Article

Consumers' Attitude towards Sustainable Food Consumption during the COVID-19 Pandemic in Romania

Iulia C. Muresan [1] , Rezhen Harun [2],*, Felix H. Arion [1] , Anca Monica Brata [3] , Ioan Aurel Chereches [4], Gabriela O. Chiciudean [1], Diana E. Dumitras [1] , Camelia F. Oroian [1] and Olivia Paula Tirpe [5]

[1] Department of Economic Sciences, University of Agricultural Sciences and Veterinary Medicine, 400372 Cluj-Napoca, Romania; iulia.muresan@usamvcluj.ro (I.C.M.); felixarion@usamvcluj.ro (F.H.A.); gabriela.chiciudean@usamvcluj.ro (G.O.C.); ddumitras@usamvcluj.ro (D.E.D.); camelia.oroian@usamvcluj.ro (C.F.O.)

[2] Department of Agribusiness and Rural Development, College of Agricultural Sciences Engineering, University of Sulaimani, Sulaimani 5100, Iraq

[3] Department of Engineering of Food Products, Faculty of Environmental Protection, University of Oradea, 26 Gen. Magheru St., 410087 Oradea, Romania; abrata@uoradea.ro

[4] Department of Automotive Engineering and Transports, Faculty of Automotive, Mechatronics and Mechanical Engineering, Technical University of Cluj-Napoca, Bulevardul Muncii 103-105, 400641 Cluj-Napoca, Romania; aurel.chereches@auto.utcluj.ro

[5] Department of Animal Husbandry and Agritourism, Faculty of Environmental Protection, University of Oradea, 26 Gen. Magheru St., 410087 Oradea, Romania; otirpe@uoradea.ro

* Correspondence: rezhen.rashid@univsul.edu.iq

Abstract: The COVID-19 pandemic affected consumers' behavior worldwide. This paper aims to analyze consumers' sustainable food behavior during the COVID-19 pandemic. The research was based on an online survey during May–October 2020 among 859 Romanian consumers. Principal component analysis and cluster analysis were employed to group the consumers based on their behavior. Furthermore, the binary-logistic regression was used to identify the socio-demographic profile of the identified groups. Based on the cluster analysis, the consumers were grouped into three main groups: indifferent, pro-environment protection, and health concerned. The results indicate a positive attitude towards sustainable food behavior. Consumers' attitude towards sustainable food choice is mainly influenced by age and education level. The study offers valuable information for future public policy and marketing campaign regarding sustainable food behavior.

Keywords: food consumption; sustainability; COVID-19; Romania

1. Introduction

There is a well-accepted consensus that the future wellbeing of mankind is related to a sustainable approach of the private consumption pattern assumed by all individuals, which is desirable and important [1,2], but unfortunately, until now, it is considered to be the principal factor responsible for environment degradation [3,4]. The consumption issue was recently added within the debates related to sustainability and environment [5] and shortly, the sustainable consumption became the main theme [6,7]. Therefore, in 1994, at the Oslo Symposium, a definition of sustainable consumption was adopted: "the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardies the needs of future generations" [8].

Companies understood the importance of sustainable development and consumption and introduced this theme into their current policies to preserve a good reputation on the market [9]. Even if, theoretically, sustainable consumption is accepted by society, unfortunately, it does not always generate a sustainable consumption behavior [1], which is more likely related to the awareness of the long-term consequences over the natural or social

environment [10,11], being a controlled consumption for the sake of the environment [12]. Strictly related to sustainable consumption, it is necessary to analyze consumer behavior to build adequate private strategies and public policies meant to reduce the negative impact over sustainable development. It is considered that there is a lot of potential in developing green consumerism among individuals [13], but it is necessary to analyze the present situation.

The pandemic period has determined significant changes regarding consumer behavior surrounding food [14–16]. An Italian study reported that during the first lockdown, an important segment of consumers ate more than usual [14], a fact encountered among the Serbian consumers too [15]. It was noticed that an important percentage of Italian consumers continued to eat healthy and some even healthier than before [14]. In Serbia, the pandemic had an important consequence on online commerce and many consumers started to purchase organic food online [15]. A cross-country study concluded that consumers from Denmark, Germany, and Slovenia reduced their consumption of fresh food [16].

