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Food Choices and Their Impact on Health and Environment

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Abstract: Food choices are complex and highly variable, even over short periods, as they are influenced by numerous psychological, social, and cultural factors, in addition to biological and economic ones. Consumer choices are increasingly complex because of the growing quantity and variety of available food products, which also affects individuals' environments. This paper is part of a larger study on health-related food choices, and it discusses how food choices affect the environment. To achieve the research goal, classes of respondents that are homogeneous in their food choices were identified. The authors used an algorithm to build classification trees and found that health status is determined by respondents' age and food consumption habits. The paper demonstrates that understanding individual nutritional choices is a prerequisite for changing consumption habits and shaping healthy behavior, which is in line with the principle of sustainable development through sustainable consumption. The findings are relevant to public health researchers and practitioners who wish to understand the relationship between nutritional practices and health in line with sustainable development.

Keywords: environment; sustainable consumption; food choices; health; decision trees; classification trees

Citation: Szalonka, K.; Stańczyk, E.; Gardocka-Jałowiec, A.; Waniowski, P.; Niemczyk, A.; Gródek-Szostak, Z. Food Choices and Their Impact on Health and Environment. *Energies* **2021**, *14*, 5460. https://doi.org/10.3390/en14175460

Academic Editor: Dimitrios A. Georgakellos

Received: 30 July 2021
Accepted: 30 August 2021
Published: 2 September 2021

1. Introduction

Our goal is to examine the impact of food choices on health and the environment. Food consumption accounts for almost one-third of households' total environmental impact. These environmental impacts include climate change, water pollution, water scarcity, etc. Understanding consumers' preferences for food products is essential for bettering food policy [1,2] whose primary goal should be to improve human health [3] and promote sustainable development [4–6]. Contemporary European Union legislation on food information tries to take into account the right of consumers to reliable information but also stresses the freedom of choice of every human being [7]. Hence, it is important to have more comprehensive and accurate information, not just to provide information on labels [8]. Providing more accurate health-related information can increase people's propensity to eat more healthily, especially in the case of obese people [9]. Not only is the availability of food information important, so are the costs of searching for that information. Reducing these costs may increase the likelihood of consumers choosing healthier products [10]. More and more consumers pay attention to the way goods and services are produced, as

well as the degree of their environmental friendliness, in accordance with the principles of sustainable development on the effects of producers' actions for the environment and eco-innovation [11–13].

Developed countries are seeing more and more problems resulting from an unhealthy diet, including obesity, cardiovascular diseases, and cancer [14]. Therefore, many, including state authorities, are pressuring people to change their eating habits [1,15]. State authorities have an opportunity to conduct information campaigns, set different tax rates for different products, and regulate the food market. According to research conducted in Great Britain, only information campaigns are effective [16].

Tastes and preferences influence food choices throughout a person's life. A love for sweetness and an aversion to bitter and sour tastes are present in humans from an early age since they are innate [17]. However, research clearly shows that parents (especially mothers) pay attention to children's food choices, as they are an important part of parenting and feel obliged, in part because of external pressure, to provide their children with healthy food [18].

Food preferences and aversions develop from experience, attitudes, beliefs, and expectations [19]. Hence, one may notice changes in one's food consumption preferences. After a period of fascination in the 1970s and 1980s with highly processed foods, consumers began to take an interest in natural products and in the origins of food ingredients in line with the principles of sustainable development [20]. Good food choices affect many areas of people's lives around the world. Paradoxically, in developed countries, excessive weight and obesity kill more people than deficient weight does [21,22]. In 2016, 39 percent of adults eighteen years or older were overweight and 13 percent were obese [21].

Due to the increasing wealth of society and progressive urbanization, people are consuming more animal protein and processed food (rich in fats and sugars) and less whole grain and other sources of fiber [23]. Understanding the individual motives that drive certain food choices is key to being able to change consumption habits, shape healthy behavior, and become more sustainable [24]. Each modification of the diet can lead to both benefits (improvement in health) and losses (less enjoyment of food), and a permanent change can only be expected when, in the consumers' view, the benefits are higher than the losses [25]. This can foster a positive attitude toward ecological foods, which, according to CAWI research conducted in Poland in 2014, are perceived as healthier, more environmentally friendly, tastier, and of better quality, as they are subject to more stringent controls and is produced in a more traditional way [26].

