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## ENVIRONMENTAL ASPECTS OF CONSUMER SHOPPING BEHAVIOUR IN PACKAGING-FREE STORES

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**ABSTRACT:** One of the recent biggest environmental problems is pollution by excessive waste production. One of the ways to partially eliminate this problem is packaging-free stores. The paper focuses on analysing the environmental behaviour of individual generations of consumers concerning shopping in packaging-free stores. A questionnaire survey served as a source for data gathering. In the analysis, we applied the method of descriptive statistics and mathematical-statistical methods (Shapiro-Wilk W test, Kruskal Wallis test, Wilcoxon rank-sum test) to verify the difference between generational groups of consumers and their awareness of packaging-free stores. Another verified variables were the gender of respondents and their experience of shopping in a packaging-free store. The research results confirmed that packaging-free stores should focus their marketing activities on all generations of consumers and focus on finding appropriate ways to increase the level of interest of all age groups.

**KEYWORDS:** environmental management, packaging-free stores, consumer generations

## Introduction

Increasing consumer awareness of food supply chains' environmental and social aspects in developed countries leads to the opening of packaging-free stores that do not use disposable plastic packaging for their goods (Beitzen-Heineke et al., 2016). Over the last 5-10 years, there has been a very strong increase in the number of shops, jobs, and sales in the packaging-free business sector in Europe. The average turnover of packaging-free stores is around €170,000, although this varies from country to country. Long-term forecasts for this type of store in the European market predict at least €1.2 billion in 2030. In 2023, the forecast estimates 10,000 jobs in packaging-free stores across Europe. The estimated EU-wide packaging savings in 2023 due to packaging-free stores should be around 5,500 tonnes (Eunomia Research & Consulting Ltd., 2020).

The market for disposable plastic packaging and the use of packaging made of non-natural materials is constantly growing. The use of the packaging as an important tool in marketing is also growing (Piontek, 2019). Despite this fact, shopping in packaging-free stores and support for packaging-free products is gaining in popularity in Slovakia. Their major positive impact on the environment is that they limit the use of non-recyclable disposable plastic packaging. Due to consumers' growing environmental awareness, more and more of them are interested in protecting the environment and prefer healthy organic products that are safe and produced traditionally. Many consumers also limit the production of waste and the use of non-renewable resources (Hanus, 2020). The "precycling" rule governs a large number of packaging-free stores, so they try to prevent the generation of packaging waste. Shopping without packaging offers people the opportunity to purchase with the feeling that they know what they are buying because food does not have a packaging "filter". One of the essential functions of packaging is providing information about products, but it is possible to use a different way to inform customers about them. The principle of packaging-free stores is to acquire local suppliers, which guarantees high-quality products (Andreoni, 2017).

Packaging-free business is nowadays applied by retailers in a very different way, from supermarkets to small neighbourhood shops, for selling a variety of goods (Ingrao, 2020).

According to Fajdal (2015), all packaging-free stores operate on the same principle. Customers come to these stores with their containers or packaging (e.g. cans, glasses, boxes, or pouches) to which they put the number of raw materials and food, and they pay for them according to their weight. If the customer does not bring his/her container, it is possible to rent a container

or buy it directly in the store. Figure 1 shows the current territorial distribution of packaging-free stores in Slovakia (as of 2019), i.e., places where it is possible to use your reusable containers for shopping.

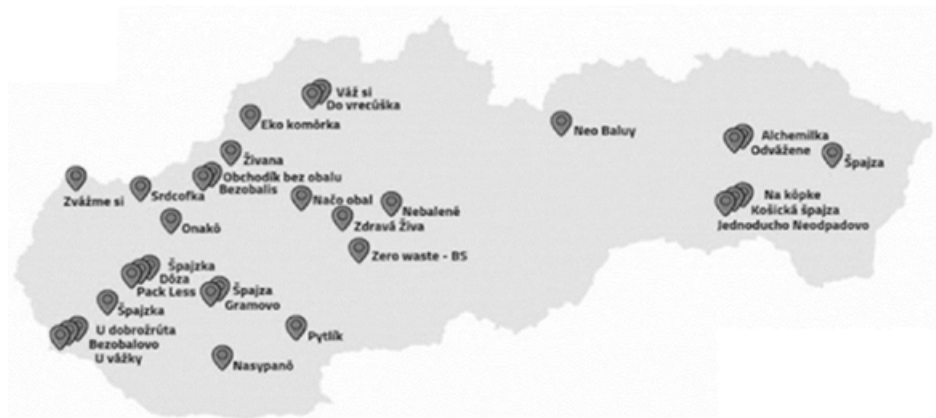


Figure 1. Map of packaging-free stores in Slovakia in 2019

Source: Ecohero.sk, 2019.