Previous studies underlined changes in consumers' behavior during the COVID-19 pandemic, with fewer accents on sustainable consumption. To respond to the current trends toward a more sustainable-oriented consumption, one should understand the current habits and perceptions of consumers. This study analyzed the perception of residents from the North-West Development Region of Romania regarding sustainable food behavior during the COVID-19 pandemic. The paper is organized into six main parts. After the introduction part, the literature review section explores consumers' perceptions of sustainable behavior and the factors affecting their behavior. The third part presents the research and analysis methods employed. In the fourth part, the main results are presented, while the fifth part synthesizes the discussions. The paper ends with the conclusions section.

2. Literature Review

2.1. Perception of Sustainable Behavior

Given the fact that environmental issues result in increasing pressure on society, sustainable consumption is perceived as one of the key factors that could solve this problem [5,17,18] throughout consumers' choices [19]. On the one side, it has been observed that a pro-environmental concern leads to a positive attitude towards sustainable consumption [9,20–23]. On the other side, some scholars believe that the consumer is not ready to change their consumption patterns [24] even if a cognitive level of happiness is being associated with a pro-social behavior [25,26].

Anyway, it is impetuous to identify consumers' real motives or concerns that could lead to sustainable consumption. Studies [24,27] have highlighted that sustainable consumption is a very complex term with multi-dimensional meanings, as discussed in many studies [28–32].

It is often associated with voluntary simplicity, which is a real movement against consumerism, where individuals decide to restrain their consumption without exterior constraints but by ones' free will [33–36]. The consumers' behavior in this case includes ethical considerations regarding the impact of their consumption patterns over the environment or over society [34]. The most frequent concern is related to the environment. Among every society, a new type of consumer is being formed—the green consumer—who acts in an environmentally friendly manner [37,38]. This type of behavior is focused mainly on recycling, the use of environmentally products, good waste management, and limited consumption [37,38]. A typical green consumer is one who avoids products that could harm the health or the environment, cause waste, or threaten animals [39] or is willing to pay more for environmentally friendly products as an act of support for environmental problems [40]. This segment comprises mainly females with at least one child, preoccupied by safety [40]. A green behavior is the one oriented towards protecting resources and a process of responsible buying [41,42].

Dangelico et al. [31] concluded that green purchase satisfaction is a stronger predictor of purchase frequency. Roman et al. [9] focused on whether the concerns for the environ-

ment are reflected in consumers' purchases and found that even if there is a willingness to protect the environment through a sustainable behavior, the high prices of green products or the lack of information often leads to a different behavior. Another Romanian study underlined the importance of health in choosing a restaurant, meaning that consumers are interested in restaurants that express concern for sustainable consumption by offering healthy meals, with raw materials that are sourced directly from the producers [43] while for Polish consumers, the health value when choosing food products was intensified during the pandemic [44]. In Pakistani, the preoccupation for sustainable consumption led to a scale that measures the aspects of meat consumption [45]. The existing gap between serious environmental concerns and positive attitudes towards it and inappropriate behavior when it comes to purchases was also emphasized by Young et al. [46] in the UK, where many respondents declared that they struggle to link their pro-environmental attitudes to their purchases. Due to a lack of time, product search, or information, their purchase behavior often becomes unsustainable. The attitude–behavior gap was investigated by other scholars too [46–50], related to variate types of sustainable consumption (food, tourism, energy etc.). Its importance was underlined by Prothero et al. [51], who considers that, if it is left unaddressed, the gap will produce a lot of negative consequences, mainly for the producers of sustainable products. A solution to close the gap within the consumption area is represented by incentives and single labels [46]. Tanner and Kanst [13] observed that green consumerism was closely approached by scholars from the point of view of the relationship between environmental attitudes and behaviors and grouped the variables of influence over the environment into four categories (specific attitudes, perceived barriers, knowledge, and personal norms). Their research among Swiss consumers highlighted that positive attitudes towards the environment, local production, or fair trade are important predictors of green purchases, while time is an important barrier. However, besides the fact that many persons have environmental concerns, the market share of ethical foods remains at a very low level [46] because of the time and space needed in people's busy lives.

