



Publisher

<http://jssidoi.org/esc/home>

CHANGES TOWARD SUSTAINABILITY IN CONSUMER PURCHASING BEHAVIOUR OF EVERYDAY PRODUCTS*

Irena Baláková¹, Michal Pšurný², Jana Stávková³, Veronika Švecová⁴

^{1,2,3} Department of Marketing and Trade, Faculty of Business and Economics, Mendel University in Brno, Zemědělská 1665/1, 613 00 Brno, Czech Republic

E-mails:¹ irena.balakova@mendelu.cz; ² michal.psurny@mendelu.cz; ³ stavkova@mendelu.cz; ⁴ xsvcov2@mendelu.cz

Received 15 August 2024; accepted 22 November 2024; published 30 December 2024

Abstract. This study aims to identify the factors that influence sustainable consumer purchasing behaviour in the food and everyday products market, which can be used to influence consumer purchasing patterns toward sustainable consumption. The factors commonly observed to influence purchasing decisions, such as price, quality, packaging, and brand, were complemented by factors such as sustainable production, nutritional composition, health benefits, and the product's origin. These additional factors also exert a significant influence on consumer purchasing decisions. A principal component analysis (PCA) identified four determinants of sustainable consumer purchasing behaviour (Product Features, Environmental Responsibility, Comfort and Accessibility, and Pricing). The influence of determinants on real, sustainable purchasing behaviour is evaluated using a PLS-SEM model. The PLS-SEM structural modelling demonstrated a significant impact of all determinants on real, sustainable purchasing behaviour. The first determinant (Product Features) indicates that an individual's rational behaviour is related to sustainability. These variables relate to product quality, nutritional composition, origin, health benefits, and product breadth. Additionally, they reflect attitudes toward life values and norms. Determinant Environmental Responsibility reflects the importance of sustainable practices by both manufacturers and retailers as perceived by consumers. Determinant Comfort and Accessibility encompass the variables most influenced by those who create the external shopping environment, control the marketing tools, and sellers that address the customer (point of sale, accessibility, loyalty to the chain, etc.). The last determinant (Pricing) represents rational decision-making and is subject to the consumer's financial circumstances.

Keywords: sustainable consumer behaviour; structural modelling; purchasing factors; environmental responsibility; determinants of consumption

Reference to this paper should be made as follows: Baláková, I., Pšurný, M., Stávková, J., Švecová, V. (2024). Changes toward sustainability in consumer purchasing behaviour of everyday products. *Entrepreneurship and Sustainability Issues*, 12(2), 364-377. <http://doi.org/10.9770/s6343526349>

JEL Classifications: D12, M31, Q56

1. Introduction

The ongoing societal changes (climatic, economic, political, etc.) are gathering pace. Five key trends currently affect consumers: digital adoption, consumer mobility patterns, value-based purchasing behaviour, lifestyle in the context of health and exercise, and social interactions supporting changes in human behaviour. The quest to understand individual behaviour is associated with sustainability, not only within scientific circles (Gavurova et al., 2022; Arilla-Llorente et al., 2024). Since the definition of 'sustainability' in 1994, it has slowly entered the public consciousness. Government interventions or political proclamations contained in the strategic

* This research was funded by the grant No. IGA-PEF-TP-23-012 of the Grant Agency of the Faculty of Business and Economics at Mendel University in Brno and by the project CZ.02.1.01/0.0/0.0/16_017/0002334 Research Infrastructure for Young Scientists, co-financed by Operational Programme Research, Development and Education.

objectives of individual countries have an impact on sustainability and its acceptance (Skare et al., 2023, 2024). To achieve desirable Sustainable Development Goals (SDGs), such as SDG 12 on ensuring sustainable consumption (United Nations, 2024), much more effort is needed on the human individual, both in different roles (consumer, producer, discoverer) and with different capabilities. Each individual is critically responsible for his behaviour, affecting his current and future well-being and future generations (Moschis et al., 2020). To achieve sustainability, we must continually address and educate ourselves on this issue. For effective educational activities, it is essential to know the behavioural patterns of individuals across generations. Knowing the best channels through which information can be conveyed and how best to engage with particular age groups is essential.

This paper aims to understand the factors influencing sustainable consumer purchasing behaviour in the food and everyday products market through which a change in consumer purchasing patterns toward sustainability in everyday consumption can be achieved. Real consumer behaviour can be influenced through behavioural determinants, where individual determinants are given by factors affecting the consumer's purchasing decision process. The study also offers the option of determining the direction of action of the individual determinants of real, sustainable consumer behaviour. Exact methods and the food and everyday products (i.e., pharmaceuticals and drugstores) are used to understand the impact of the determinants on consumer behaviour.

2. Literature review

Sustainable consumption is mainly related to increasing the use of renewable resources, minimising waste and emissions, and improving quality of life (Šajn, 2020). Purvis et al. (2019) discuss environmental and economic sustainability in the context of profit and social sustainability.

Shehawy and Ali Khan (2024) show that environmental awareness influences the link between pro-environmental sentiments and consumer behaviour. Paço et al. (2018) add that concern for the future is associated with pro-social attitudes and purchasing behaviour toward environmentally friendly products. Moschis et al. (2020) also state that one of the main approaches to sustainable consumption is to shape food demand, which would require changes in current food consumption patterns. Phan (2023) and Messner et al. (2022) state that monitoring food consumption and paying attention to food production with sustainability in mind is appropriate.

Waldman et al. (2022) distinguish four segments of consumers according to their attitudes toward sustainability in behaviour: the first behaves sustainably when it is economically advantageous or they believe in health benefits; the second segment sees sustainability benefits in product freshness; the third segment is characterised by a high degree of environmental attention, and the fourth segment behaves unsustainably. Among the factors influencing sustainable consumer behaviour, Lavuri et al. (2023) include egoistic, altruistic values, and social motivations. Factors affecting consumption structure, i.e., healthy lifestyles accompanied by different diets and various food supplements, are gaining importance (Akkaya, 2021; Jadhav et al., 2023). Harrison et al. (2022) and Teireira et al. (2022) also link the concept of healthy food and sustainable healthy eating to consumption. This was confirmed by Govaerts and Olsen (2023), who investigated the influence of nontraditional foods, or seaweed, where consumers were found to have a positive relationship between attitudes toward sustainable consumption and realised consumption. According to Jadhav et al. (2023), consumption determinants include knowledge about healthy lifestyles, product quality, availability, and price. However, according to Akkaya (2021), a healthy lifestyle indirectly influences sustainable consumption because it affects the respected values perceived by the consumer, which subconsciously determines the expressed purchase intention.