The key factor of commercial success or failure is mainly the knowledge of consumer behaviour of individual market segments. One of the main assumptions for the proper market segmentation is the knowledge of generations of consumers. This typology is used by marketers, especially concerning market segmentation. Each generation has its own characteristics and features of behaviour which is often associated with specific products. The issue of generations has become an integral part of modern marketing. If a company wants to acquire and address the right generation of customers with a new or existing product, it must know and correctly identify each generation of consumers. Kovalová et al. (2019) state that each generation of consumers has unique characteristics, and their perception and behaviour are different. Their research found that there are significant differences between consumer perception and behaviour of different generations in several areas. "Consumer behaviour cannot be understood separately, regardless of behaviour in general and without links to the micro and macrostructure of society. In addition to psychology, information about consumer behaviour is also provided by many other disciplines such as sociology, cultural anthropology, economics, and others (Vysekalová, 2011)". McCrindle (2014) defines a generation as a community born in the same period that is affected by the same events, trends, or developments. Different features and characteristics are typical for each generation. Differences between genera-

tions often cause mutual conflicts. The most common disputes are in employment relationships and family life. Given this, it is essential to understand individual generations' needs, know how to communicate properly, and be adequately motivated and led. We encounter disagreements in the timeline of each generation very often. Many authors deal with this issue. They follow the different data obtained from their research (Reeves, Oh, 2013).

The paper aims to analyse the environmental aspects of the behaviour of individual generations of Slovak consumers concerning shopping in packaging-free stores.

## Research methods

Although the professional literature is dominated by the generational division into 3 main and 5 transitional generations (some of them are overlapped in time), in the research, we used the age structure of respondents and divided them according to Wallace et al. (2014) into four-generation periods (table 1).

**Table 1.** Time period and characteristics of the generations

Name of the generation	Time period	Characteristics of the generation
Baby Boom Generation	1946 -1965	<ul style="list-style-type: none"> <li>• the generation born after World War II,</li> <li>• its development took place during dramatic changes (Burnett, 2010),</li> <li>• giving preference to domestic producers, craftsmen, entrepreneurs,</li> <li>• giving preference to their own experience or advice from family and friends concerning buying a new product,</li> <li>• showing loyalty to the products,</li> <li>• its characteristic feature is saving and thrift,</li> <li>• giving preference to traditional values,</li> <li>• the problem with the use of modern technologies (but they do not reject them).</li> </ul>
Generation X	1966-1976	<ul style="list-style-type: none"> <li>• loyalty – in case of satisfaction,</li> <li>• willingness to pay – in the case of quality or popular brand,</li> <li>• lifelong customer – if the company offers high-quality products and services,</li> <li>• communication – giving preference to a personal or telephone conversation,</li> <li>• considering purchases – until they find the best for them at an affordable price,</li> <li>• giving preference to the purchase of branded and quality products,</li> <li>• looking for meaning even where it is not at first sight,</li> <li>• openness to new things and the possibility to be influenced by the advice.</li> </ul>

Generation Y	1977-1995	<ul style="list-style-type: none"> <li>• optimism – the family shaped them with an optimistic education,</li> <li>• education – the quality of education in the home country or abroad,</li> <li>• investment in experience – investment in a product if the product is an experience,</li> <li>• self-confidence – in some cases more than appropriate and tolerant,</li> <li>• trends – a hobby to discover new trends,</li> <li>• criticism – towards advertising.</li> </ul>
Generation Z	1996-2012	<ul style="list-style-type: none"> <li>• day-to-day use of modern technology,</li> <li>• virtual communication – many contacts and relationships from social networks,</li> <li>• ability to cooperate – team cooperation,</li> <li>• ability to work and have fun,</li> <li>• independence – a high desire to be independent, but they often do not know it,</li> <li>• loss of privacy – sharing thoughts and opinions on social networks,</li> <li>• lack of skills and experience.</li> </ul>

Source: author’s work based on Wallace et al., 2014 and Burnett, 2010.