In modern times, overeating, or emotional eating, is common, usually as a response to everyday stress [27], intensified even further by the COVID-19 pandemic. However, studies conducted in the United States on 13 February 2019 and 31 March 2020—before and in the beginning of the pandemic—did not find significant changes in food consumption between the two dates, except for a 14 percent increase in sugar consumption among adults, which could have been caused not so much by a change in eating habits as by an increase in purchases of processed foods containing more sugar [28]. The relationship between food expenditure and income seems to be important. People with higher incomes are more likely to change their preferences and are therefore less stable in their choices. This is because the cost of error decreases with income [29]. People who change preferences pay less attention to price and more often consider novelty an important attribute of food products [29–31].

Recently, an increase in food consumption that might not be justified by human needs has been associated with harm to the environment. Among other things, it is responsible for 20–30 percent of greenhouse gas emissions [32,33]. One of the reasons people change their eating habits is by reading information on product labels about products' contribution to environmental damage. Thus far, this information has mainly concerned the carbon footprint of producing a given food item, but the degree to which it changes food choices remains unknown and requires further research [34].

Contemporary shopping and consumption habits reflect not only the need to maintain one's current standard of living, but also snobbery or imitation or buying in stock [35].

The latter applies especially to food that has a strict use-by date. This applies not only to end consumers, but to the entire supply chain. In the United States, 31 percent of food, corresponding to USD 161 billion, is wasted at the retail level [36].

2. Materials and Methods

2.1. Research Material

We conducted our research in March and April 2020 with a questionnaire taken by 428 respondents—Polish residents aged 15–65, and aged 65 and over. The sample population was controlled in terms of the place of residence (province), age group, and gender. The questionnaire consisted of thirty-eight questions grouped thematically into physical activity, nutrition prophylaxis, food preferences, and general health.

To identify what food choices affect health and to identify classes of respondents that are relatively homogeneous in their food choices, we used an algorithm for building classification trees. Classification trees (also known as decision trees) are one example of data mining. Breiman et al. [37] introduced its use in regression analysis.

2.2. Methodology Research

The tree method, a data-analysis tool, has been widely applied to many research fields, not only statistics and econometrics. More and more often it is used in medicine—for example, for determining survival probabilities [38,39]. The use of classification trees in strategies of segmentation of individuals—for example, recipients of health services—in relation to appropriate segmentation into homogeneous subgroups may constitute the basis for targeted interventions by the health service [40,41], or consumers of food products, in particular with regard to the assessment of the symptoms of food addiction (overeating, mindless eating, etc.) for a healthy life [42].

In the present study, the method of classification trees allows us to divide the surveyed respondents into classes and thus to determine whether they belong to the classes of the qualitative dependent variable (health status) on the basis of measurements of explanatory variables (food choices). The classification tree algorithm analyzes the relationship of each explanatory variable (a food choice) with the dependent variable (health status). The variables that were selected for the model and that describe the division in the appropriate nodes of the tree and profiling the relevant subsets of the community under study are also the variables that determine the assessment of health.

The classification tree is a graphical presentation of the recursive group division method. In each node, the relation of division into successive subgroups is checked. The left branch shows the subgroup for which the relation is true, and the right branch shows the other respondents (for whom the relation is not true). The variable and the relations of the division were selected in such a way as to optimize the homogeneity of the division with regard to the dependent variable (that is, health status assessment).