Zámková et al. (2021) explain that customer preferences have changed over the years and currently emphasise the effects of health aspects of food. Consumers who perceive a product as beneficial to their health and the environment are likelier to purchase it (Dorce et al., 2021). Products with an organic label are perceived by consumers as healthier and safer with minimal environmental impact (Bu et al., 2020). Petrescu et al. (2020) state that consumers mainly consider nutritional composition when evaluating the health aspects of food. Consumers who pay attention to ingredients are more likely to appreciate the environmental benefits of a product and purchase it despite the higher price (Coderoni & Perito, 2020).

Other factors consumers should address in the context of sustainable consumption are the origin of products and product packaging (De Canio & Martinelli, 2020; Ge et al., 2024; Thøgersen et al., 2019). De Canio (2023) explains that informed consumers prefer eco-friendly packaging. Consumers are willing to pay extra for sustainable packaging (Herrmann et al., 2022). However, as Otto et al. (2021) point out, sustainability intentions do not always match the resulting real behaviour, as consumer knowledge is limited, and sometimes consumers do not recognise sustainable packaging. Labels that promote the selection and consumption of more sustainable foods and beverages play an important role in consumer decision-making (Potter et al., 2021). Boßow-Thies (2021), in a study on packaging-free products, stated that consumers must be adequately motivated to purchase packaging-free products as there are issues associated with this purchase in the context of hygiene and convenience.

Furthermore, the friendliness of the attendant or courier significantly impacts the purchase decision, and improved interactions can increase customer satisfaction and positive recommendations (Ma & Kim, 2021). On the other hand, some customers prefer unattended shopping (Olsson et al., 2022). Also, Bosch et al. (2024) discuss the popularity of self-service shopping; however, there is no evidence of an impact in the context of sustainability. A compromise between traditional and self-service shopping can be represented by the service of a digital robotic human (Moore et al., 2021). Loyalty to a retail chain is another factor influencing consumers' purchasing decisions and in the context of sustainability, González-Viralta et al. (2023) report that consumers are more likely to remain loyal to a store where green practices are developed. However, sustainability as an instrumental element in customer loyalty may not be true in all countries (Fernando et al., 2017). In addition to loyalty, the choice of a retail chain is influenced by accessibility to consumers. Mattioli and Anable (2016) explain that consumers prefer to travel by car for major weekend shopping trips. Pan et al. (2019) report that the choice of transportation for shopping in terms of public transport or a car is determined by the store's location and the parking cost.

Today, based on advanced scientific knowledge, the model of planned behaviour of Ajzen's model (2020) is known for identifying the factors that influence real consumer behaviour, which states the direct influence of intention on real behaviour, while the intention is directly influenced by determinants such as consumer attitudes, subjective norms, and behavioural control. These models contribute to the prediction of consumer behaviour in satisfying needs. For example, research by Soorani and Ahmadvand (2019) showed that attitudes, perceived behavioural control, subjective norms, and guilt were drivers of food consumption management and food waste avoidance. Models of consumption behaviour can be used in other consumption areas; Bhutto et al. (2022) show the importance of environmental appeals in electricity consumption.

To achieve sustainable consumption of food and other products consumed daily in households, behavioural changes need to be targeted, and it is desirable to initiate change among consumers themselves through factors that influence behaviour. Understanding these factors in this study fills the existing research gap in the purchasing behaviour of sustainable products represented by food and everyday products (drugstores, pharmaceuticals). Diaconeasa et al. (2021) explain that the topic of sustainable food consumption and the aspects that influence it are complex, and it is desirable to try to change consumer behaviour through marketing strategies and even national and international policies in favour of sustainable consumption.

3. Data and methods

A questionnaire survey was conducted to understand consumer behaviour in the context of ongoing changes in society and to identify factors that influence the decision-making process of consumers purchasing sustainable food and everyday products. The survey was carried out in October and November 2023 using the CAWI (Computer Assisted Web Interviewing) method and obtained a representative sample ($n = 700$) according to the applied quotas (age, gender, and highest educational attainment, see Table 1). In specific questions, respondents were asked to assess the importance of certain factors in their purchasing decisions. (listed in Table 2). They indicated the strength of the influence of the factors on a numerical scale of 1-7, where the number 1 meant that the factor was the least important and the number 7 meant that the factor was the most important. The data were confirmed to follow a normal distribution.

Table 1. Characteristics of the research sample (n=700)

	Questionnaire survey n = 700, [%]	Baseline population [%]
Gender		
Male	48.9	49.3
Female	51.1	50.7
Age group (years)		
18–25	9.0	9.0
26–35	15.6	15.6
36–45	19.1	19.0
46–55	17.7	17.7
56–65	15.0	15.0
66 and more	23.6	23.6
Economic activity		
Employees	49.4	47.3
Private entrepreneurs	5.3	7.4
Old-age pensioners	26.3	23.6
Unemployed	3.0	2.8
Students	5.1	15.2
Maternity or parental leave	6.7	2.3
Other	4.1	1.3
Disposable household income		
Less than CZK 30,000 (EUR 1,250)	20.6	39.3
CZK 30,001–50,000 (EUR 2,083)	40.1	29.4
CZK 50,001–70,000 (EUR 2,917)	17.7	18.2
CZK 70,001–90,000 (EUR 3,750)	6.6	8.0
More than CZK 90,000 (EUR)	4.1	5.0
I don't want to tell	10.9	-
Number of household members		
1	17.4	29.6
2	39.0	32.6
3	20.3	18.0
4	16.0	15.6
5 or more	7.2	4.3
Number of children in the household		
0	69.3	54.2
1	15.6	22.0
2	12.9	19.6
3	1.7	3.5
4 or more	0.6	0.7
Educational attainment		
Elementary education	7.7	13.6
Vocational/trade school	39.0	33.7
Full secondary education	29.6	33.6
University degree	22.6	19.1
Size of municipality of residence		
Less than 3,000 inhabitants	24.4	33.4
3,001–20,000 inhabitants	21.1	24.9
20,001–100,000 inhabitants	28.7	20.8
More than 100,000 inhabitants	25.7	20.9

Source: own questionnaire processing (n = 700), Eurostat (2023).