The respondents to the questionnaire survey were residents of the Prešov region. The total number of respondents was 271. Of these, 189 were women, representing a relative share of 69.74%, and 82 were men with a percentage of 30.26%. The research included 39 questions focused on the environmental aspect of the behaviour of individual generations of consumers in relation to shopping in packaging-free stores. Due to the limitation of the paper’s scope, we selected and analysed 5 questions from the total number.

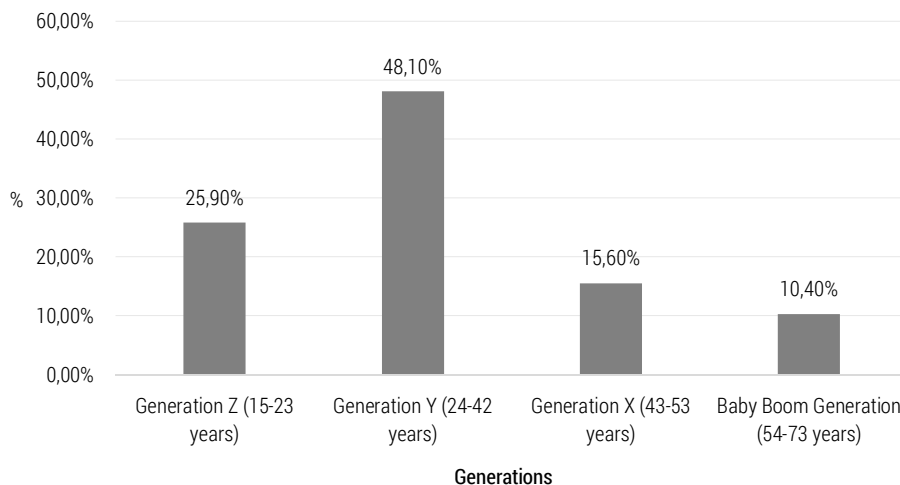


Figure 2. Percentage of respondents divided by generations

Source: author’s work.

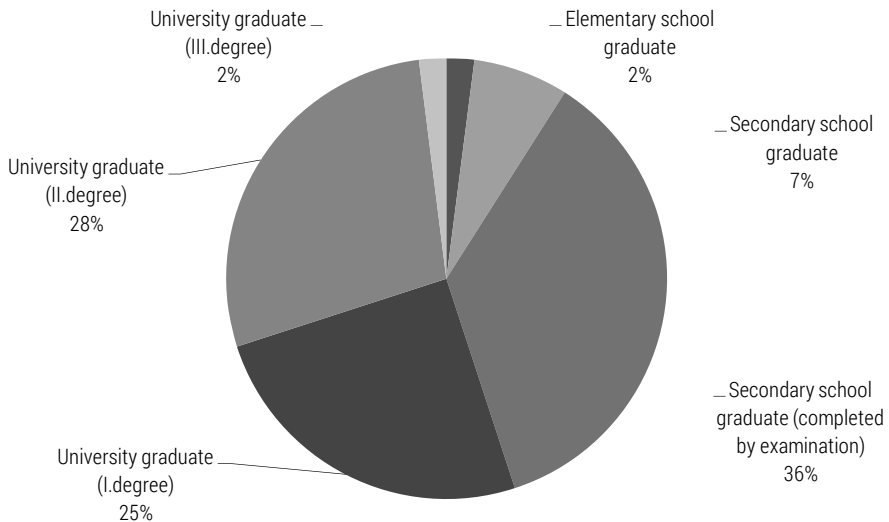
According to Wallace et al. (2014) (table 1), the respondents to the questionnaire survey were divided into four-generation periods (figure 2):

- Baby Boom Generation (1946-1965),
- Generation X (1966-1976),
- Generation Y (1977-1995),
- Generation Z (1996-2012).

The results of the questionnaire survey were processed by using descriptive statistics methods (percentage, figures). The hypotheses were tested by using difference analysis in the statistical software Gretl.