At the lowest level, which illustrates the final division of the population in the study, there are end nodes—lists containing information about the number of respondents assigned to individual classes, the expected value of the dependent variable (health status assessment), and the histograms of the frequency distribution of the dependent variable (see Figure 1). In order to arrive at a relatively simple tree, we stopped the procedure of recursive group division before the segments and classes became fully homogeneous. For this purpose, we applied the fast algorithm for classification trees (FACT) direct-stop rule for 4 percent of the population. The explained (dependent) variable, Y, is a subjective assessment of health whose values were assigned based on the respondents' answers: 1 (good or very good health) or 0 (very bad health, bad health, or neither bad nor good health (so-so)). The explanatory (independent) variables, or food choices (X1, . . . , X18), are:

- X1: eating three meals a day (that is, breakfast, lunch, dinner) (1 = no; 2 = rather not; 3 = depends on the situation at work and at home; 4 = yes; 5 = definitely yes; 6 = more than three meals a day);

- X2: fruit consumption (0 = I do not eat fruit; 1 = I eat it occasionally; 2 = I eat it every few months; 3 = I eat it every few days; 4 = I eat it once a day; 5 = I eat it several times a day);
- X3: vegetable consumption (0 = I do not eat vegetables; 1 = I eat them occasionally; 2 = I eat them two times a day; 3 = I eat them three times a day; 4 = I eat them four times a day; 5 = I eat them five times a day; 6 = I eat them more than five times a day);
- X4: fish consumption (0 = I do not eat fish; 1 = I eat it sporadically; 2 = I eat it every few months; 3 = I eat it every few days; 4 = I eat it once a day; 5 = I eat it several times a day);
- X5: meat consumption (0 = I do not eat meat; 1 = I eat it sporadically; 2 = I eat it every few months; 3 = I eat it every few days; 4 = I eat it once a day; 5 = I eat it several times a day);
- X6: dairy consumption (0 = I do not eat dairy; 1 = I eat it occasionally; 2 = I eat it every few months; 3 = I eat it every few days; 4 = I eat it once a day; 5 = I eat it several times a day);
- X7: consumption of gluten-containing bread (that is, bread made of wheat or rye flour) (0 = I do not eat it; 1 = I eat it sporadically; 2 = I eat it every few months; 3 = I eat it every few days; 4 = I eat it once a day; 5 = I eat it several times a day);
- X8: consumption of sweets and cakes (0 = I do not eat sweets and cakes; 1 = I eat them sporadically; 2 = I eat them every few months; 3 = I eat them every few days; 4 = I eat them once a day; 5 = I eat them several times a day);
- X9: snacking between meals (0 = I do not snack between meals; 1 = I do so sporadically; 2 = I do so every few months; 3 = I do so once a day; 4 = I do so twice a day; 5 = I do so several times a day);
- X10: gluten-free daily diet (0 = no; 1 = yes);
- X11: a lactose-free daily diet (0 = no; 1 = yes);
- X12: an egg-free daily diet (0 = no; 1−yes);
- X13: low-fat daily diet (0 = no; 1 = yes);
- X14: low-energy daily diet (0 = no; 1 = yes);
- X15: low-carbohydrate (high protein and fat) daily diet (0 = no; 1 = yes);
- X16: high-protein daily diet (0 = no; 1 = yes);
- X17: slimming daily diet (0 = no; 1 = yes);
- X18: reading the information on food labels carefully before buying food products (1 = I do not; 2 = I'd rather not; 3 = very occasionally; 4 = yes; 5 = definitely yes).

The control variables (X19, . . . X20) are:

- X19: gender (F = female; M = male);
- X20: age (up to eighteen years old; nineteen to twenty-four; twenty-five to thirty-nine; forty to fifty-four; fifty-five to sixty-four; sixty-five or older);
- X21: education (1 = basic completed, no education; 2 = lower secondary; 3 = basic vocational; 4 = postsecondary; secondary vocational and general education; 5 = higher);
- X22: professional activity (1 = a school student, a university student, or a person in training or an unpaid internship; 2 = unemployed person; 3 = retiree on a pension; 4 = professionally inactive for other reasons; 5 = a person running a farm home, a housekeeper, or a head of a family; 6 = a working person who helps with family activities);
- X23: the level of household income that allows one to meet their basic food supply needs (0 = hard to say; 1 = definitely not; 2 = rather not; 4 = yes; 5 = definitely yes).

The calculations were performed in the software Statistica, in the case of classification trees, using the classification and regression trees (C&RT) method for exhaustive search for one-dimensional divisions.