Factor analysis was applied to identify the determinants of sustainable purchasing decisions. Factor analysis begins with creating a correlation matrix of the variables under study and determining whether there is a moderate to strong correlation between the variables (Brown et al., 2011). Based on these correlations, factors are organised to produce behaviour determinants. The number of determinants is established through eigenvalue analysis. The eigenvalues should be greater than 1, which satisfies the Kaiser-Guttman criterion (Garson, 2023). Orthogonal rotation of factor loadings is used for interpretation using the Simple Varimax method.

Table 2. Evaluated factors that entered the factor analysis

Q number	Variable
Q1_1	Price
Q1_2	Product quality
Q1_3	Product breadth
Q1_4	Purchase without packaging
Q1_5	Product origin
Q1_6	Nutritional composition
Q1_7	Packaging and product design
Q1_8	Brand
Q1_9	Discounts
Q1_10	Sustainable production
Q1_11	Health benefits of the product
Q2_1	Staff behaviour
Q2_2	Distance from the place of residence
Q2_3	Transport accessibility
Q2_4	Loyalty

Source: own questionnaire processing.

Structural modelling, specifically the PLS-SEM (Partial Least Square - Structural Equation Modeling) reflective structural model, is used to test whether these determinants have an impact on real consumer behaviour that is sustainable. The model was constructed using SmartPLS software (v. 4.1.0.8) to build the model. The model works with the same variables as factor analysis, but the resulting determinants are considered. The latent variables in the model are these determinants, and the indicators of the latent variables are the variables (questions Q1_1 - Q1_11 and Q2_1 - Q2_4). In addition, the latent variable Real behaviour enters the model. Indicators (statements from Table 3) were used in constructing this model. Respondents expressed their level of agreement with these statements using a 7-point Likert scale.

Table 3. Indicators (questions, statements) for constructing the latent variable Real behaviour

Q number	Statement
Q3_1	I buy food from sustainable production.
Q3_2	I buy healthy food.
Q3_3	I am willing to pay extra for sustainable and healthy food.
Q3_4	I prefer to buy locally made products.

Source: own questionnaire processing.

The validity and reliability of the indicators that determine the latent variables are verified using outer loadings. The cut-off value for outer loadings is set to be < 0.7 , but lower values are retained if they do not affect the validity and reliability of the model (Fornell & Larcker, 1981; Hair et al., 2021). Cronbach's α , Composite reliability (CR), and Average Variance Extracted (AVE) check whether the assumptions for latent variables are met. The thresholds are set at Cronbach's $\alpha > 0.7$, $CR > 0.7$, and $AVE > 0.5$ (Hair et al., 2014). The model is assessed as valid if the values are slightly lower (Hair et al., 2021). The collinearity of the final model is verified by the Variance Inflation Factor (VIF), which must be < 5 (Hair et al., 2016). Bootstrapping with 5000 subsamples with a confidence interval of two-tailed testing at a 95% confidence level (Aguirre-Urreta & Rönkkö, 2018) is used to assess the significance of the path coefficient. The R^2 value indicates the variability of the Real behaviour. Due to potential multicollinearity issues, discriminant validity is assessed using the Heterotrait-monotrait ratio (HTMT), where the cut-off value is set to 0.9 (Hamid et al., 2017; Henseler et al., 2016). The relevance of the model and the model is verified by Q^2 , which must be greater than 0 (Hair et al., 2018). Values > 0 indicate satisfactory predictive relevance of the model (Diaz-Ruiz et al., 2018).

4. Results

A consumer questionnaire survey identified factors determining consumers' decision-making when purchasing sustainable food and everyday products. In addition to commonly observed factors such as Price, Discounts, Product quality, Packaging, Product design, and brand were supplemented by additional factors such as Sustainable production, Nutritional composition, and Health benefits of the product or Product origin, which also influence purchasing decisions. This initial preliminary information had to be verified using appropriate methods that allow the information obtained to be generalised at a certain probability level or, with this probability, what behaviour can be expected.

To identify the factors active in the purchase decision process, 15 variables were included in the factor analysis: Price, Product quality, Product breadth, Purchase without packaging, Product origin, Nutritional composition, Packaging and product design, Brand, Discounts, Sustainable production,

Health benefits of the product, Staff behaviour, distance from the place of residence, Transport accessibility, and loyalty (see Table 5). Factor analysis allows quantifying the factors that influence consumers' sustainable purchasing decisions. The suitability of this method was verified by the Kaiser-Meier-Olkin criterion (KMO), and Bartlett's Test of Sphericity (Table 4), and the data set meets the requirements.

Table 4. Verification of the suitability of the factor analysis application.

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		0.830
Bartlett's Test of Sphericity	Approximate Chi-Square	3335.195
	Degrees of Freedom (df)	105
	Significance (p-value)	0.000

Source: own questionnaire processing (n = 700) in IBM SPSS Statistics.

The factor analysis using Principal Component Analysis (PCA) identified four determinants of sustainable consumer purchasing behaviour (Table 5). The determinants are ranked according to their contribution to explaining the variability under study, and the variables within the determinants are ranked from those with the highest Factor Loadings, i.e., the proportion of how they contribute to explaining the determinant.

The resulting Table 5 of the analysis performed works with Varimax rotation. In the partial results of the factor analysis without rotation, the eigenvalues range from 1.101 to 4.695.