### Results of the research

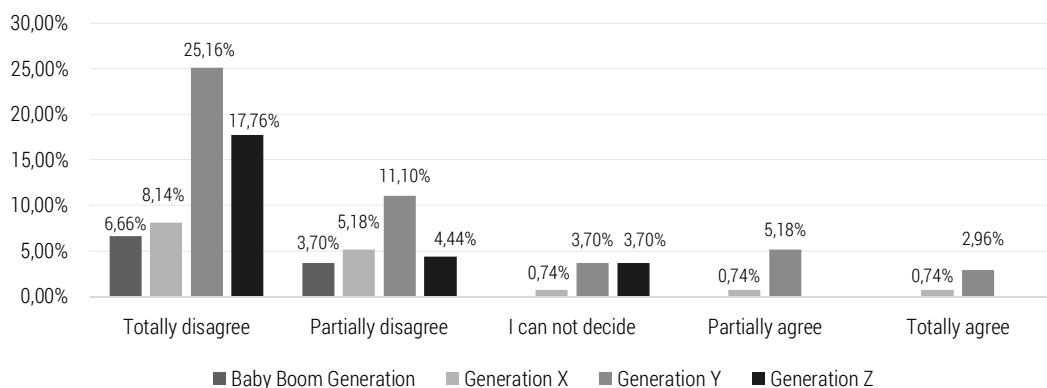
From the highest achieved education, the most numerous group consisted of respondents who achieved a complete secondary school education (completed by a school-leaving examination), followed by respondents possessing a university degree (I. and II. degree). Respondents with a university degree of the III. degree and basic education had the smallest percentage (figure 3). We believe that respondents' educational structure has a significant impact on the positive attitude or increased interest of respondents in environmental issues.



**Figure 3.** Percentage of respondents divided by the highest achieved education

Source: author's work.

A key aspect that significantly influences respondents' attitudes of all analysed generations could be their shopping experience in a packaging-free store. The answers show that most respondents have not had experience with shopping in a packaging-free store yet. The reason is the relatively small number of these shops and the lack of information or fear of something new and unknown. On the other hand, the percentage of respondents who have shopped in a packaging-free store at least once was less than 4%. A summary view of the respondents' opinion on the statement "I have already shopped at least once in a packaging-free store" is shown in figure 4.

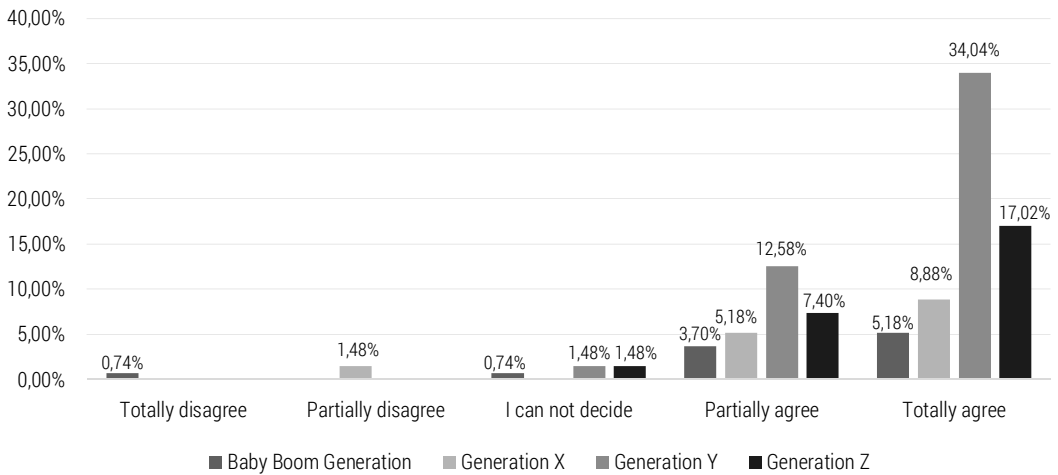


**Figure 4.** Graphic representation of the respondents' opinion on the statement: "I have already shopped at least once in a packaging-free store"

Source: author's work.

