

CONSUMERS TOWARDS SUSTAINABLE FOOD CONSUMPTION

KONSUMENCI WOBEC ZRÓWNOWAŻONEJ KONSUMPCJI ŻYWNOŚCI

Grzegorz Maciejewski, PhD, Assoc. Prof.

University of Economics, Katowice, Faculty of Economics, Department of Market and Consumption,

Poland, ul. 1-go Maja 50, 40-287 Katowice

grzegorz.maciejewski@ue.katowice.pl • ORCID: 0000-0002-1318-0747

DOI: 10.2478/minib-2020-0014

ABSTRACT

The progressive and unprecedented growth of the Earth's population and the shrinking of the planet's natural resources make it necessary to look at contemporary consumption from the point of sustainable development goals. The purpose of the paper is to characterise consumers' attitude towards the idea of sustainable food consumption, which manifests itself in declared undertaking of sustainable behaviours both on the market and in households. The research employed the exploratory survey technique (direct survey) on a sample of 900 consumers from Poland and Slovakia. The most common declared sustainable behaviours include: avoiding overconsumption, monitoring healthy eating, as well as sorting and recycling of waste. On the other hand, the customers of both countries should be more strongly encouraged to reduce the consumption of water, electricity and natural gas when preparing meals. Less than half of all respondents declared such behaviour.

Key consumer behaviour, sustainable consumption, food market, marketing, Poland, Slovakia

ABSTRAKT

Postępujący i niespotykany dotąd przyrost ludności Ziemi oraz kurczenie się zasobów naturalnych planety powodują konieczność spojrzenia na współczesną konsumpcję z punktu widzenia celów zrównoważonego rozwoju. Celem artykułu jest scharakteryzowanie stosunku konsumentów do idei zrównoważonej konsumpcji żywności, który przejawia się m.in. w deklarowanym podejmowaniu przez nich zachowań zrównoważonych zarówno na rynku, jak i w gospodarstwach domowych. Badania przeprowadzono techniką ankiety rozdawanej (bezpośredniej) na próbie 900 konsumentów z Polski i Słowacji. Badani najczęściej deklarowali podejmowanie zachowań zrównoważonych takich jak: unikanie nadkonsumpcji, troska o zdrowe odżywianie, a także segregowanie i recykling odpadów. W obu krajach należy natomiast bardziej zdecydowanie zachęcać konsumentów, by podczas przygotowania posiłków ograniczali zużycie wody, energii elektrycznej i gazu. Zachowania takie deklarowała bowiem niespełna połowa ogółu badanych.

Słowa kluczowe: zachowania konsumentów, zrównoważona konsumpcja, rynek żywności, marketing, Polska, Słowacja

JEL: D12, D91, M31, Q56

Introduction

The concept of sustainable consumption has been known in economics for some time. It is a key category of consumer utility theory. However, due to the soaring population growth on a global scale and dwindling planet's resources, there is the problem of long-term sustainability of consumption. An important issue is also the balance between the consumption potential of current and future generations, related to the issue of their access to resources consumed and used in consumption processes (Kiełczewski, 2007). It should therefore come as no surprise that sustainable consumption, including sustainable food consumption, has become the focus of economists in this century.

The paper aims at presenting consumers' attitude to the concept of sustainable food consumption by identifying their behaviours on the market and in households. The paper assumes that consumers take a positive view of the concept of sustainable consumption when they operate on the market and in their households in a sustainable way (or at least declare such behaviour), *i.e.* they avoid excessive consumption, food waste, consume organic food and ethical products, and also responsibly manage resources (water, electricity, natural gas) and post-consumer waste.

This is a research paper and is organised as follows: the second section carries out a brief literature review to define the issue of sustainable development and to relate it to the idea of sustainable consumption and sustainable behaviours. The third section describes the source materials of the paper and provides the details of how the study and data analysis were conducted. The fourth section presents the results obtained, referring them to other research in this field. The paper ends with the conclusions section, in which the main outcomes from the analyses are presented. It also indicates the limitations of the study described.