2.2. Factors Affecting Consumers' Sustainable Behavior

Sustainable consumption and the role of the consumer were analyzed by different scholars [52–55]. Vecchio and Annunziata [52] concluded that there are three types of consumers according to their perception of sustainable food grouped into three clusters: (i) responsible food consumer, the largest of all, gathers mature consumers aged between 29 and 35 years, who pay a lot of attention to the food they eat, have a special care for the environment, and prefer local food; (ii) inattentive food consumer reunites younger students coming from rural areas, with medium incomes, not interested about the food or the environment; and (iii) potentially sustainable food comprises individuals who consider it difficult to find and purchase sustainable food, although they express concerns regarding environmental issues. Guzman et al. [53] analyzed the low impact of sustainable consumption behavior using a self-report scale to evaluate three dimensions: the quality of life, the care for the environment, and the resources for future generations. The authors obtained two clusters: (i) moderate and (ii) sustainable. The moderate group comprises mature and highly educated individuals who care for the environment and adopt a pro-environmental behavior by reusing packages, reducing overuse of products, and other specific actions. Still, even if they are pro-environmental friendly, this group of consumers purchase a small amount of ecological products and a high percentage are not willing to spend extra money for this category of product. The second cluster was labeled sustainable, dominated by mature individuals, mostly highly educated females, in line with previous studies [40,56–61]. A study conducted by Sesini et al. [54] obtained four clusters: (i) consumption of organic products and eco-friendly food characterized by an increased interest towards the environment, health, and organic food; (ii) consumers' practices related to fashion and clothing; (iii) sustainable practices related to household and recycling; and (iv) ethical practices linked to tourism, commerce, and other services. Their findings suggest that the concept of sustainability covers a wide range of topics,

highlighting that food consumption is the most important. Fuentes [55] identified two clusters named: (i) the mature and product cautious comprising mature people, with high incomes, usually willing to purchase eco-friendly products but only after good market research; and (ii) the young and socially pressured, a group of young people, with lower incomes, not so willing to pay extra for environmentally friendly items, even if they have knowledge about them.

Sustainable consumer behavior is deeply influenced by socio-demographical characteristics. Regarding the variable age, previous studies indicate a stronger interest for the environment among the mature segment (30–44 years old), observing a lack of interest in the environment among the eldest people [9,62–66] even if they are willing to pay more for green products [67]. The segment of consumers aged 18–45 years is more environmentally concerned but more price sensitive [57,60]. Kadic-Maglajlic et al. [10] observed that for the youngest segment, pro-environmental engagement represents a strong predictor of a pro-environmental behavior. The presence of children within the household is another factor of influence of sustainable consumption [40–43,46–57].

Gender is another predictor of sustainable consumption. Many studies concluded that females are more environmentally concerned and willing to purchase eco-friendly products [40,57–61,68] even if males have generally better knowledge about environmental problems [69,70]. A Romanian study about organic food consumption indicated an almost equal segment of males and females who purchase green products [71]. Education is also a strong predictor of sustainable consumption, as the higher the education level is, the greater the probability of adopting a green behavior [72,73]. Because of the stereotype created around women who are perceived as having greener behavior, an interesting study clarified that in the case of men, green consumption is associated with a long-term commitment towards their partner [74]. Regarding the main motives of green behavior, Tung et al. [75] observed that for men, cognitive involvement was the prominent determinant, while for women, this was green-self-identity. Based on all aspects mentioned above, the following research questions were addressed: What factors influence consumers' sustainable behavior during the COVID-19 pandemic? How can consumers be segmented based on the identified factors? To what extent are socio-demographic characteristics influencing consumers' sustainable behavior?

3. Materials and Methods

The main objective of the research was to determine the perceptions of residents from the North-West Development Region of Romania related to sustainable food choices during the COVID-19 pandemic. First, a review of the existing literature was conducted, followed by an online survey during May–October 2020.

The North-West Development Region of Romania comprises of 6 counties: Bihor, Bistrita-Nasaud, Cluj, Maramures, Satu-Mare, and Salaj, with a total surface of 34,159 km^2 representing 14.32% of the total surface of Romania [76]. According to the National Institute of Statistics [77], in 2020, the population was 2,547,429 persons, in third place after the North-East Development Region and South-Muntenia Development Region. In 2018, the gross domestic product (GDP) of the region was 24.9 billion Euro, representing 12.2% of the national, ranking the region in second place among the eight development regions of Romania [78].

The research population was represented by inhabitants over 18 years and less than 70 years old. According to the data presented by the National Institute of Statistics, in 2020, in the research area, 50.1% of the inhabitants older than 18 years were female, while 49.9% were male. At the region level, 45.4% of the population lived in a rural area, while 54.6% lived in an urban area. Analyzing the distribution of the research population by county, the larger number of inhabitants is in Cluj County (Table 1).

Table 1. Socio-demographic characteristics of the respondents.

