

The Behavior Aspects of Slovak Consumers in the Context of Sustainable Consumption

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Abstract: The Covid 19 pandemic had an impact on the behavior of individuals and households. The article first presents the general characteristics of the course of the Covid 19 pandemic in Slovakia, then explains the concept of sustainable consumption and its transfer to the sphere of behavior and practical activity of consumers during the Covid 19 pandemic. The starting point of the investigation is formulated research questions. The analysis of knowledge from empirical research is based on mathematical and statistical methods in order to answer research questions. From the data from the survey of various cities in Slovakia at the level of individuals and households, we identify four different clusters of consumers based on five groups of factors influencing their attitudes, which made it possible to define the main characteristics of consumers who have similar behavioral changes. Next, we illustrate which selected practices of sustainable consumption are most used by households and how the practices are related to the psychological and sociodemographic characteristics of consumers. The overall analysis shows that the structure of changes and actions of consumers, as well as the application of sustainable practices, differs in different social groups and also according to psychological and sociodemographic characteristics.

Keywords: sustainable consumption, consumer behavior, sustainable consumption practices, psychological characteristics, sociodemographic characteristics

JEL Classification: M31

1 Introduction

Understanding consumer behaviour is the essence of successful marketing orientation in the marketplace. The Covid 19 pandemic has affected several aspects of individual and household consumption. There is an urgent need to uncover which sustainable consumption values manifested themselves in consumers' consumption and practices during the Covid 19 pandemic. Different consumption practices are coming to the forefront in comparison to the pre-pandemic period, and the daily practices of each individual during the Covid 19 pandemic were confronted by multiple externalities (Sun, Liu, Zhao, 2019; Maciewski et al., 2020) that influence their sustainable consumption behaviours and attitudes during the Covid 19 crisis (Hroncová, 2011). According to the National Bank of Slovakia (Mráziková, 2020), the considerable uncertainty about the future development of the pandemic and its impact on the labour market and, consequently, on household incomes, forced them to be cautious in their spending and oriented them towards behaviour that was often contrary to normal (for example, the excessive growth in food purchases at the beginning of the Covid-19 pandemic, on the beginning of February in 2020 etc.) or to tendencies correlating to the fear of the corona virus (purchasing healthy food to strengthen the immune system, hand sanitisation, wearing of masks and observance of the prescribed two-metre distance between shoppers in the shop). At the same time, consumer dissatisfaction with the implementation of the state of emergency and lockdown has been growing as they reflect on what the current crisis means for them personally, but more importantly, what it means for their family, friends and society in general. There was a prevailing sense of worry regarding the economical scope of Covid-19 (Fetzer, T. et. Al., 2020, pp. 1-36) rather than the worry about one's health. In this sense, the crisis has had a significant real impact on consumer spending, especially if economic activity is threatened as a result of the quarantine measures.

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Consumers gradually learned to cope with and adapt to the "new normal" by taking into account the above-mentioned pandemic-related factors in their decision-making process and by introducing specific measures into their daily lives in their households to help reverse the negative trends triggered by the pandemic. We are therefore interested in identifying changes in consumption and applying everyday practices in terms of sustainable consumption. In terms of consumption changes we propose the following research question:

RQ1: What are the main characteristics of respondents who have similar behavioral patterns in the aftermath of the pandemic?

By addressing these research questions, this study provides insights into how different individual behaviours (Steg, Vlek, 2009 , p. 312) of consumers within the specific context of Covid 19 are influenced by the personal characteristics of consumers. Based on this framework, we provide insights on selected sustainable practices to which consumers are willing to devote their resources to the desired course of environmental change by answering the following research question.

RQ2: What are the psychological characteristics of people who use selected practices of sustainable consumption?