The conclusions of the presented material do not deliver exhaustive insights into the topic taken up, but they can be considered as a voice in the discussion on the development of research and analysis regarding consumer attitudes and behaviours towards the idea of sustainable consumption, as well as the marketing strategies of enterprises targeting their food offer at contemporary consumers.

Literature review

Regarding economics as the science of rational use of resources that are in short supply and have an alternative use (Sowell, 2014), one can notice the interrelationship of sustainable consumption with the economy. In particular, such a connection is visible with such its subdisciplines as environmental economics, ecological economics, sharing economy, as well as the sustainable development economics, which has clearly been coming into shape in the last twenty years (Zalega, 2016; Zrałek, 2018). There are also clear links between sustainable consumption and management sciences, especially marketing, including sustainable, ecological and social

marketing (Arunachalam, Kumar, 2018; Lutz, Newlands, 2018; Maciejewski et al., 2019).

Sustainable consumption is at the core of the definition of sustainable development (Kramer, 2011, p. 7), which is described in the UN documents (2019) as development that meets the basic needs of all people and preserves, protects and restores the health and integrity of the Earth's ecosystem, without exceeding the long-term limits of the planet's ecosystem capacity. The definition is based on two concepts: the concept of needs and the concept of restrictions imposed by the ability of the natural environment to meet current and future needs. Therefore, sustainable consumption means the use of material goods and services that allows consumers to meet basic needs and achieve a higher quality of life, while minimising the use of natural resources, toxic and environmentally harmful materials which arise at all stages of production and, at the same time, not limiting the rights of future generations to such consumption (NME, 1994).

In the light of the definitions adopted, a group of consumer behaviours can be identified, which can be described as sustainable. They can be observed both on the market and in the household. Following Zralek (2018, p. 64), sustainable market behaviours consist of purchasing organic products, purchasing ethical (socially responsible) products, and avoiding waste. The latter can also be included in sustainable household behaviours. In addition, sustainable household behaviours also combine deconsumption, collaborative (shared consumption) and post-consumer waste disposal.

Consumers who behave in a sustainable way adopt positive attitudes towards sustainable consumption and its goals (Annunziata, Agovino, Mariani, 2019). Therefore, it is important that the largest possible proportion of societies adopts and begins to achieve the goals of sustainable development, in the awareness that the Earth in their hands has not been inherited from their ancestors but borrowed from future generations. This issue is particularly important when it comes to consumption, food consumption in particular (Aertsens, Verbeke, Mondelaers, Van Huylenbroeck, 2009), where, on the one hand, there is consumerism, ostentatious consumption and tons of expired and unconsumed food thrown into the dumps of the rich North — and, on the other, poverty and

widespread famine in the poor South. For one thing, there are civilisation diseases such as obesity, diabetes, increase in the incidence of cancer — for the other, malnutrition, death from exhaustion and thirst.

Sustainable consumption as a goal and condition for eco-development is and should be enriched with knowledge about its various aspects (Gustavsen, Hegnes, 2020). Still, both the definition and the components of this concept, from a scientific point of view, do not seem to be fully recognised and complete.

Materials and methods

The basis for the empirical part of the study is direct research conducted as part of the research project entitled 'Changes in food consumption models in Poland' implemented at the Department of Market and Consumption of the UE in Katowice in 2018–2019 and funded by the Ministry of Science and Higher Education. Part of the research carried out under the project concerned the identification of sustainable consumer behaviours observed on the food market and in the households. These tests were carried out using the survey method and the distributed survey technique. The questions in the questionnaire were formulated in the form of ordinal scales, bipolar, seven-degree and interval scales. The reliability of the scales used was assessed by calculating the Cronbach's alpha coefficient for them and if the acceptable level of the coefficient $\alpha > 0,7$, is adopted, the scales used in the study can be considered reliable (Henson, 2001).