Characteristics		Research Population * (%)	Sample (%)
Gender	Female	50.1	61.1
	Male	49.9	38.9
Age	18–29 years	20.4	29.0
	30–39 years	21.2	24.1
	40–49 years	22.3	18.6
	50–59 years	18.1	14.9
	>60 years	17.9	13.4
Education level	Less than 8 classes	n.a.	2.8
	High school	n.a.	23.2
	Upper studies	n.a.	74.0
Monthly net household income (RON)	<2800	n.a.	19.9
	2801–4200	n.a.	24.1
	4201–5600	n.a.	19.7
	>5601	n.a.	36.3
Occupation	Student	n.a.	11.1
	Unemployed	n.a.	1.7
	Retired	n.a.	10.0
	Employed	n.a.	62.7
	Entrepreneur	n.a.	9.1
	Maternity leave	n.a.	4.0
	Other	n.a.	1.4
Place of residency	Rural	45.4	26.1
	Urban	54.6	73.9
County	Bihor	22.0	19.1
	Bistrita-Nasaud	10.6	10.8
	Cluj	28.4	39.6
	Maramures	18.1	16.5
	Satu Mare	13.1	9.0
	Salaj	7.9	5.0

Note: RON is Romanian leu; for the period May-October 2020 the average exchange rate of 1 USD = 4.2182 RON; * Based on data provided by the National Institute of Statistics [77] n.a.—data are not available.

3.1. Questionnaire Design

To fulfill the purpose of the research, an online survey based on a questionnaire was conducted. Before starting the survey, the participants were informed about the aim of the study and the protection of the GDPR data. A filter question was used to determine if the respondents lived in the research area. The collected data can be divided into two main sections: (i) socio-demographic characteristics (gender, age, education, monthly household income, place of residency, county), and (ii) 11 items related to sustainable consumption during the COVID-19 pandemic, adapted from Tanner and Kast [13], and evaluated on a Likert-scale type from 1 to 5, where 1 means strongly disagree and 5 means strongly agree.

3.2. Sample Size

Using the stratified random sample method with a confidence level of 95% and 3.5% margin of error, a sample size of 784 was determined. A total number of 1103 questionnaires were collected from which 859 were validated in the end (Table 1).

The analysis of the socio-demographic characteristics revealed that 61.1% of the respondents were female while 38.9% were male. This could be explained by the fact that in general, women are responsible for food purchasing in the family [79–81]. Regarding the age of the respondents, it was noticed that the majority (53.1%) were less than 40 years old. It is known that the younger generation is more open to surveys in general and online surveys in particular [82]. Related to the education level, around 75% of the respondents had a university degree, with a monthly average household income higher than 5600 RON. During the analyzed period, the average household income in the North-West Development Region of Romania was 5616.97 RON [77]. Around 40% of the respondents were from Cluj County (this county has the larger population in the research area), while more than 70% were from the urban area. The low respondent rate of the residents from the rural area could be related to the fact that in general, rural inhabitants are older with limited access to the internet [83].

3.3. Statistical Analysis

The data were analyzed using SPSS 23.0 software package. The socio-demographic profile of the respondents was determined using the descriptive statistics. The internal consistency of the 11 items and the reliability of the data were tested using Cronbach's alpha ($\alpha = 0.909$). The results exceeded the significance level of 0.6 [84]. Principal component analysis (PCA) with Varimax rotation was used to access the factor structure of the 11 items used to identify the respondents' sustainable food choices. Factors with an eigenvalue higher than 1 and factor loading higher than 0.4 were considered significant and included in the analysis [84]. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity were used to determine the fitness of the data.

Furthermore, the factors loaded after the PCA were used for a cluster analysis. A hierarchical cluster analysis based on Ward's algorithm was conducted to isolate different groups within the sample and examine their common features. Subsequently a non-hierarchical cluster analysis (K-means clusters) was performed based on the regression factors scores identified in the PCA.

The Shapiro–Wilk test was used to test the normality of the items ($p < 0.05$), and the Kruskal–Wallis test was used to compare the groups. The Chi-square test was conducted to identify if there were any significant differences among the groups regarding the socio-demographic characteristics. Binary logistic regression was employed to identify the main socio-demographic characteristics of the groups.