Table 5. Results of Principal Component Analysis

Extracted Factors	Original Variables	Factor Loadings	Eigenvalue	% of Total Variance (Cumulative)
1. Product Features	Health benefits of the product Q1_11	0.791	2.976	19.837
	Product quality Q1_2	0.769		
	Product origin Q1_5	0.705		
	Nutritional composition Q1_6	0.617		
	Product breadth Q1_3	0.548		
2. Environmental Responsibility	Packaging and product design Q1_7	0.776	2.411	35.909
	Brand Q1_8	0.689		
	Purchase without packaging Q1_4	0.670		
	Sustainable production Q1_10	0.575		

3. Comfort and Accessibility	Transport accessibility Q2_3	0.809	1.892	48.522
	Distance from the place of residence Q2_2	0.727		
	Staff behavior Q2_1	0.526		
	Loyalty Q2_4	0.505		
4. Pricing	Discounts Q1_9	0.855	1.804	60.547
	Price Q1_1	0.840		

Source: own questionnaire processing (n = 700) in IBM SPSS Statistics.

The first determinant (Table 5) of sustainable purchasing behavior of food and everyday products is called Product Features, which brings together factors related to the product. These are Health benefits, Product quality, Product origin, and Nutritional composition. The determinant also includes the Product breadth as perceived by the consumer at the point of sale. The second determinant, Environmental Responsibility, brings together variables related to environmental aspects created by sellers and producers in terms of environmental sustainability. Visual communication also has a noticeable influence, telling the customer through the packaging whether the product is sustainable. When deciding on a product's environmental sustainability, customers also consider the packaging and the option of buying without packaging.

The third determinant is Comfort and Accessibility, as it primarily reflects the ease of shopping for consumers. It includes transport accessibility in terms of public transport accessibility and parking options (Transport accessibility), the distance between the store and the place of residence (Distance from the place of residence), the friendliness of the service staff (Staff behaviour), but also the loyalty of the customer to the retail chain (Loyalty). The last determinant, Pricing, is determined by two variables: Price and Discount promotions. Even though the determinant Pricing comprises only two variables, it explains 12% of the examined variability across all variables.

The impact of the above determinants on real consumption behaviour toward sustainability is assessed using a PLS-SEM model. Figure 1 illustrates the model, showing outer loadings, path coefficients, and R² values. Most of the outer loadings are < 0.7, while some are close to 0.6. However, the significance level of all indicators is < 0.001 (see Figure 1), and therefore, we retain all indicators for latent variables.

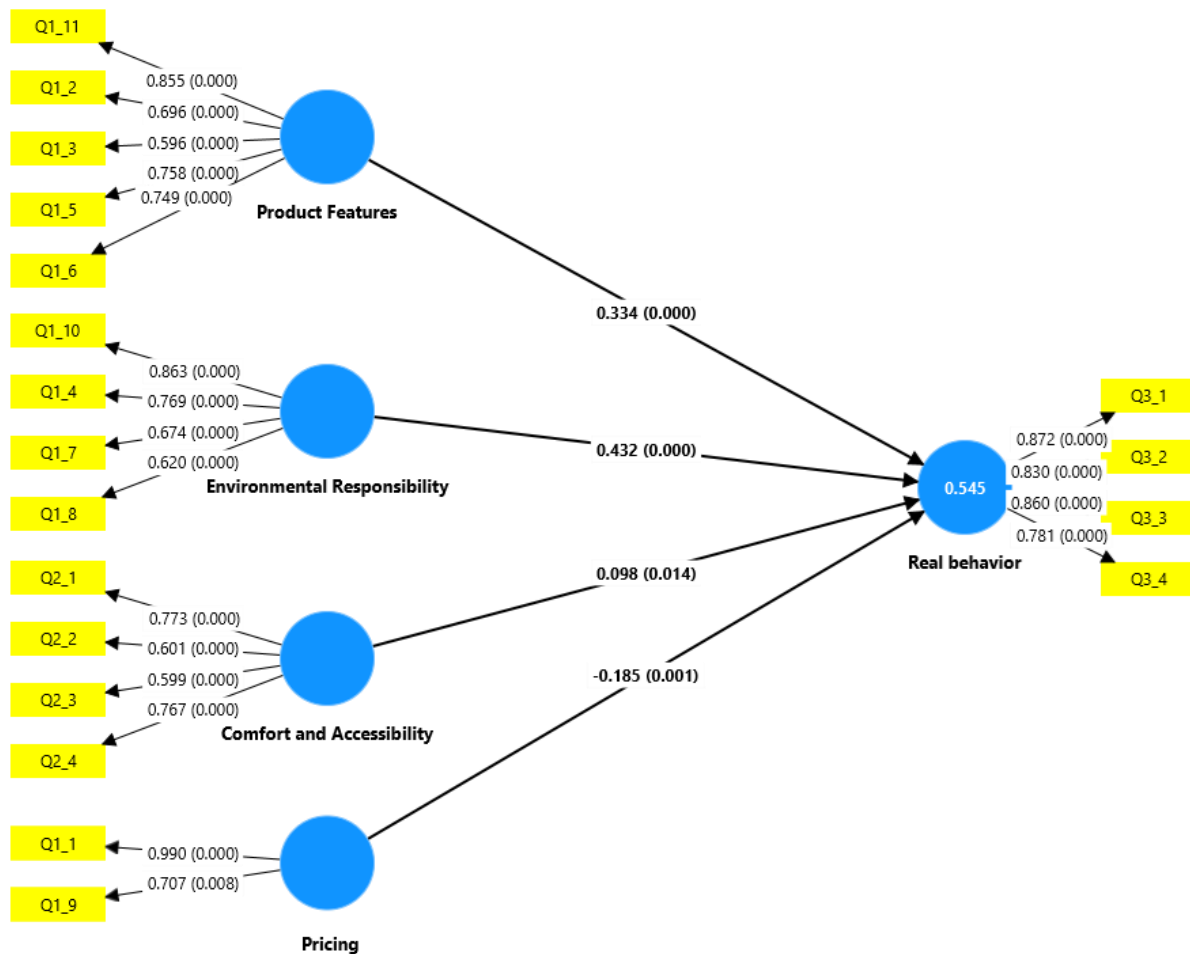


Figure 1. PLS-SEM model with marked outer loadings, path coefficients and R².

Source: own questionnaire processing in SmartPLS 4 statistical software.

The reliability and validity of the model are assessed using Cronbach's α , CR, and AVE. The values for each latent variable are shown in Table 6. All values are above the threshold values, only for the latent variable Comfort and Accessibility is Cronbach's α , CR, and AVE slightly lower (<0.04), but this should not affect the model. The collinearity of the final model is assessed by the Internal Variance Inflation Factor (VIF), see Table 6. In all cases, it is less than the specified value of 5.