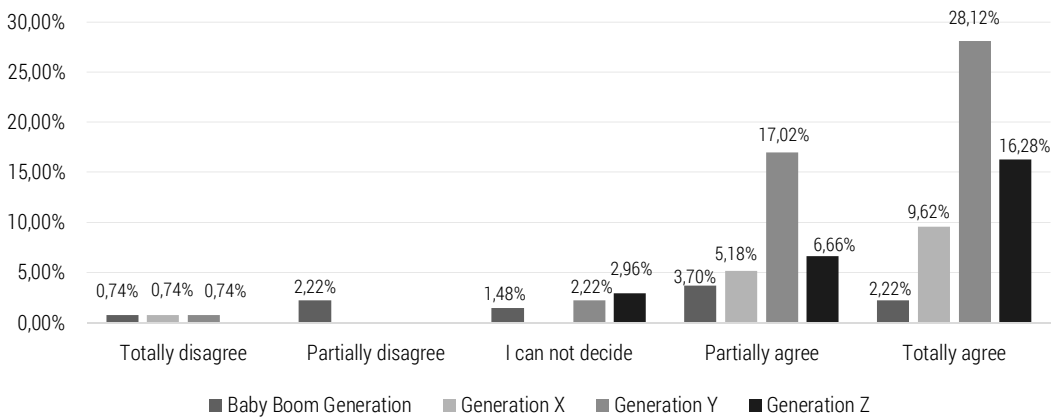
Respondents' attitudes towards the environment were examined through the statement "I care about the state of nature and the environment". The dominant group of respondents (in all analysed generations) expressed their agreement. The most numerous group that declared "Totally agree" consisted of Generation Y respondents (more than 34%). The structure of the responses is shown in figure 5.

Another analysed statement was: "I think that product packaging has a negative impact on the environment." An interesting finding was either a completely or a partially negative attitude of some respondents (except for Generation Z). From the respondents' attitudes, it can be stated that Generation Z (born in 1996-2012) is the most intensively confronted with the issue of environmental quality. They are also interested in the future condition of the environment. An overview of all responses is shown in figure 6.



**Figure 5.** Graphic representation of the respondents' opinion on the statement: "I care about the state of nature and the environment"

Source: author's work.



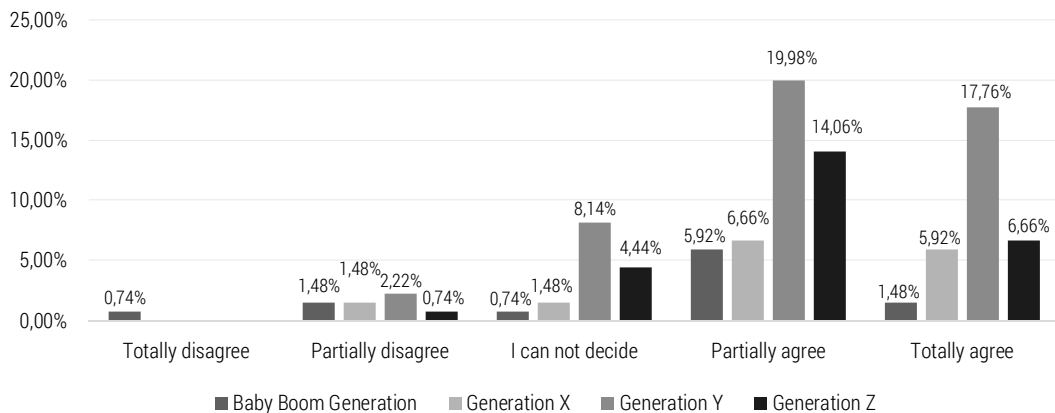
**Figure 6.** Graphic representation of the respondents' opinion on the statement: "I think that product packaging has a negative impact on the environment"

Source: author's work.

The respondents were also confronted with the statement: "By shopping in a packaging-free store, I try to contribute to improving the state of the environment." The response "Partially agree" dominated in all analysed generations. The option "Partially disagree" was also represented by all analysed generations, but in a relatively small proportion (5.92%). We assume that



respondents are not convinced that shopping in a packaging-free store makes a significant contribution to environmental protection. The attitudes of all respondents are shown in figure 7.



**Figure 7.** Graphic representation of the respondents' opinion on the statement: "By shopping in a packaging-free store, I try to contribute to the improvement of the state of the environment"

Source: author's work.

Knowledge of packaging-free stores in relation to the most important factors that motivate or influence consumers to visit "green" stores is a key factor influencing the identification of the "green consumers" segment. The description of generations is a key aspect for identifying the difference of consumers' "green activities" concerning their age, gender, or the highest level of education.

To verify the difference between:

- generational groups and their awareness of packaging-free stores,
- gender of respondents and their experience of shopping in a packaging-free store,
- we have defined the following hypotheses:
  - Hypothesis H1: There is a statistically significant difference between respondents' generational groups and their awareness of packaging-free stores.
  - Hypothesis H2: There is a statistically significant difference between the gender of respondents and their experience with shopping in a packaging-free store.