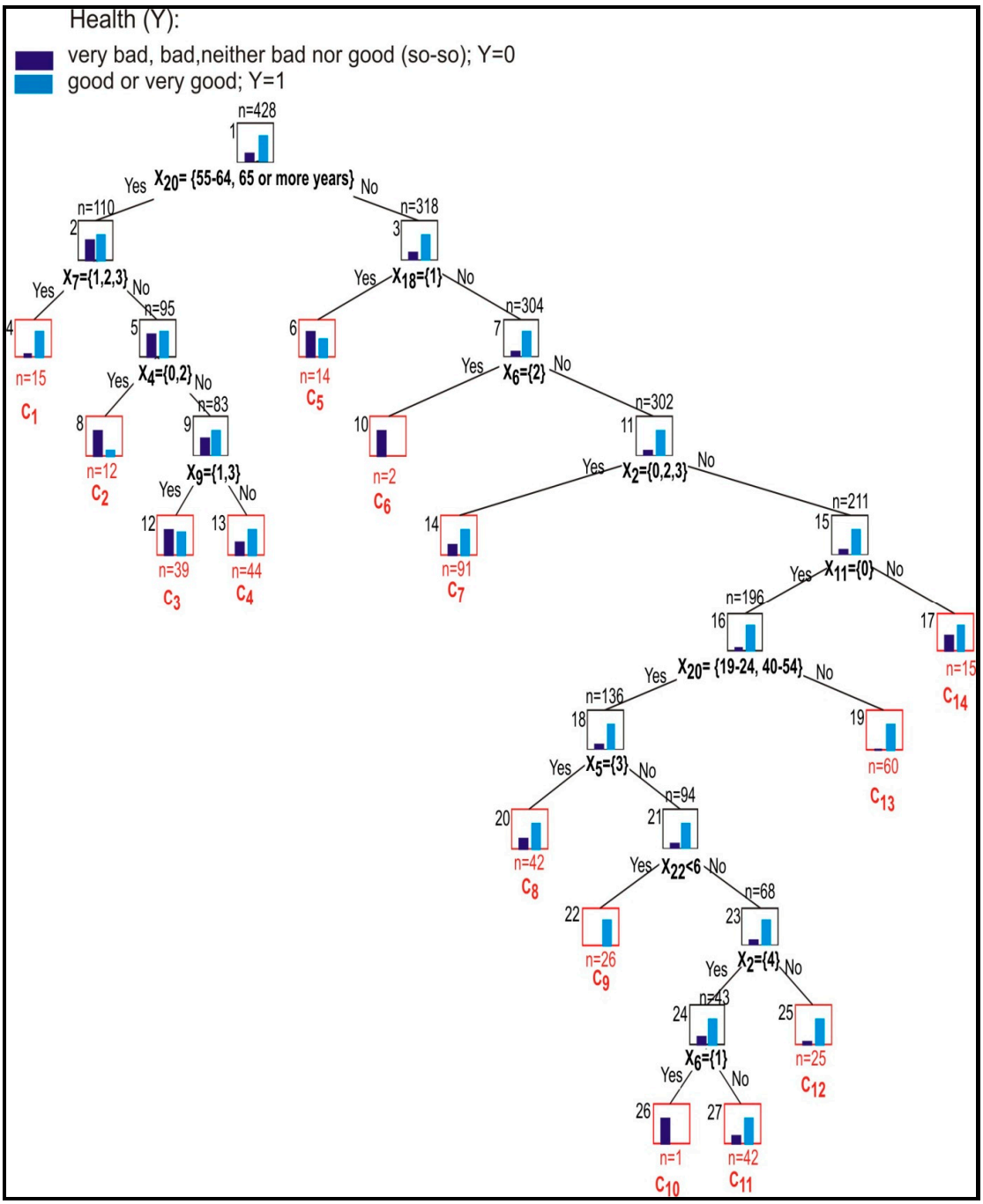

Figure 1. Classification tree for health assessment.