Table 6. Reliability measurements, convergent validity for PLS-SEM model.

	Cronbach's α	CR	AVE	Inner VIF
Comfort and Accessibility	0.661	0.782	0.476	1.413
Environmental Responsibility	0.730	0.824	0.544	1.667
Pricing	0.750	0.847	0.740	1.097
Product Features	0.790	0.853	0.541	1.668
Real behavior	0.857	0.903	0.700	-

Source: own questionnaire processing in SmartPLS 4 statistical software.

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). All values are less than the threshold of 0.9 (mean HTMT = 0.479). Table 7 reports Path coefficients (P.C.), t-values, and p-values for relationships between latent variables. The table shows that all the latent variables (determinants) significantly influence Real purchasing behaviour toward sustainability ($p < 0.05$). The P.C. values indicate the strength of influence of the given latent variables toward Real behaviour. The model demonstrates that the Environmental Responsibility determinant has the greatest influence (P.C. = 0.432), followed by Product Features (P.C. = 0.334). Comfort and accessibility has the slightest positive influence (P.C. = 0.098), while Pricing shows a negative influence on Real sustainable behaviour (P.C. = -0.185).

Table 7. Results of total effects of the model

	P.C.	t values	p values
Comfort and accessibility -> Real behaviour	0.098	2.468	0.014
Environmental responsibility -> Real behavior	0.432	11.773	0.000
Pricing -> Real behavior	-0.185	3.182	0.001
Product Features -> Real behavior	0.334	7.863	0.000

Source: own questionnaire processing in SmartPLS 4 statistical software

The model explains 54.5% of the variability (see Figure 1, $R^2 = 0.545$). The predictive power of the model is further assessed by the Q^2 predict value, which is always > 0 ($Q^2(Q3_1) = 0.432$; $Q^2(Q3_2) = 0.346$; $Q^2(Q3_3) = 0.405$; $Q^2(Q3_4) = 0.302$). These values indicate a satisfactory predictive relevance of the model.

5. Discussion and Conclusions

This part of the paper offers a critical view of the observed factors that influence consumer buying behaviour in the food and everyday products market, not only based on the results obtained from the survey conducted but also in the context of the conclusions of academic studies, articles, and exact methods used. The factor analysis defined four determinants that correspond well to some of the conclusions of the studies examined in the literature search for causes and relationships. A deeper analysis of the variables that make up the determinant's points to the rational behaviour of the individuals addressing mainly Product Features, i.e. nutritional composition, product origin, health aspects, and quality in the purchasing decision. Also, Zámková et al. (2021) state that product features, such as health aspects of products, are currently at the forefront of consumer decision-making when purchasing food. Immediately next, in terms of the importance of determinants of food and everyday product purchasing behaviour, consumers also address variables that express their relationship to sustainability in the context of the environment (determinant Environmental Responsibility). This is in line with Shehawy and Ali Khan (2024), who demonstrate that environmental awareness influences the link between pro-environmental sentiments and consumer behaviour. Similarly, Paço et al. (2018) and Diaconeasa et al. (2021) add that concern for the future is associated with pro-social attitudes and purchasing behaviour oriented toward organic products. These variables further reflect consumers' life values and subjective norms (Ajzen, 2020).

Environmental responsibility demonstrated by manufacturers and retailers can help to increase customer loyalty - this is one of the conclusions of González-Viralta et al. (2023) and this study also identified the importance of loyalty as an additional determinant. The third determinant is named Comfort and Accessibility and includes customer-desired ease of accessibility in addition to the habitual and loyalty elements associated with customer convenience. Here, the effect of marketing tools and how retailers address the customer (advertising, point of sale, accessibility, but also loyalty to the chain, brand, etc.) is reflected. Rational decision-making elements may not always determine the popularity of a chain and the perceived ease of accessibility. Phan (2023) and Messner et al. (2020) point to the presence of irrational elements in consumer decision-making and loyalty, which may be based significantly on emotional or habitual factors rather than rational processes.

The fourth determinant is made up of only two factors, which are price and discount promotions. Price is generally considered a rational decision factor. The influence of pricing tools depends on the household income

level. Low-income households are more sensitive to price (Hough & Contarini, 2023), and from the distribution of households by income, we can expect these factors to continue to play a role. Colicchia et al. (2023) observed that low-income households are typically more interested in discount promotions. The representation of low-income households in society is a matter of social policy, how it is set, and how to treat these income groups within society.

The PLS-SEM structural modelling showed a significant effect of all determinants based on the factor analysis results on Real purchase sustainable behaviour. Environmental responsibility has the most significant influence, which is logical in the context of purchasing sustainable food and everyday products. Product Features significantly influence Real, sustainable purchasing behaviour. Price sensitivity has a weaker and negative impact on sustainable purchasing behaviour. Consequently, consumers who perceive price parameters as important do not move toward sustainable purchasing. Consumers are currently aware that they have to pay extra for sustainable products. In this case, shopping for sustainable products is not achievable for low-income households with no choice. The determinant of Comfort and Accessibility has the weakest influence on consumers' actual sustainable purchasing behaviour. It shows that consumers are likely to go the extra mile to purchase sustainable products, for example, buying from a retailer further away from their residence.

Among the newly formed determinants influencing consumer purchasing behaviour is the rise of interest in the sustainability impact of their consumption on the environment and greater interest in health. The results show that the environmental issues implemented by manufacturers and sellers of food and everyday products (pharmaceuticals and drugstores) are considered by customers when making purchasing decisions. Consumers are increasingly health-conscious, driving demand for health-related products. Personalised marketing, including tailored promotions, brand positioning, and recommendations, supports long-term loyalty. The results of the factor analysis and the results of the PLS-SEM modelling justify a slightly positive expectation, as the value hierarchy plays an increasingly important role in consumer behaviour. Instead of consumption being perceived only as the immediate satisfaction of a need and consumer decision-making being driven only by price, the importance of other significant determinants of consumer purchasing decisions is confirmed. The importance of life values entering consumer decision-making processes is underlined by research by Binder and Blankenberg (2017), explaining that consumption is related to personal satisfaction, which is determined by self-assessment of individual health, the environment in terms of relationships and the surrounding environment. Vitell (2015) also highlights consumer social responsibility, which is complementary to corporate social responsibility. Consumer social responsibility is significant because it involves moral principles and norms that guide behaviour in selecting, purchasing, using, and disposing of products or services.