Each of the hypotheses was tested by the normality test (Shapiro-Wilk W test). In this test, the hypothesis H0 is rejected if the p-value is less than the

significance level of 0.05. In that case, the variable has no normal distribution (table 2).

**Table 2.** Shapiro-Wilk W test of normality

Shapiro-Wilk W test	
p-value	5.58803e-010
p-value < 0.05	H0 is rejected, so the variable has no normal distribution.

Source: author's work by using Gretl.

### **Hypothesis H1 testing:**

- H0: There is no statistically significant difference between respondents' generational groups and their awareness of packaging-free stores.
- H1: There is a statistically significant difference between respondents' generational groups and their awareness of packaging-free stores.

Based on the Kruskal Wallis test (table 3), we can conclude that the p-value is higher than the significance level of 0.05, and therefore we cannot reject H0. There is no statistically significant difference between the generational groups of respondents and their awareness of packaging-free stores.

**Table 3.** Kruskal-Wallis test for Hypothesis H1

Kruskal-Wallis test	
chi-squared	6.0462
p-value	0.1957
p-value > 0.05	We cannot reject H0, so there is no significant difference between the variables.

Source: author's work by using Gretl.

### **Hypothesis H2 testing:**

- H0: There is no statistically significant difference between the gender of the respondents and their experience with shopping in a packaging-free store.
- H1: There is a statistically significant difference between the respondents' gender and their shopping experience in a packaging-free store.

**Table 4.** Wilcoxon rank-sum test for Hypothesis H2

Wilcoxon rank-sum test	
p-value Women	2.9652e-008
p-value Men	6.45063e-015
p-value < 0.05	H0 is rejected, so there is a significant difference between the variables.

Source: author's work by using Gretl.

Based on the Wilcoxon rank-sum test (table 4), we can conclude that the p-value is lower than the significance level of 0.05, and therefore we reject H0. There is a statistically significant difference between the gender of the respondents and their experience with shopping in a packaging-free store.

## Conclusions

The paper focuses on analysing environmental aspects of the behaviour of individual generations of Slovak consumers regarding shopping in packaging-free stores. As of today, no similar study of this type has been made publicly available in Slovakia. Due to this fact, a quantitative survey (for the collection of primary data) was conducted in a questionnaire survey, which 271 respondents attended. Of the total number of respondents, 189 were women and 82 men. Gender distribution is because women mostly make the purchase of food, and thus, they have shown greater interest in this issue.

Concerning the obtained population sample, the research results relate mainly to the relatively younger age category (up to 35 years), called consumer Generation Y. We could state that the form of shopping with the added value of positive impact on the environment suits them. We assume that other age groups will join the purchase in packaging-free stores later because they are used to shopping in a certain way, and the behaviour change occurs rather gradually.

From a territorial point of view, the respondents were residents of the Prešov region. The obtained data may, however, be considered applicable also to consumers in other regions of Slovakia.

It would be appropriate to research a larger representative sample of the population with an equal representation of all age groups and Slovakia regions to obtain more representative and generalised results for the whole Slovakia. Furthermore, it would be appropriate to do more detailed research into consumer reactions to the various promotion forms of these shops.

It would be found out which marketing communication tools should be used more for stores of this type.

Based on the results of research hypothesis testing, we can state that packaging-free stores should focus their attention on all generational groups and focus on finding appropriate ways to increase all age groups' level of interest. The focus of packaging-free stores' marketing activities should be based on the idea of "green purchasing" with a tangible positive impact on the environment. An appropriate form of addressing all generations can help retailers gain a wide range of customers and improve the environment. The results confirm that green behaviour is a very complex part of consumers' behaviour (of different generations) of consumers and is still a black box of green marketing. From a broader perspective, we can say that one of the aspects that affect consumers shopping behaviour is the impact on the environment. From the future perspective, it would be appropriate to focus further research on revealing the factors influencing a green consumer in Slovakia.

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### **The contribution of the authors**

Martin Rovnak – 50% (conception, data analysis, interpretation, discussion).  
Lenka Stofejova – 30% (literature review, data analysis, language correction).  
Peter Adamisin – 10% (literature review, data collection, interpretation).  
Matus Bakon – 10% (literature review, data collection).

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