4. Results

4.1. Perceptions on Sustainable Food Behavior

The Bartlett test of sphericity was significant (Chi-square = 5689.920, $p = 0.000$), providing support for the validity of data. The Kaiser–Meyer–Olkin overall measure of sampling was 0.935, indicating that the data were appropriate for PCA [84,85]. The principal component analysis with varimax rotation resulted in two factor solutions, accounting for 62.08% of the variance (Table 2). The reliability test was conducted for each of the emerged factors, indicating reliability coefficients from 0.77 to 0.89, suggesting a good internal consistency among the attributes of each component [84].

Table 2. Principal component analysis results.

Eigenvalue	Variance %	Factor	Item	Factor Loading	Mean	SD
5.828	52.986	Sustainable consumption α = 0.896 Mean = 3.98 SD = 0.249	It is good to support domestic agriculture by buying regional products (S1)	0.810	4.36	0.889
			Health issues play an important role for me when I plan my menus (S2)	0.778	4.22	0.937
			It is important to me to support local farmers when making purchase (S3)	0.778	4.13	0.927
			I try to avoid food waste (S4)	0.726	4.22	0.907
			I buy mainly local products (S5)	0.675	3.87	0.957
			Genetically engineered food products are dangerous for human beings (S6)	0.634	3.85	1.122
			I pay attention to fair trade labels (S7)	0.620	3.72	0.967
			I would be willing to pay a higher price to support small growers from third-world countries (S8)	0.528	3.50	1.042
1.001	9.101	Environment α = 0.779 Mean = 3.58 SD = 0.291	I am involved in environmental protection actions (E1)	0.860	3.26	1.067
			I recycle more food packaging (E2)	0.748	3.82	1.066
			I pay more attention to save water and energy while cooking (E3)	0.723	3.67	1.105
Total variance %	62.087	α = 0.909				

The first component labeled sustainable consumption explained 52.98% of the variance, and consisted of eight items. With a mean of 3.98 ± 0.249, this component indicates that the respondents supported local producers and were preoccupied with their health. Higher scores were registered for the items related to the support of domestic agriculture (4.36 ± 0.889), followed by items related to the importance of health in menu planning (4.22 ± 0.937) and food waste reduction (4.22 ± 0.907). Even if they agree that "it is good to support domestic agriculture by buying regional products", this was observed less in their behavior of buying local products (3.87 ± 0.957). This can be explained by the fact that local products are more expensive, and the COVID-19 pandemic may have affected their income [86]. At the same time, it was noticed that the respondents are less open to supporting farmers from third-world countries by paying more for the products obtained there (3.5 ± 1.042) (Table 2).

The second component labeled environment concern explained 9.1% of the variance, and consisted of three items. This component registered a score of 3.58 ± 0.291, indicating that the respondents were quite neutral regarding their concern for environment protection. It was noticed that respondents agreed more with recycling food packaging (3.82 ± 1.066) than participating in environment protection actions (3.26 ± 1.067) (Table 2).

4.2. Consumers' Segmentation Based on Sustainable Food Behavior

The two-step cluster analysis using the two dimensions from the principal component analysis led to three clusters of consumers. The identified clusters were labeled according to the factors that were considered as distinctive for their sustainable food behavior: cluster 1: indifferent; cluster 2: pro-environment protection; and cluster 3: health concerned. The final cluster centers are reported in Table 3 and the multivariate statistics indicated significant differences among the identified clusters ($p < 0.001$). The Kruskal–Wallis test indicated that the clusters are highly homogeneous ($p < 0.001$) (Table 4).

Table 3. Final cluster centers.

Factors	Cluster 1	Cluster 2	Cluster 3	F-Value	Significance
Sustainable consumption	−1.99772	0.12358	0.50755	537.271	0.000 ***
Environment	−0.48064	0.66851	−0.99575	635.229	0.000 ***

***—$p < 0.001$.

Table 4. Factors' mean.

Factor	Cluster 1	Cluster 2	Cluster 3	Kruskal–Wallis χ^2 Statistic	*p*-Value
Sustainable consumption	2.55 (0.787)	4.35 (0.434)	4.1395 (0.456)	$\chi^2 = 288.432$ df = 2	0.000 ***
Environment	2.58 (0.840)	4.16 (0.492)	2.87 (0.612)	$\chi^2 = 570.735$ df = 2	0.000 ***

***—$p < 0.001$; ()—SD.

Cross-tabulation and Pearson's χ^2 statistics were used to identify the socio-demographic profile of each consumer's clusters based on their gender, age, education, monthly household income, and place of residency (Table 5). Statistically significant differences among the clusters were found with respect to gender, education, monthly net household income, occupation, and place of residency.