A fundamental challenge to achieving sustainable development is to change consumer behaviour as part of the fight against the current unsustainable consumption that has contributed to resource depletion, environmental pollution and climate change problems. As of today, the increased interest in environmental issues and the promotion of respect for the natural environment, especially by the media, weakens the influence of consumerism. Pro-environmental behaviour of consumers motivates manufacturing and commercial enterprises to offer products that, in accordance with the principles of sustainable development, limit the waste of raw materials, reduce global consumption by reducing the overuse of natural resources (Kita et al., 2017), motivates consumers to purchase socially responsible products (Dhandra, 2019), and contributes to increasing well-being (Sheth et al., 2011). Sustainability is, in general, not an easy choice for consumers. To select and identify the right product requires effort, and so does changing purchasing behaviour. Not to mention more money. These obstacles need to be gradually overcome in order to make sustainable consumption an easy choice for consumers.

2 Methods

The theoretical part of the paper was based on the reservoir of knowledge from scientific and professional literature, respectively specialized internet resources. The research part is focused on the identification of behavioural changes and maintenance practices and was based on the following methods: document study and content analysis and questionnaire survey.

The questionnaire survey was carried out at the peak of the second wave of the pandemic of Covid 19 from February to mid-March 2021. During this period, Slovakia was the world leader in the number of victims dying from Covid-19. This means that Slovakia had the highest number of deaths in relation to the size of the country (Oxford Martin school GSDL, 26.2.202 1). At this time, on 3 June 2021, one year has passed since the first coronavirus infection in Slovakia. At the same time, this period is characterised by events such as the state of emergency, the lockdown, the full-screen testing, the introduction of the Covid automat and the political crisis, which can also affect the more intense behaviour and habits of consumers. Covid-19 has influenced data collection in many ways. It was not possible to carry out data collection on the basis of individual personal interviews. For this reason, the empirical research was conducted in the form of a pre-arranged Structured Online Interview with each respondent. Furthermore, it was necessary to capture the changes in consumer behaviour and to try to maintain the data collection period in 534 households.

Table 1. Age composition of the base set

Age group	Number of respondents (in percent)
18 - 24 years	23.60
25 - 39 years	26.77
40 - 59 years	31.09
60 and over	18.54

Source: Own processing

The most numerous groups were respondents living in cities (see Table 2) with a population of up to 50,000.

Table 2 Distribution of respondents by residence

Size of residence	Number of respondents (in percent)
A village with up to 5,000 inhabitants	27.15
City with up to 50 000 inhabitants	30.72
The city of 50 000 to 200 000 inhabitants	18.35
A city with over 200 000 inhabitants	23.78

Source: Own processing

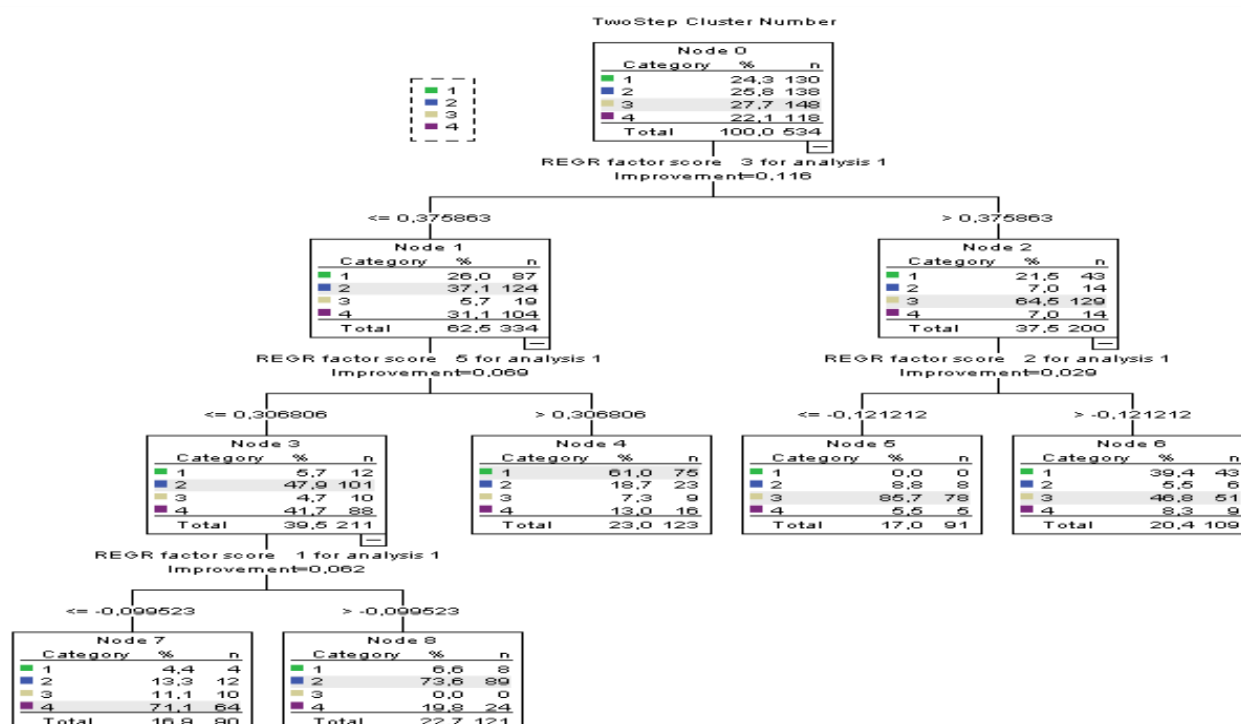
In order to highlight the practices of sustaining consumption, the results of the empirical research were processed by using the following methods: factor analysis, non-parametric Friedman test, post hoc analysis, non-parametric Mann-Whitney test, Kruskal-Wallis and Kruskal-Wallis tests, Spearman's correlation coefficient, deciding trees, CRT algorithm, sutin's graph (Scree plot), the Varimax method, the Two Step clustering method, etc.