References

- Aguirre-Urreta, M. I., & Rönkkö, M. (2018). Statistical Inference with PLS Using Bootstrap Confidence Intervals. *MIS Quarterly*, 42(3), 1001–1020. <https://doi.org/10.25300/misq/2018/13587>
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, 2(4), 314–324. <https://doi.org/10.1002/hbe2.195>
- Akkaya, M. (2021). Understanding the impacts of lifestyle segmentation & perceived value on brand purchase intention: An empirical study in different product categories. *European Research on Management and Business Economics*, 27(3), 100155. <https://doi.org/10.1016/j.iiedeen.2021.100155>
- Arilla-Llorente, R., Gavurova, B., Rigelsky, M., & Ribeiro-Soriano, D. (2024). Quantifying the dynamics of relationships between eco-innovations and SDG 8. *Energy Economics*, 130, 107280. <https://doi.org/10.1016/j.eneco.2023.107280>
- Barker, M. E., Wong, F., Jones, C. R., & Russell, J. M. (2019). Food purchasing decisions and Environmental Ideology: An exploratory survey of UK shoppers. *Sustainability*, 11(22), 6279. <https://doi.org/10.3390/su11226279>
- Bhutto, M. Y., Soomro, Y. A., & Yang, H. (2022). Extending the theory of planned Behavior: Predicting young consumer purchase behavior of Energy-Efficient appliances (Evidence from Developing Economy). *SAGE Open*, 12(1), 215824402210782. <https://doi.org/10.1177/21582440221078289>

- Binder, M., & Blankenberg, A. (2017). Green lifestyles and subjective well-being: More about self-image than actual behavior? *Journal of Economic Behavior & Organization*, 137, 304–323. <https://doi.org/10.1016/j.jebo.2017.03.009>
- Bjørgen, A., Bjerkan, K. Y., & Hjelkrem, O. A. (2019). E-groceries: Sustainable last mile distribution in city planning. *Research in Transportation Economics*, 87, 100805. <https://doi.org/10.1016/j.retrec.2019.100805>
- Bosch, L., Yang, S., Hofste, D., Gibson, I., & Thiede, S. (2024). Performing a life cycle assessment for self-service devices: A case study of self-checkout. *Procedia CIRP*, 122, 855–860. <https://doi.org/10.1016/j.procir.2024.02.028>
- Boßow-Thies, S., Preuß, M., & Schwarz, J. (2021). Acceptance of unpackaged food products. *Journal of Food Products Marketing*, 27(3), 127–141. <https://doi.org/10.1080/10454446.2021.1912680>
- Brown, B. L., Hendrix, S. B., Hedges, D. W., & Smith, T. B. (2011). *Multivariate analysis for the biobehavioral and social sciences: A Graphical Approach*. John Wiley & Sons.
- Bu, X., Nguyen, H. V., Chou, T. P., & Chen, C. (2020). A Comprehensive Model of Consumers' Perceptions, Attitudes and Behavioral Intention toward Organic Tea: Evidence from an Emerging Economy. *Sustainability*, 12(16), 6619. <https://doi.org/10.3390/su12166619>
- Coderoni, S., & Perito, M. A. (2019). Sustainable consumption in the circular economy. An analysis of consumers' purchase intentions for waste-to-value food. *Journal of Cleaner Production*, 252, 119870. <https://doi.org/10.1016/j.jclepro.2019.119870>
- Colicchia, C., Creazza, A., & Perotti, S. (2022). Better sustainability in the food supply chain through technology: a consumer perspective. *International Journal of Logistics Research and Applications*, 26(11), 1435–1461. <https://doi.org/10.1080/13675567.2022.2076816>
- De Canio, F. (2023). Consumer willingness to pay more for pro-environmental packages: The moderating role of familiarity. *Journal of Environmental Management*, 339, 117828. <https://doi.org/10.1016/j.jenvman.2023.117828>
- De Canio, F., & Martinelli, E. (2020). EU quality label vs organic food products: A multigroup structural equation modeling to assess consumers' intention to buy in light of sustainable motives. *Food Research International*, 139, 109846. <https://doi.org/10.1016/j.foodres.2020.109846>
- Diaconeasa, M., Popescu, G., Maehle, N., Nelgen, S., & Capitello, R. (2021). Media discourse on sustainable consumption in Europe. *Environmental Communication*, 16(3), 352–370. <https://doi.org/10.1080/17524032.2021.1999295>
- Diaz-Ruiz, R., Costa-Font, M., & Gil, J. M. (2017). Moving ahead from food-related behaviours: an alternative approach to understand household food waste generation. *Journal of Cleaner Production*, 172, 1140–1151. <https://doi.org/10.1016/j.jclepro.2017.10.148>
- Dorce, L. C., Da Silva, M. C., Mauad, J. R. C., De Faria Domingues, C. H., & Borges, J. a. R. (2021). Extending the theory of planned behavior to understand consumer purchase behavior for organic vegetables in Brazil: The role of perceived health benefits, perceived sustainability benefits and perceived price. *Food Quality and Preference*, 91, 104191. <https://doi.org/10.1016/j.foodqual.2021.104191>
- Eurostat. (2023). *European Union – Statistics on Income and Living Conditions*. Microdata. <https://doi.org/10.2907/EUSILC2004-2022V1>
- Fernando, V., Abeysekara, N., Samarasinghe, G. D., & Kuruppu, G. N. (2017). The impact of green attributes on customer loyalty of supermarket outlets in Sri Lanka. *2017 Moratuwa Engineering Research Conference (MERCon)*, 9, 395–400. <https://doi.org/10.1109/mercon.2017.7980517>
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Garson, G. D. (2022). *Factor analysis and dimension reduction in R*. <https://doi.org/10.4324/9781003279693>
- Gavurova, B., Schonfeld, J., Bilan, Y., & Dudas, T. (2022). Study of the Differences in the Perception of the Use of the Principles of Corporate Social Responsibility in Micro, Small and Medium-Sized Enterprises in the V4 Countries. *Journal of Competitiveness*, 14(2), 23–40. <https://doi.org/10.7441/joc.2022.02.02>
- Skare, M., Gavurova, B., & Kovac, V. (2023). Investigation of selected key indicators of circular economy for implementation processes in sectorial dimensions. *Journal of Innovation & Knowledge*, 8(4), 100421. <https://doi.org/10.1016/j.jik.2023.100421>
- Skare, M., Gavurova, B., & Kovac, V. (2024). Sustainability of gender employment and pay gap types regarding female participation in corporate management. *Environment, Development and Sustainability*, 1-27. <https://doi.org/10.1007/s10668-024-04753-9>