3. Results

All participants, 428, were controlled in terms of the place of residence (province), age group, and gender. Seventy percent of participants were women and 30 percent men; 75.4 percent of respondents lived in cities with more than twenty thousand residents (20 percent in cities with between twenty thousand and one hundred thousand, and 55 percent in cities with over one hundred thousand), and 25 percent were residents of towns with up to twenty thousand residents. Seventy-one percent of the respondents were working at the time of the questionnaire, 20 percent were students, and 7 percent were on a pension. The age distribution of the respondents is presented in Table 1.

Table 1. Age distribution of the respondents.

Age Range	Number	%
Up to 18	11	2.6
19–24	119	27.8
25–39	89	20.8
40–54	99	23.1
55–64	73	17.1
65 years old or more	37	8.6

Among the respondents, 19.2 (Table 2) percent assessed their health as very good and 55.1 percent as good (74.3 percent in total). People with very bad or bad health constituted a small share of the remaining respondents.

Table 2. Self-assessment of health status.

Age (X_{20})	How do You Assess Your Health? (Y)				
	Very Bad	Bad	Neither Bad nor Good (so-so) In %	Good	Very Good
Up to 24	1.5	3.8	16.9	46.9	30.8
25–39	0.0	0.0	12.4	57.3	30.3
40–54	0.0	3.0	20.2	65.7	11.1
55–64	0.0	4.1	37.0	56.2	2.7
65 years old or more	0.0	8.1	37.8	48.6	5.4
Total	0.5	3.3	22.0	55.1	19.2

Respondents' self-assessment of health in relation to selected food choices is presented in Table 3. People who assessed their health as good or very good most often declared that they ate fruit sporadically, vegetables three to four times a day, fish daily, meat once every few months, and dairy products occasionally. For comparison, people assessing their health condition as at best so-so (neither good nor bad) most often declared that they consumed no fruit, vegetables sporadically or one to two times a day, deficient amounts of fish, meat daily, and dairy products once every few months. These observations clearly demonstrate the different self-assessments of people who follow different patterns of nutrition.

Table 3. Self-assessment of health status and selected food choices.

Specification	(Y) Self-Assessment of Health Status	
	Neither Bad nor Good (so-so)	Good or Very Good
(X_2) Fruit consumption		
I do not eat fruit	75.0	25.0
I eat it sporadically	14.8	85.2
I eat it once every few months	33.3	66.7
I eat it once every few days	32.7	67.3
I eat it once a day	24.2	75.8
I eat it a few times a day	20.7	79.3
(X_3) Vegetable consumption		
I do not eat vegetables	20.0	80.0
I eat them sporadically	26.7	73.3

Table 3. *Cont.*

Specification	(Y) Self-Assessment of Health Status	
	Neither Bad nor Good (so-so)	**Good or Very Good**
(X_3) Vegetable consumption		
I eat them once a day	26.8	73.2
I eat them 2 times a day	30.7	69.3
I eat them 3 times a day	17.1	82.9
I eat them 4 times a day	18.8	81.3
I eat them 5 times a day	16.7	83.3
I eat them more than 5 times a day	20.0	80.0
(X_4) Fish consumption		
I do not eat fish	26.7	73.3
I eat it sporadically	23.3	76.7
I eat it once every few months	33.3	66.7
I eat it once every few days	25.3	74.7
I eat it once a day	—	100.0
I eat it a few times a day	—	100.0
(X_5) Meat consumption		
I do not eat meat	12.5	87.5
I eat it sporadically	10.3	89.7
I eat it once every few months	—	100.0
I eat it once every few days	24.6	75.4
I eat it once a day	32.1	67.9
I eat it a few times a day	25.0	75.0
(X_6) Dairy consumption		
I do not eat dairy	55.6	44.4
I eat it sporadically	20.0	80.0
I eat it once every few months	100.0	—
I eat it once every few days	27.3	72.7
I eat it once a day	25.3	74.7
I eat it a few times a day	22.8	77.2
(X_1) Eating three meals a day (breakfast, lunch, dinner)		
Definitely not	16.7	83.3
Rather no	33.3	66.7
Rather yes	22.1	77.9
Definitely yes	25.9	74.1
Depends on the situation at work and at home	27.7	72.3

After constructing the classification tree, we ranked the importance of variables based on one-dimensional divisions (where 0 means low importance and 100 means high importance), as shown in Table 4. The table reveals the regularities described above for people who declare themselves to be in good or very good health.