The first cluster of consumers, indifferent, accounts for 11.7% of the sample. Consumers from the first cluster were not concerned about health issues nor supporting local producers in their purchase habits, nor by environment protection actions. They were mainly male (52%), with a monthly net house income less than 4200 RON in more than 50% of the cases. At the same time, this group was characterized by a lower education level compared with the other two groups (8% had less than 8 classes, while 39.0% had a high school degree). This could be linked to the fact that a larger number of students belong to this group.

The second cluster of consumers, pro-environment protection, is the larger group and represents 56.2% of the sample. The pro-environment protection group is mainly represented by females (61.9%) with a university degree (79.3%) and a monthly net household income higher than 4200 RON in 59.0% of the cases. This is the most educated cluster, with a direct impact on their income. This is not surprising, since other scholars have noticed that women tend to be more pro-environmental than men [40,56–61,68].

The third cluster, health concerned, groups consumers preoccupied mainly with their food source and sustainable consumption and represents 32.1% of the sample. In this cluster, 64.5% of the cases were women, who had a university degree in 72.5% of the cases. Not surprisingly the health-concerned cluster contained a larger percentage of retired persons (11.2%).

Binary logistic regression was used to determine to what extent gender, age, education, income, occupation, and place of residency affected the chance of belonging to each of the three identified groups of consumers. Occupation and place of residency were not significant; thus, they were excluded from the final model (Table 6). The dependent variable took a value of one if the respondent belonged to that cluster and otherwise zero. The results indicated that being male increased the chances of belonging to the group indifferent (odds ratio = 1.656, $p = 0.024$). Compared with people aged 18–29 years, the chances of belonging to this cluster were lower for those aged over 50 years (odds ratio = 0.463, $p = 0.031$; odds ratio = 0.271, $p = 0.003$). At the same time, the chances of belonging to the indifferent group were lower for the respondents with at least a high school degree compared with the group with less than eight classes (odds ratio = 0.385, $p = 0.001$; odds ratio = 0.147, $p = 0.000$). With respect to income, the chances of belonging to the first cluster were lower for respondents with a monthly net household income ranging from 4201–5600 RON (odds ratio = 0.368, $p = 0.008$) compared with respondents with less than a

2800 RON monthly net household income. Regarding cluster 2 pro-environment protection, the chances of belonging to this group were higher for respondents who were older than 40 years (odds ratio = 1.565, p = 0.028; odds ratio = 1.780, p = 0.009; odds ratio = 1.759, p = 0.014) compared to the group aged 18–29 years. Having a high school degree reduced the chances of belonging to cluster 2 (odds ratio = 0.616, p = 0.009) compared with the group with less than eight classes. Being 40–59 years old decreased the chances of belonging to cluster 3 compared with the group aged 18–29 years old.

Table 5. Clusters socio-demographic profile.

Characteristics	Cluster 1 (n = 100, 11.7%)	Cluster 2 (n = 483, 56.2%)	Cluster 3 (n = 276, 32.1%)	Chi-Square DF	p-Value
Gender					
Female	48 (48.0%)	299 (61.9%)	178 (64.5%)	χ^2 = 8.690 df = 2	0.013 *
Male	52 (52.0%)	184 (38.1%)	98 (35.5%)		
Age					
18–29 years	35 (35.0%)	119 (24.6%)	95 (34.4%)		
30–39 years	26 (26.0%)	116 (24.0%)	65 (23.6%)		
40–49 years	19 (19.0%)	97 (20.1%)	44 (15.9%)	χ^2 = 14.494 df = 8	0.070
50–59 years	13 (13.0%)	79 (16.4%)	36 (13.0%)		
>60 years	7 (7.0%)	72 (14.6%)	36 (13.0%)		
Education					
Less than 8 classes	8 (8.0%)	7 (1.4%)	9 (3.2%)		
Medium studies	39 (39.0%)	93 (19.3%)	67 (24.3%)	χ^2 = 35.074 df = 4	0.000 ***
Upper studies	59 (59.0%)	383 (79.3%)	200 (72.5%)		
Monthly net household income (RON)					
<2800	30 (30.0%)	88 (18.3%)	53 (19.2%)		
2801–4200	29 (29.0%)	110 (22.8%)	67 (24.3%)	χ^2 = 15.095 df = 6	0.020 *
4201–5600	11 (11.0%)	96 (19.9%)	63 (22.8%)		
>5601	30 (30.0%)	189 (39.1%)	93 (33.7%)		
Occupation					
Student	15 (15.0%)	41 (8.5%)	39 (14.1%)		
Unemployed	0 (0.0%)	15 (3.1%)	0 (0.0%)		
Retired	7 (7.0%)	48 (9.9%)	31 (11.2%)		
Employed	55 (55.0%)	311 (64.4%)	173 (62.7%)	χ^2 = 28.003 df = 12	0.006 **
Entrepreneur	15 (15.0%)	41 (8.5%)	22 (8.0%)		
Maternity leave	6 (6.0%)	19 (3.9%)	9 (3.3%)		
Other	2 (2.0%)	8 (1.7%)	2 (0.7%)		
Place of residency					
Rural	32 (32.0%)	123 (25.5%)	69 (25.0%)	χ^2 = 2.080 df = 2	0.354
Urban	68 (68.0%)	360 (74.5%)	207 (75.0%)		