The research was conducted among non-randomly (purposive sampling) selected people representing their households from the Mazowieckie and Śląskie Provinces and from Slovakia.¹ The reason for the decision to choose a non-random selection for the sample was primarily the lack of an appropriate sampling frame and the need to reduce the test cost. Limited financial resources also determined the field of the conducted research. Adults who were responsible for purchasing food and preparing meals were qualified for the sample. They were mostly women — housewives (82.2% Polish and 88.7% Slovak respondents).

As a result of the tests and after formal verification of the research material received, 900 fully qualified questionnaires were adopted for analysis (300 each from the Mazowieckie and Śląskie Provinces and 300 from Slovakia).

The sample of Polish consumers included respondents from a varying size of household set. Most often they were 4-person households (30.2%) and 2- and 3-person households (20.7% and 20.8%, respectively). Single-person households (16.0%) and 5- and more-person households (12.3%) were relatively more numerous. Consumers from cities predominated in the sample (81.0%), among which the largest group were respondents from cities with more than 200 thousand inhabitants. Rural consumers accounted for 19.0% of respondents. The survey participants, when asked about the assessment of their household's financial situation, most often admitted that it was good or average (47.5% and 34.5%, respectively). 2.8% declared a bad or very bad situation, while 15.2% declared a very good one. The majority of respondents had secondary education. The youngest respondent was 19 years old — the oldest 82 years old. The median age of the housewife was 45 years, of the householder — 48 years.

In the sample of respondents from Slovakia, the majority were respondents from 4-person (27.8%) and 2-person (26.1%) households. There were little fewer 3-person households (24.4%). The smallest percentage in the studied sample was single-person and households of 5 and more people (12.4% and 9.4%, respectively). In the surveyed sample, rural consumers constituted 18.4%. Others lived in cities of up to 50,000 inhabitants (27.1%), from 51–100 thousand (26.4%) and more than 100,000 residents (28.1%). Survey participants from Slovakia, when asked about the assessment of their households' financial situation, most often admitted that it was good (48.8%) or average (29.5%). 1.8% declared a bad or very bad situation and 20.4% claimed it to be very good. Most of the respondents had secondary education. The youngest respondent was 21 years old — the oldest 89 years old. The median age of the housewife was 46 years, of the householder — 48 years.

The study used 12 diagnostic variables characterising sustainable consumer behaviours on the food market and in the households (Tables 1 and 2). They formed a seven-degree ordinal scale, where the number –3 meant 'I totally disagree' and +3 meant the answer 'I completely agree.' The Cronbach's alpha value was 0.764 (Polish version) and 0.811 (Slovak version), which indicates a good level of reliability of the scale used.

In addition to the structure indicators and location measures, the Pearson's Chi-Square test of independence and Cramer's V coefficient were used to describe the obtained test results. IBM SPSS Statistics 25 was used for the calculations.

Results and discussion

Respondents from Polish provinces declared that they engaged in behaviours that should be considered moderately sustainable ($Me = 1$ in eight out of twelve analysed behaviours). The respondents most often declared sustainable deconsumption behaviours, *i.e.* shopping after prior determination of their needs and paying attention to the sell-by date. Appropriate post-consumer waste management, *i.e.* sorting and recycling of waste, was also relatively important for them. Respondents generally think that they eat healthily, which is why, most often, they declared no interest in the advice and guidelines from dieticians (Table 1). Such declarations should not come as a surprise, even looking at the results of the July CBOS research, according to which 80% of Poles are convinced that they eat healthily or very healthily (CBOS, 2019). However, the respondents' relatively low awareness about the limited resources and the need for rational use of energy sources may be worrying. Only 14.3% of respondents fully agree with the need to save electricity and natural gas when preparing meals. In the case of water usage, there are even fewer customers who declare its rational consumption — only 13.5% (Table 1).