Table 4. Ranking of importance of variables for good or very good health.

Variable	Importance
X_{20}: age	100
X_5: meat consumption	95
X_6: dairy consumption	90
X_2: fruit consumption	86
X_1: eating three meals a day (breakfast, lunch, dinner)	83
X_{18}: reading food label information carefully before purchasing products	70
X_3: vegetable consumption	65
X_9: snacking between meals	65
X_{11}: lactose-free daily diet	63
X_{22}: professional activity	63
X_7: consumption of bread with gluten	49
X_{21}: education	47
X_{13}: low-fat daily diet	45
X_{23}: the level of household income that allows one to meet their basic food needs	40
X_4: fish consumption	35
X_{19}: gender	32
X_{12}: egg-free daily diet	30
X_8: consumption of sweets and cakes	29
X_{15}: low-carbohydrate (high protein and fat) daily diet	26
X_{16}: high-protein daily diet	18
X_{10}: gluten-free daily diet	17
X_{17}: slimming daily diet	6
X_{14}: low-energy daily diet	4
X_{17}: slimming daily diet	6
X_{14}: low-energy daily diet	4

According to the model we constructed (Figure 1) and the ranking of explanatory variables (Table 4), apart from the control variables, the variables that most influenced whether someone rated themselves as being in good or very good health were age and frequency of fruit, dairy, and meat consumption. In contrast, low-energy daily diet and slimming daily diet had the least influence.

Finally, after applying the stop rule, the structure of the classification tree included ten significant variables that had the greatest classification power in the model development (which is equivalent to saying they were crucial in dividing the entire population into classes of respondents that differed significantly in their health status). Significant variables that in the classification tree model were the basis for the first divisions of the respondents turned out to be:

- X20: age;
- X7: consumption of bread with gluten (that is, bread made from wheat or rye flour);
- X18: reading the information on food labels carefully before buying products;
- X4: fish consumption;
- X6: dairy consumption;
- X9: snacking between meals;
- X2: fruit consumption;
- X11: a lactose-free daily diet;
- X22: professional activity;

- X5: meat consumption.

Self-assessment of health status (the dependent variable) was therefore most strongly determined by age (age of sixty-five years or more). In the first subset of respondents (aged fifty-five or over, numbering 110 respondents), 80.2 percent rated themselves as in good or very good health; in the second (with 318 respondents aged less than fifty-five years), 57.2 percent did.

These subgroups were further divided, with the sets of significant variables selected for both submodels being significantly different. In the group of people aged 55 and over (left side of the figure), the consumption of gluten-containing bread, i.e., traditional wheat or rye flour, had the greatest impact on good or very good health status, as well as consumption of fish or consumption of dairy products. In the group of people under 55 (right side of the figure), the variable of carefully reading the information on food labels before buying them, as well as fruit and meat consumption or professional activity, had an additional impact on good or very good self-rating of health.

As a result of the procedure, with the use of appropriate quality measures for the division of the group of respondents, 14 classes of respondents were distinguished (C1, . . . C14)—see end nodes (lists) in Figure 1 and a set of classes in Table 5.

Table 5. Respondents' classes.