- Ge, H., Gómez, M. I., & Richards, T. J. (2024). The effect of price and assortment of local products on store performance: An agent-based modelling approach. *Journal of Agricultural Economics*, 75(3), 981–1003. <https://doi.org/10.1111/1477-9552.12612>
- González-Viralta, D., Veas-González, I., Egaña-Bruna, F., Vidal-Silva, C., Delgado-Bello, C., & Pezoa-Fuentes, C. (2023). Positive effects of green practices on the consumers' satisfaction, loyalty, word-of-mouth, and willingness to pay. *Heliyon*, 9(10), e20353. <https://doi.org/10.1016/j.heliyon.2023.e20353>
- Govaerts, F., & Olsen, S. O. (2022). Consumers' values, attitudes and behaviours towards consuming seaweed food products: The effects of perceived naturalness, uniqueness, and behavioural control. *Food Research International*, 165, 112417. <https://doi.org/10.1016/j.foodres.2022.112417>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on Partial Least squares Structural Equation Modeling (PLS-SEM)*. Sage.
- Hair, J. F., Jr, Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on Partial Least squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications, Incorporated.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2018). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/eb-11-2018-0203>
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/eb-10-2013-0128>
- Hamid, M. R. A., Sami, W., & Sidek, M. H. M. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics Conference Series*, 890, 012163. <https://doi.org/10.1088/1742-6596/890/1/012163>
- Harrison, M. R., Palma, G., Buendia, T., Bueno-Tarodo, M., Quell, D., & Hachem, F. (2022). A scoping review of Indicators for Sustainable Healthy Diets. *Frontiers in Sustainable Food Systems*, 5. <https://doi.org/10.3389/fsufs.2021.822263>
- Hazuchová, N., Stávková, J., Siedlecka, A., & Nagyová, E. (2020). Current aspects of consumer behaviour in Central European countries. In *Contributions to management science* (pp. 3–30). https://doi.org/10.1007/978-3-030-47380-8_1
- Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management & Data Systems*, 116(1), 2–20. <https://doi.org/10.1108/imds-09-2015-0382>
- Herrmann, C., Rhein, S., & Sträter, K. F. (2022). Consumers' sustainability-related perception of and willingness-to-pay for food packaging alternatives. *Resources Conservation and Recycling*, 181, 106219. <https://doi.org/10.1016/j.resconrec.2022.106219>
- Hough, G., & Contarini, A. (2023). Can low-income consumers choose food from sustainable production methods? *Current Opinion in Food Science*, 51, 101035. <https://doi.org/10.1016/j.cofs.2023.101035>
- Jadhav, H. B., Sablani, S., Gogate, P., Annapure, U., Casanova, F., Nayik, G. A., Alaskar, K., Sarwar, N., Raina, I. A., Ramniwas, S., & Khaneghah, A. M. (2023). Factors governing consumers buying behavior concerning nutraceutical product. *Food Science & Nutrition*, 11(9), 4988–5003. <https://doi.org/10.1002/fsn3.3518>
- Lavuri, R., Roubaud, D., & Grebinevych, O. (2023). Sustainable consumption behaviour: Mediating role of pro-environment self-identity, attitude, and moderation role of environmental protection emotion. *Journal of Environmental Management*, 347, 119106. <https://doi.org/10.1016/j.jenvman.2023.119106>
- Ma, J., & Kim, C. (2021). How does salespeople's personal interaction affect customers' word-of-mouth in retailing? *Journal of Asia Business Studies*, 16(6), 833–849. <https://doi.org/10.1108/jabs-03-2021-0112>
- Makowska, M., Boguszewski, R., & Hrehorowicz, A. (2024). Generational differences in food choices and consumer behaviors in the context of sustainable development. *Foods*, 13(4), 521. <https://doi.org/10.3390/foods13040521>
- Mattioli, G., & Anable, J. (2016). Gross polluters for food shopping travel: An activity-based typology. *Travel Behaviour and Society*, 6, 19–31. <https://doi.org/10.1016/j.tbs.2016.04.002>
- Messner, R., Richards, C., & Johnson, H. (2020). The “Prevention Paradox”: food waste prevention and the quandary of systemic surplus production. *Agriculture and Human Values*, 37(3), 805–817. <https://doi.org/10.1007/s10460-019-10014-7>
- Moore, S., Bulmer, S., & Elms, J. (2021). The social significance of AI in retail on customer experience and shopping practices. *Journal of Retailing and Consumer Services*, 64, 102755. <https://doi.org/10.1016/j.jretconser.2021.102755>
- Moschis, G. P., Mathur, A., & Shannon, R. (2020). Toward Achieving Sustainable Food Consumption: Insights from the Life Course Paradigm. *Sustainability*, 12(13), 5359. <https://doi.org/10.3390/su12135359>

Olsson, J., Osman, M. C., Hellström, D., & Vakulenko, Y. (2021). Customer expectations of unattended grocery delivery services: mapping forms and determinants. *International Journal of Retail & Distribution Management*, 50(13), 1–16. <https://doi.org/10.1108/ijrdm-07-2020-0273>

Otto, S., Strenger, M., Maier-Nöth, A., & Schmid, M. (2021). Food packaging and sustainability – Consumer perception vs. correlated scientific facts: A review. *Journal of Cleaner Production*, 298, 126733. <https://doi.org/10.1016/j.jclepro.2021.126733>

Paço, A. D., Shiel, C., & Alves, H. (2018). A new model for testing green consumer behaviour. *Journal of Cleaner Production*, 207, 998–1006. <https://doi.org/10.1016/j.jclepro.2018.10.105>