3 Research results

To identify changes of consumption and apply everyday practices correlating to sustainable consumption and to them relating topics, we shall proceed using study questions.

Segmentation was used to evaluate the research question. Due to the strong correlation between the individual factors, factor analysis was first used to reduce the dimension of the task.

KMO and Bartlett's Test (p-value <0.01) showed that the correlation matrix is not really an identity matrix and thus it is appropriate to use factor analysis. Based on the debris chart (the Scree plot) five factors had been selected. The first factor contains items that could be summarized as "sustaining life", the second factor refers to "financial management", the third one to "public activities", the fourth one to "use of modern technological means" and the fifth one to "subjective feelings" (Figure 1). From the decision tree (Figure 1) structure can be seen that the third factor is the most significant (i.e., public activities), then fifth factor (i.e., subjective feelings), first factor (i.e., sustainable life) and the least significant is second factor (i.e., financial management).

Figure 1. Decision tree

Source: Kita, P., & Žambochová, M., & Maciejewski, G., & Čvirik, M., & Mazalánová, V.K. (2023). Changes in the Culture of

Each of the measures may be written as a linear combination of the newly emerged factors. This gives rise to five new values for each measurement (each respondent) corresponding to the membership of the newly emerged variables, which, unlike the original u_{ij} , are minimally correlated. These newly emerged variables were used as input variables for segmentation using cluster analysis. The Two Step clustering method was specifically used. This method showed as optimal the partitioning into four clusters. Subsequently, classification of object membership (i.e. individual respondents) to the relevant clusters was performed using decision trees, namely from the four clusters. Firstly, from the opinion point of view, in two ways, i.e., firstly, on the basis of the artificial factor variables generated in the factor analysis, and secondly, the explanatory variables entering the classification were the original variables entering the factor analysis, i.e., the answers to the individual questions about the extent to which the respondents' families had changed their behaviour due to the pandemic. The second level was the observed demographic information about the respondents. The third level was the respondent's moral characteristics, represented by subjective opinions about their person in terms of the levels observed.

From the structure of the tree, it shall be known, that statistically, the most important factor for inclusion in the cluster is the factor "willingness to give up personal freedoms", followed by "conservatism", then "functionality before appearance", and as the last important factor was found to be "compliance with deadlines".

From the structure of these Styrian decision trees, the characteristics of the representatives of the individual clusters emerge, from all Styrian points of view.