*—p < 0.05; **—p < 0.01; ***—p < 0.001.

Table 6. Binary logistic regression results.

Variables	Cluster 1				Cluster 2				Cluster 3			
	Odds Ratio	*p*-Value	95% CI		Odds Ratio	*p*-Value	95% CI		Odds Ratio	*p*-Value	95% CI	
			Lower	Higher			Lower	Higher			Lower	Higher
Gender												
Male [a]	1.656	0.024 *	1.070	2.563	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Age [b]												
30–39 years	0.787	0.395	0.456	1.367	1.249	0.233	0.867	1.798	0.726	0.100	0.496	1.063
40–49 years	0.735	0.331	0.395	1.367	1.565	0.028 *	1.049	2.336	0.598	0.018 *	0.391	0.915
50–59 years	0.463	0.031 *	0.230	0.931	1.780	0.009 **	1.152	2.751	0.599	0.028 *	0.379	0.947
>60 years	0.271	0.003 **	0.120	0.643	1.759	0.014 *	1.124	2.753	0.702	0.132	0.443	1.112
Education [c]												
Medium studies	0.385	0.001 **	0.224	0.661	0.616	0.009 **	0.429	0.884	0.705	0.066	0.486	1.023
Upper studies	0.147	0.000 ***	0.087	0.248	1.151	0.273	0.895	1.480	0.604	0.000 ***	0.467	0.728
Monthly net household income [d] (RON)												
2801–4200	0.787	0.406	0.447	1.385	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4201–5600	0.368	0.008 **	0.175	0.775	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
>5601	0.698	0.243	0.382	1.275	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

[a]—compared to female; [b]—compared to 18–29 years; [c]—compared to less than 8 classes; [d]—compared to < 2800 RON *—$p < 0.05$; **—$p < 0.01$; ***—$p < 0.001$; n/a—not representative.

5. Discussion

The results of the study, which aimed to determine residents' perceptions from the North-West Development Region of Romania related to sustainable food choices during the COVID-19 pandemic, revealed a positive perception of sustainable food consumption. However, a gap between attitudes and actual behaviors was observed as in previous studies [46–49]. On the one hand, respondents supported local producers, being aware of the importance of domestic agriculture, and were concerned about their health and waste reduction when planning a food menu. On the other hand, even if residents' perception of the sustainable food choices was positive, the study reveals that their purchasing behavior was very different when it came to buying local products or supporting third-world farmers. Possible explanations could be related to the higher prices of local foods [9] compared to prices in supermarket chains or simply to the fact that the Romanian consumer is not ready to change their consumption patterns [24], as part of a complex and long process. Another interesting fact is related to the environmental issue towards which the respondents remained neutral, without any interest in participating in protection actions, with their actual behavior being limited to recycling food packaging.

Consumers' segmentation based on sustainable food behavior highlighted three groups of individuals, which were labeled according to their perception of sustainable food consumption. The number of clusters differs from one study to the other but varies between two and four. Thus, the first cluster, indifferent, is the smallest of all and consisted of consumers who were not concerned by health issues nor by support for local producers, nor by the environmental problems. Just like previous findings, this group was dominated by men, considered by scholars to have less interest in environment protection even if they have better knowledge about it [69,70]. Within an Italian study, this group was named the inattentive food consumer cluster [53] and illustrated the same behavior as in the current Romanian research. The chances of belonging to this group were higher for Romanian individuals over 50 years old, confirming that older people are less interested in environmental issues [9,62–65].