Pan, S., Liang, Z., & Chen, Q. (2019). When will car owners abandon car driving? Analysis based on a survey of the parking experiences of people in Changsha, China. *International Journal of Modern Physics B*, 33(15), 1950148. <https://doi.org/10.1142/s0217979219501480>

Petrescu, D. C., Vermeir, I., & Petrescu-Mag, R. M. (2019). Consumer Understanding of food quality, Healthiness, and Environmental Impact: A Cross-National Perspective. *International Journal of Environmental Research and Public Health*, 17(1), 169. <https://doi.org/10.3390/ijerph17010169>

Phan, T. X. D. (2023). Understanding the acquisition, usage, and disposal behaviours in sustainable food consumption: A framework for future studies. *Cleaner and Responsible Consumption*, 12, 100162. <https://doi.org/10.1016/j.clrc.2023.100162>

Potter, C., Bastounis, A., Hartmann-Boyce, J., Stewart, C., Frie, K., Tudor, K., Bianchi, F., Cartwright, E., Cook, B., Rayner, M., & Jebb, S. A. (2021). The Effects of Environmental Sustainability Labels on selection, purchase, and consumption of food and drink products: a Systematic review. *Environment and Behavior*, 53(8), 891–925. <https://doi.org/10.1177/0013916521995473>

Purvis, B., Mao, Y., & Robinson, D. (2018). Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*, 14(3), 681–695. <https://doi.org/10.1007/s11625-018-0627-5>

Ran, Y., Lewis, A. N., Dawkins, E., Grah, R., Vanhuysse, F., Engström, E., & Lambe, F. (2022). Information as an enabler of sustainable food choices: A behavioural approach to understanding consumer decision-making. *Sustainable Production and Consumption*, 31, 642–656. <https://doi.org/10.1016/j.spc.2022.03.026>

Shehawy, Y. M., & Khan, S. M. F. A. (2024). Consumer readiness for green consumption: The role of green awareness as a moderator of the relationship between green attitudes and purchase intentions. *Journal of Retailing and Consumer Services*, 78, 103739. <https://doi.org/10.1016/j.jretconser.2024.103739>

Soorani, F., & Ahmadvand, M. (2019). Determinants of consumers' food management behavior: Applying and extending the theory of planned behavior. *Waste Management*, 98, 151–159. <https://doi.org/10.1016/j.wasman.2019.08.025>

Thøgersen, J., Pedersen, S., & Aschemann-Witzel, J. (2018). The impact of organic certification and country of origin on consumer food choice in developed and emerging economies. *Food Quality and Preference*, 72, 10–30. <https://doi.org/10.1016/j.foodqual.2018.09.003>

United Nations. (2024). *Goal 12, Ensure sustainable consumption and production patterns*. UN, Department of Economic and Social Affairs. Retrieved October 18, 2024, from <https://sdgs.un.org/goals/goal12>

Vitell, S. J. (2014). A case for Consumer Social Responsibility (CNSR): including a selected review of Consumer Ethics/Social Responsibility Research. *Journal of Business Ethics*, 130(4), 767–774. <https://doi.org/10.1007/s10551-014-2110-2>

Waldman, K. B., Giroux, S., Blekking, J. P., Nix, E., Fobi, D., Farmer, J., & Todd, P. M. (2022). Eating sustainably: Conviction or convenience? *Appetite*, 180, 106335. <https://doi.org/10.1016/j.appet.2022.106335>

Zámková, M., Rojík, S., Prokop, M., Činčalová, S., & Stolin, R. (2022). Czech Consumers' Preference for Organic Products in Online Grocery Stores during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 19(20), 13316. <https://doi.org/10.3390/ijerph192013316>

Zeybek, Ö., & Ülengin, B. (2021). The effect of sales promotions intensity on volume and variability in category sales of large retailers. *Journal of Marketing Analytics*, 10(1), 19–29. <https://doi.org/10.1057/s41270-021-00121-y>

Funding: This research was funded by the grant No. IGA-PEF-TP-23-012 of the Grant Agency of the Faculty of Business and Economics at Mendel University in Brno and by the project CZ.02.1.01/0.0/0.0/16_017/0002334 Research Infrastructure for Young Scientists, co-financed by Operational Programme Research, Development and Education.

Data Availability Statement: More information and data more information and data on request by e-mail.

Author Contributions: Conceptualisation: *IB, MP*; methodology: *JS, IB*; data analysis: *IB, MP, VŠ*, writing—original draft preparation: *IB, MP, JS, VŠ*, writing; review and editing: *IB, MP, JS*; visualisation: *MP*. All authors have read and agreed to the published version of the manuscript.

Irena BALÁKOVÁ is the academic staff at the Department of Marketing and Trade, Faculty of Business and Economics, Mendel University in Brno, Brno, Czech Republic. Research interests: sustainable consumer behavior, environmental competences of consumers, quantitative methods in marketing research.

ORCID ID: <https://orcid.org/0000-0002-4331-4187>

Michal PŠURNÝ is the early academic researcher (postdoctoral researcher) at the Department of Marketing and Trade, Faculty of Business and Economics, Mendel University in Brno, Brno, Czech Republic. Research interests: consumer behavior, online marketing, models of consumer behavior, neuromarketing tools, sustainable consumption.

ORCID ID: <https://orcid.org/0000-0001-5368-0714>

Jana STÁVKOVÁ is the Professor at the Department of Marketing and Trade, Faculty of Business and Economics, Mendel University in Brno, Brno, Czech Republic. Research interests: application of mathematical and statistical methods with a focus on consumer behavior. Models of consumer behavior, changes in consumption behavior that are related to changes in development in society, and sustainability.

ORCID ID: <https://orcid.org/0000-0002-0889-0218>

Veronika ŠVECOVÁ is a graduate and junior researcher at the Faculty of Business and Economics at Mendel University in Brno, Brno, Czech Republic. Research interests: sustainability and digitalisation in consumer behavior.

ORCID ID: <https://orcid.org/0009-0002-8103-1687>

Copyright © 2024 by author(s) and VSI Entrepreneurship and Sustainability Center

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>



Open Access