Slovak respondents also declared taking on moderately sustainable behaviours. The most important focus was put on the same issues that dominated among Polish respondents: paying attention to the sell-by date, thinking about what is really needed or paying attention to recycling and sorting waste. Similarly, as among Polish respondents, the prevailing belief is that healthy meals are prepared in the households of respondents, so it is not necessary to use the advice and guidelines of a dietician. In turn, declarations of behaviours aimed at reducing water and energy consumption are even less frequent than among Polish respondents. Only 8.4% of Slovak respondents completely agree with the need to save water, and only 6.0% — electricity and gas (Table 2).

Table 1. Respondents towards sustainable food consumption (Poland; N = 600)

Specification	Evaluation* (%)							Position measures**		
	-3	-2	-1	0	1	2	3	Me	Mo	M
My family eat healthily	1.8	4.2	10.8	18.5	35.2	22.5	7.0	1	1	0.77
We happen to throw food away	8.5	8.3	5.5	10.5	33.7	22.0	11.5	1	1	0.65
When preparing meals, we use dietary advice and guidelines	25.7	16.8	13.3	16.8	14.7	8.7	4.0	-1	-3	-0.80
We purchase food on the basis of a previously prepared shopping list	10.3	7.8	7.0	14.5	17.8	21.0	21.5	1	3	0.77
When buying food, we pay attention to its ingredients	8.8	6.8	9.5	12.8	22.3	21.0	18.7	1	1	0.71
When buying food, we pay attention to its sell-by date	2.0	1.8	2.0	3.8	12.0	21.7	56.7	3	3	2.14
When buying food, we pay attention to the type of packaging	12.0	7.8	10.2	19.2	28.7	13.8	8.3	1	1	0.20
When buying food, we pay attention to its origin	8.7	7.8	9.5	13.8	29.3	16.2	14.7	1	1	0.55
Before purchasing, we consider what we need	0.2	1.3	1.3	6.0	21.7	34.5	25.0	2	3	1.91
We pay attention to waste sorting and recycling	9.8	7.3	7.7	10.2	13.8	20.3	30.8	2	3	0.95
When preparing food, we pay attention to water consumption	12.5	10.2	9.8	14.5	24.0	15.5	13.5	1	1	0.28
When preparing food, we pay attention to electricity / gas consumption	15.0	14.2	9.5	14.2	19.0	13.8	14.3	1	1	0.07

* The respondents marked their answers on a seven-point scale, where — -3 meant totally disagree and +3 meant completely agree.

** Me — median, Mo — modal value, M — arithmetic mean. Due to the fact that the variables are measured on the ordinal scale, only the median can be interpreted. The arithmetic average value is given for illustrative purposes only.

Source: own research.

The declared behaviours of Polish and Slovak consumers are similar, the level of expenditure on food and non-alcoholic beverages is similar in these countries. According to Eurostat data, in 2016, Slovaks spent EUR 1,400 on food per person — Poles 1,100, this expenditure accounted for 17.8% and 17.1% of total expenditure in their budget respectively (Maciejewski, 2018).

Table 2. Respondents towards sustainable food consumption (Slovakia: N = 300)

Specification	Evaluation* (%)							Position measures**		
	-3	-2	-1	0	1	2	3	Me	Mo	M
My family eat healthily	2.7	5.0	10.3	15.0	20.3	31.7	15.0	1	2	1.01
We happen to throw food away	10.8	11.8	16.6	12.2	23.6	15.2	9.8	0	1	0.11
When preparing meals, we use dietary advice and guidelines	16.6	18.3	16.6	18.0	15.3	8.8	6.4	-1	-2	-0.51
We purchase food on the basis of a previously prepared shopping list	8.7	6.0	12.1	12.1	18.1	21.1	21.8	1	3	0.76
When buying food, we pay attention to its ingredients	12.1	7.7	8.1	11.4	25.2	20.5	15.1	1	1	0.52
When buying food, we pay attention to its sell-by date	6.0	2.3	4.4	9.4	13.4	24.2	40.3	2	3	1.55
When buying food, we pay attention to the type of packaging	14.4	8.7	10.4	20.8	26.5	14.4	4.7	0	1	-0.21
When buying food, we pay attention to its origin	9.0	6.0	8.0	9.4	18.1	25.1	24.4	1	2	0.94
Before purchasing, we consider what we need	3.7	3.3	9.7	10.0	25.4	27.4	20.4	1	2	1.14
We pay attention to waste sorting and recycling	5.4	4.7	8.1	8.4	18.1	23.2	32.3	2	3	1.28
When preparing food, we pay attention to water consumption	16.4	11.1	14.4	14.1	21.8	13.8	8.4	0	1	-0.11
When preparing food, we pay attention to electricity / gas consumption	17.7	11.4	16.7	16.4	18.1	13.7	6.0	0	1	-0.29