The 1st cluster is formed by:

- Respondents older than 60 years, or people aged up to 59 years, who feel their financial situation badly;
- respondents who are willing to give up some of their freedoms for the good of society and for whom appearance is more important than functionality and what happens here and now is also important to them; and respondents who, although not willing to give up their freedoms, like news and terms are taken very seriously
- the respondents who are not willing to give up their freedoms, but do not like novelty and do not take the term very seriously
- respondents who are less supportive of charities and cut back on big spending. clustering:

The second cluster is formed by:

- respondents younger than 24 years of age, who do not perceive their financial situation as bad, or men in aged 24-59, who do not perceive their financial situation as bad;
- respondents who are not willing to give up their freedoms, like news and deadlines do not take it very seriously;
- respondents who support charities less and do not reduce large expenditures, do not shop less often and care more about the environment.

- The third cluster is formed by:

- Women aged 25-59 years Living in municipalities with a population of up to 200 000 inhabitants who do not consider their financial situation to be bad;
- respondents who are willing to give up some of their freedoms for the good of society and for whom functionality is more important than appearance;
- respondents who do not support less charitable organisations, shop less often and do not think too much about the environment; & and similar respondents who do not shop less often but feel less deprived.

The fourth cluster is formed by:

- Women aged 25-59 Living in municipalities with a population of over 200,000 who do not feel their financial situation is bad;

-Respondents who are willing to give up some of their freedoms for the good of society and for whom it is more important to look after the future than functionality and to focus their thinking on the future; or respondents who, although they are not willing to give up their freedoms, do not like novelties and take deadlines very seriously;

-respondents who do not support less charitable organisations, do not shop less often and do not think too much about the environment and feel less hopeless.

It should be noted that the initial consumer behaviour in the identified clusters has been as follows:

a) pensioners and people of working age who feel their financial situation is bad have reduced their support for charities and cut back on large donations because of the pandemic. For the majority of these people, they are willing to give up some of their freedoms for the good of society and for whom it is more important to look than to function and to live for the present. They also distinguish themselves in terms of meeting deadlines and prioritising novelty;

b) respondents who see their financial situation as good, especially young people under 24, but also men of working age, have reduced their support for charities because of the pandemic. But they have not cut back on big expenditures, they have not cut back on purchases, but they have increased their concern for the environment. A characteristic feature of these respondents is the reluctance to give up their freedoms, a preference for novelty and a reluctance to meet strict deadlines;

c) women of working age living in municipalities of up to 200,000 inhabitants, who do not consider their financial situation to be bad, have reduced their purchases because of the pandemic, but not their support for charitable organisations, and have not increased their concern for the environment. If these changes have not been reflected in some countries, there has been a heightened fear of hopelessness. It is characteristic of these women that they are willing to give up some of their freedoms and that function is more important to them than appearance:

d) Women of working age Living in large cities of over 200,000 inhabitants who do not feel bad about their financial situation, have not restricted their behaviour too much because of the pandemic, do not support less charitable organisations, do not shop less often and do not think too much about the environment and do not feel less safe. These Women are willing to give up their freedoms for the good of society and are more concerned with appearance than function and are future focused in their thinking. If some of these women are not willing to give up their freedoms, they do not like novelty and they take deadlines very seriously.

RQ2: What are the psychological characteristics of people who adhere to selected practices of consumption maintenance?

To evaluate the research question, a non-parametric Mann-Whitney test was used to compare two independent samples.

People who like more likely to participate in a social aid campaign are the individuals, who prefer to be the centre of attention, who like to spend their free time actively, who like what is new, for whom appearance/style is important, for whom civil liberties are the most important and for whom they are not going to give them up in any situation

People who volunteer and help others are the ones who like to be the centre of attention, who like to spend their free time actively, who like what is new, for whom what they think is most important, for whom civil liberties are most important and for whom they are not going to give them up in any situation

In the interest of protecting the natural environment, people who like to be the centre of attention, who like to spend their free time actively, who like what is new, for whom it is most important, for whom they themselves think what is most important, for whom civil liberties are most important and for whom they are not going to give them up in any situation, who focus their thinking on the future, who believe that there are exceptions to the rules, are more likely to take action.

In organisations promoting the objectives of sustainable development, there are people who like to be the centre of attention, who like to spend their days away from home, who like to spend their free time actively, who like what is new, who like what they think is most important, for whom civil liberties are the most important and who are not going to give them up in any situation, who focus on the future in their thinking.