A positive aspect is that the larger cluster comprised respondents interested in pro-environment protection actions. This group is educated with a high income and dominated by women, reinforcing previous findings that green behavior is encountered more among women [40,56–61,68] and is related to a higher education level [69,70]. The pro-environmental cluster was also the largest in the study conducted by Vecchio and Annunziata [52] entitled the responsible food consumer cluster with similar socio-demographic characteristics. The large size of this group confirms what previous scholars have found, meaning that environment protection is the most frequent concern among individuals, having as a direct consequence the appearance of the green consumer [37,38]. This cluster is similar to the sustainable cluster identified by Guzman et al. [53], also dominated by women. The pro-environmental attitude of this group should be translated into pro-environmental behavior based on recycling, the use of environmentally friendly products, limitation of consumption [37,38], willingness to pay higher prices for this type of product [40], and responsible purchases [41,42], but unfortunately it does not always translate into actual sustainable purchases, a fact observed in other countries as well [44]. Similar results were obtained by other Romanian scholars, who observed that price is the main barrier of responsible pro-environmental behavior [9]. So, companies should pay attention to residents' environmental concerns when they offer food products through higher care for reusable packaging, high prices for eco-friendly products, or even campaigns to stimulate their customers to show eco-friendly actions. Companies that understand the new green consumer and their preferences will have a competitive advantage in the market [9]. The results of the current study indicate that individuals older than 40 years are more preoccupied by environmental issues, unlike other studies, which observed that environmental interest is strong for the segment of mature people and decreases for older people [9,62–65]. The increasing interest in environmental issues among adults could be explained by the fact that the majority of individuals have their own family and children at that age, which is when they are aware about the importance of a green future [40].

The third group of respondents is health concerned, which is another characteristic of a green consumer who will not purchase food that could harm him or others or the environment [39]. Health concerns were previously observed among Romanian consumers when they chose a restaurant [45]. To them, the source of food is very important and thus, they are willing to support local food producers. This cluster comprises more women than men, with a higher education degree and an important percentage of retired people. A similar cluster was found by Sesisni et al. [54], the consumption of organic products and eco-friendly food cluster, which was the largest and characterized by an increased interest towards the environment, health, and organic food.

6. Conclusions

A substantial number of studies have underlined that consumers have positive attitudes with respect to sustainable food behavior but also that the behavior is influenced by the socio-demographic characteristics of consumers. In this study, the attitudes of residents from the North-West Development Region of Romania towards sustainable food behavior during the COVID-19 pandemic were explored. The results revealed that consumers' attitudes towards sustainable food behavior are mainly influenced by age and education level. At the same time, the health issues represent an important aspect that defines food consumption behavior.

The results are also useful for agrifood companies by offering important insights into current consumers' behavior. The findings of the study are usable for consumers, businesses, and policymakers in their actions related to sustainable food behavior and consumption. Consumers are now oscillating between the comfort of returning to their habits and the precaution of more resilient consumption, as a result of the existing gap between attitudes and actual behavior. Understanding consumer segmentation and accepting the segment they belong to will help them to act more efficiently in the market. Nevertheless, businesses would directly benefit from creating easily available consumption

patterns and designing adequate marketing campaigns based on the current behavior exposed in this study and not on the short-term attitudes of consumers. Last, but not least, policymakers are the ones that will have the responsibility to act, through their policies and information campaigns, in favor of changing the behavior of consumers, from an affective one—involving consumers' feelings and emotions—to a behavioral one, being the trigger that will determine the reaction, and, finally, to a cognitive one, by changing the consumers' knowledge about sustainable food consumption. At the same time, this study provides a first glance at consumers' behavior during the COVID-19 pandemic in the North-West Development Region of Romania.

Limitations of the Study

This research has some limitations related to the research area. The findings are not immediately transferable to the other development regions of Romania but offer a comprehensive image of the current food consumption behavior in one of the main regions and may represent a basis for an extended study in the other development regions. At the same time, the research comprised mainly respondents from the urban area with upper studies, which does not necessarily represent the population of Romania. Although this may have led to an over-representation of individuals concerned with sustainable consumption, it is expected that similar results would be observed in other urban areas in Romania when questionnaires were self-administrated, with such an approach often being exposed to measurement errors. More research would be valuable to understand the changes in terms of sustainable food consumption during the COVID-19 pandemic and its impacts on the environment, society, and economy.

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