* The respondents marked their answers on a seven-point scale, where -3 meant totally disagree and +3 meant completely agree.

** Me — median, Mo — modal value, M — arithmetic mean. Due to the fact that the variables are measured on the ordinal scale, only the median can be interpreted. The arithmetic average value is given for illustrative purposes only.

Source: own research.

Avoiding waste is a key sustainable behaviour in the area of consumption. The problem of throwing food away has been pointed out many times (Dąbrowska, Janoś-Kresło, 2013; Śmiechowska, 2015). The obtained research results confirm the existence of this phenomenon among the respondents in both countries. Looking at the declaration of both groups of respondents, food is thrown away more often in Poland than in Slovakia.

The focus is increasingly shifting towards the awareness of the residents of both countries of the need to pay attention to the rational use of resources such as water, electricity or natural gas — Tables 1 and 2.

Using the Pearson χ^2 variables independence test and Cramer's V coefficient to test the strength of the relationship of variables, it was found that descriptive variables such as the age of the person responsible for food purchases and its preparation, place of residence, material situation or the number of people in the household have a moderate impact on taking on sustainable behaviours in the households surveyed ($V < 0.3$; $p \leq 0.1$).

Conclusions

To sum up, it is worth noting that the surveyed consumers declare taking on sustainable behaviours towards food consumption both on the market and in their households. They can be defined as moderately sustainable. Undoubtedly, their rationalization of consumption and concern for healthy eating are very positive behaviours, while their low awareness of limited resources and disregard for the problem of water and gas consumption or the use of electricity, the production of which has an impact on the natural environment, are causes for concern.

Therefore, there is still a lot to be done in promoting the idea of sustainable consumption, but one can already count on a fairly large percentage of informed consumers who want to act for sustainable development. This is also indicated by studies of other authors (e.g. Zrałek, 2018). This is an important message for institutions seeking support for the concept of sustainable development among ordinary inhabitants of the Earth, as well as for enterprises that should increasingly take into account goals related to achieving sustainable values in their marketing strategies. They can be manifested, for example, in the production of only healthy food delivered to the market in environmentally friendly packaging or the promotion of a healthier diet.

However, the author is fully aware that the presented research results should be approached with caution due to the burden of measurement error primarily resulting from the non-random selection of

the sample, its size, as well as the relatively narrow area of research. At the same time, the author hopes the findings presented do contribute to the existing body of research and emphasise the importance research puts into sustainable consumer behaviours and sustainable consumption.

Footnotes

¹ The author would like to thank here for substantive and technical assistance in conducting the study in the Mazowieckie Province, prof. dr hab. Irena Ozimek from the Department of European Policy, Public Finance and Marketing at the Warsaw School of Economics and doc. Ing. Pavol Kita from the Department of Marketing at the University of Economics in Bratislava for substantive and technical assistance in conducting the study in Slovakia, as well as the translation of the questionnaire into Slovak. The translation of the questionnaire was carried out in accordance with the principles of equivalence of international studies, for which see, among others, Jaciow (2018) and Barska (2019).