In their homes, people who install more ecological elements prefer to be the centre of attention, they prefer to spend their free time being active, they like innovations, think the most important is the look/style, the people for whom

civil liberties are most important and in no situation will they accept giving them up, in their mindset, they focus on the future.

The products and services of companies, which put a lot of emphasis on the environment, who prefer to spend their time away from their home, who spend their free time staying active, who like new innovations, who prefer the appearance/style, people, for whom the civil liberties are of utmost importance are not willing to give them up under any circumstances and people who believe that there always shall be exceptions to rules.

Thrifty clothes and other goods are more likely to be purchased by people who prefer to spend time away from their home, who spend their free time being active, who like new innovations and believe there always shall be exceptions from the rules.

Broken things are more likely to be fixed or left to be fixed by people who believe that there are always exceptions to the rules.

Good and unnecessary things are given to charities more by people who like to be the centre of attention, who like to spend their free time actively, for whom appearance/style is most important, for whom civil liberties are most important and who are not going to give them up in any situation.

Electricity and gas are more likely to be saved by people who prefer to spend their free time actively, for whom civil liberties are the most important, and for whom they are not going to give them up in any situation.

Water is more likely to be saved by people who prefer to spend their free time actively, for whom civil liberties are the most important and for whom they are not going to give them up in any situation.

People who are likely to behave so as not to pollute the environment, are the people who the centre of attention, who prefer to spend their free time actively, who try to meet all the deadlines.

In their home, a more healthy lifestyle is promoted by people who spend more often than not spend their time outside of their home, who spend their free time actively, they like innovations, they like what they think is most important, civil liberties are most important to them and they are not going to give them up in any situation, they focus on the future in their thinking, they believe that there are always exceptions to the rules.

Waste is more sorted and recycled by people who like to be the centre of attention, who like to spend their free time actively, who try to meet all the deadlines.

Not wasting food is more sought after by people who like to be the centre of attention, who prefer to spend their free time actively, for whom appearance/style is the most important thing, who believe that there are exceptions to the rules, who try to meet all the deadlines.

Limiting consumption through the premeditated purchase of goods and services that are really needed is more easily done by people who like to be the centre of attention, who prefer to spend their leisure time actively, who try to meet all deadlines.

In elections, people who vote more for candidates who declare their support for the weaker and poorer social groups and their concern for the natural environment, are people who prefer to spend their days actively, for whom civil liberties are the most important and who do not intend to lead them in any situation, who try to meet all the deadlines.

With the help of monetary donations, different types of humanitarian organisations are more supported by of people who like to be the centre of attention, who like to spend their free time actively, who like to be new, for whom appearance/style is the most important, for whom civil liberties are the most important and for whom they are not going to give them up in any situation.

The formulated research questions with the use of literary sources and research methods have strengthened the development of the framework of sustainable consumption in the context of the Covid 19 crisis and have significantly enriched and expanded the knowledge about the behaviour of Slovak consumers. The segmentation carried out in this volume offers two areas of opportunity to:

1. a better understanding of consumer behaviour during the Covid-19 crisis and the characteristics of consumers for targeting consumer practices that were strengthened by the pandemic and that were already in use before the emergence of Covid-19, in particular in food consumption, but also in the areas of saving electricity and gas, water, environmental protection and waste sorting.

2. the development of sustainable consumption practices that require urgent attention, such as involvement in organisations promoting sustainable development goals, but also in social aid campaigns in which consumer activity is lower.

The differences within the clusters also indicate important differences between consumers that can be useful for sustainable marketing communication and defining the offer by business managers. Knowledge of the characteristics of customers and the context in which they evolve makes it easier to influence their behaviour and decision-making.

The practical application of these results is important in targeting different consumer groups and promoting sustainable practices. This is particularly important as targeted solutions are sought to help consumers make more sustainable consumption choices in the context of the European Union's call for a European Green Deal, which will improve the quality and health of citizens and future generations by promoting more sustainable food consumption and healthy eating.⁴

4 Conclusions

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