantine Philosopher University in Nitra, Edition Prírodovedec, no. 458, 405 p. (in Slovak).
- [9] Nagyová, L. et al. (2014). *Marketing*. Nitra: Slovak University of Agriculture in Nitra (in Slovak).
- [10] Országhová, D., & Flak, P. (2019). Biofood in nourishment of university students (case study). *University mathematics education as basis for innovations in science and technics*, pp. 42-50. Retrieved 2020-09-29 from <http://www.slpk/eldo/2019/zborniky/9788055220284/orszaghova-flak.pdf>
- [11] Petreková, G. (2019). *Marketing mix in the company COOP Jednota*. Slovak University of Agriculture in Nitra. Diploma thesis (in Slovak).
- [12] Rong-Da Liang, A., & Lim, W. M. (2011). Exploring the online buying behavior of specialty food shoppers. *International Journal of Hospitality Management*, 30(4), 855-865. doi: <https://doi.org/10.1016/j.ijhm.2011.01.006>
- [13] Ubrežiová, I., Kráľová, T., & Kozáková, J. (2019). Factors influencing interest of Slovak consumers' in organic dairy products. *Potravinárstvo Slovak Journal of Food Sciences*. 13,1 (2019), pp. 538-546. doi: <https://doi.org/10.5219/1137>