References

1. Aertsens, J., Verbeke, W., Mondelaers, K., Van Huylenbroeck, G. (2009). Personal determinants of organic food consumption: A review. *British Food Journal*, 111(10), 1140–1167. DOI: 10.1108/00070700910992961.
2. Annunziata, A., Agovino, M., Mariani, A. (2019). Measuring sustainable food consumption: A case study on organic food. *Sustainable Production and Consumption*, 17, 95–107. DOI: 10.1016/j.spc.2018.09.007.
3. Arunachalam, D., Kumar, N. (2018). Benefit-based consumer segmentation and performance evaluation of clustering approaches: An evidence of data-driven decision-making. *Expert Systems with Applications*, 11, 11–34.
4. Barska, A. (2019). *Konsumenci pokolenia milenium na rynku innowacyjnych produktów żywnościowych na obszarach przygranicznych Polski, Niemiec, Czech i Słowacji*. Zielona Góra: Uniwersytet Zielonogórski.
5. CBOS (2019). *Jak zdrowo odżywiają się Polacy?* (106), 1–22.
6. Dąbrowska, A., Janoś-Kresoła, M. (2013). Marnowanie żywności jako problem społeczny. *Handel Wewnętrzny*, (4), 15–27.
7. Gustavsen, G. W., Hegnes, A. W. (2020). Individuals' personality and consumption of organic food. *Journal of Cleaner Production*, 245, 1–9. DOI: 10.1016/j.jclepro.2019.118772.
8. Henson, R. K. (2001). Understanding internal consistency reliability estimates: A conceptual primer on coefficient alpha. (Methods, plainly speaking). *Measurement and Evaluation in Counseling and Development*, 34(3), 177–189.

9. Jaciow, M. (2018). *Ekwiwalencja w międzynarodowych badaniach rynku*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach.
10. Kramer, J. (2011). Konsumpcja — ewolucja ról i znaczeń. *Konsumpcja i Rozwój*, (1), 5–15.
11. Lutz, C., Newlands, G. (2018). Consumer segmentation within the sharing economy: The case of Airbnb. *Journal of Business Research*, 88, 187–196.
12. Maciejewski, G., Mokrysz, S., Wróblewski, Ł. (2019). Segmentation of Coffee Consumers Using Sustainable Values: Cluster Analysis on the Polish Coffee Market. *Sustainability*, 11(3, 613), 1–20.
13. Maciejewski, G. (2018). Food consumption in the Visegrad Group Countries — towards a healthy diet model. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, 361, 20–32.
14. NME (1994). *Report from the Oslo Ministerial Roundtable Conference on Sustainable Production and Consumption*. Oslo Symposium. Norwegian Ministry of the Environment. Retrieved from <http://enb.iisd.org/consume/oslo004.html> (03.09.2019).
15. Sowell, T. (2014). *Basic Economics: A Common Sense Guide to the Economy*. New York: The Perseus Book Group.
16. Śmiechowska, M. (2015). Zrównoważona konsumpcja a marnotrawstwo żywności. *Annales Academiae Medicae Gedanensis*, 45, 89–97.
17. UN (2019). *Sustainable Development and Sustainable Development Goals*. Retrieved from <https://www.un.org/sustainabledevelopment/> (03.09.2019).
18. Zalega, T. (2016). Rozwój zrównoważony a ekonomia zrównoważonego rozwoju — zarys problematyki. *Studia i Materiały*, 1(20), 101–126.
19. Zrałek, J. (2018). *Konsument wobec wyzwań zrównoważonej konsumpcji. Zrównoważone zachowania konsumenckie i ich determinanty*. Katowice: Wydawnictwo Uniwersytetu Ekonomicznego w Katowicach.

Grzegorz Maciejewski, PhD, Assoc. Prof., University of Economics, Katowice, Poland — holds a Postdoctoral Degree in Economic Sciences. He is a Professor at the University of Economics in Katowice, Head of the Market and Consumption Department. He is a research projects manager at the Centre for Knowledge Research and Transfer in Katowice and the manager and contractor of six grants from the Ministry of Science and Higher Education. Behavioural economics is the main area of his scientific interests. He is the author of over 130 articles in the area of consumer behaviour, the marketing strategies of enterprises and market and marketing research methodologies.