Class	Characteristics	Share of People Declaring They Have Good or Very Good Health in a Given Class
C_1	Number = 15 units (3.5% of the total number of respondents) Age 55 or older Consumption of bread with gluten at most once every few days	80.0%
C_2	Number = 12 units (2.8% of the total number of respondents) Age 55 or older For the vast majority, the consumption of gluten-free bread more often than once every few days Consumption of fish every few months	18.2%
C_3	Number = 39 units (8.9% of the total number of respondents) Age 55 or older For the vast majority, the consumption of gluten-free bread more often than once every few days Consuming fish more than once every few months Snacks between meals occasionally or once every few days	46.2%
C_4	Number = 44 units (10.3% of the total number of respondents) Age 55 or older For the vast majority, the consumption of gluten-free bread is more frequent than once every few days Consuming fish more than once every few months The vast majority snacked between meals at least once a day	68.2%
C_5	Number = 14 units (3.3% of the total number of respondents) Age under 55 Failure to carefully read the information on food labels before purchasing food products	42.9%
C_6	Number = 2 units (0.5% of the total number of respondents) Age under 55 Respondents read the information on food labels carefully before buying them Consumption of dairy products every few months	0%
C_7	Number = 91 units (21.3% of the total number of respondents) Age under 55 Respondents read the information on food labels carefully before buying products Consumption of dairy products more than once every few months Fruit consumption every few months or every few days	74.1%

Table 5. *Cont.*

Class	Characteristics	Share of People Declaring They Have Good or Very Good Health in a Given Class
C_8	Number = 42 units (9.8% of the total number of respondents) Age 19–24 or 40–54 Respondents read the information on food labels carefully before buying them Consumption of dairy products more than once every few months Fruit consumption more than once every few months or once every few days Not a lactose-free daily diet Consumption of meat every few days	71.4%
C_9	Number = 26 units (6.1% of the total number of respondents) Age 19–24 or 40–54 Respondents read the information on food labels carefully before buying products Consumption of dairy products more than once every few months Fruit consumption more than once every few months or once every few days Not a lactose-free daily diet For the vast majority, meat consumption more often every few days Not people who work or help in self-employed family activities	100%
C_{10}	Number = 1 unit (0.2% of the total number of respondents) Age 19–24 years Respondents read the information on food labels carefully before buying products Occasional consumption of dairy products Consumption of fruit every few days Not a lactose-free daily diet Meat consumption more than once every few days Persons who work or help in self-employed family activities	0%
C_{11}	Number = 42 units (9.8% of the total number of respondents) Age 19–24 or 40–54 Respondents read the information on food labels carefully before buying them Consumption of dairy products more than once every few months Fruit consumption more than once every few days Not a lactose-free daily diet Meat consumption more often than every few days People who work or help in self-employed family activities	81.1%
C_{12}	Number = 25 units (5.8% of the total number of respondents) Age 19–24 or 40–54 Respondents read the information on food labels carefully before buying products Consumption of dairy products more than once every few months Consumption of fruit more than once every few days Not a lactose-free daily diet Meat consumption more often than every few days People who work or help in self-employed family activities	96.0%
C_{13}	Number = 60 units (14.0% of the total number of respondents) Age under 19 or 25–39 Respondents read the information on food labels carefully before buying products Consumption of dairy products more than once every few months Consumption of fruit every few days Not a lactose-free daily diet	96.7%

Table 5. *Cont.*

Class	Characteristics	Share of People Declaring They Have Good or Very Good Health in a Given Class
C_{14}	Number = 15 units (3.5% of the total number of respondents) Age under 55 Respondents read the information on food labels carefully before buying products Consumption of dairy products more than once every few months Consumption of fruit every few days Not a lactose-free daily diet	60.0%

Our research on the effects of food choices on health leads to three main conclusions. First, considering the respondents aged fifty-five years or over, the largest share of people declaring themselves to be in good or very good health (80.0 percent) was respondents consuming bread with gluten only once every few days (class C1). In contrast, the smallest share of people who assessed their health condition as good or very good (18.2 percent) was recorded in class C2, which included people who consumed bread with gluten more than once every few days and fish only once every few months.

Second, among the classes distinguished in the classification tree model, the C9 class, grouping people with good and very good health (100 percent), had as common features that they were aged nineteen to twenty-four or forty to fifty-four, they carefully read the information on food labels before purchasing food, they consumed dairy products more than once every few months, they consumed fruit more than once every few months or every few days, and their daily diet was not lactose free. The vast majority consumed meat more often than once every few days. These are people who do not work. Third, one of the classes dominated by people who did not assess their health condition as good or very good was the class of respondents who were under fifty-five years old and declared that they did not carefully read the information on the labels of food products before buying them (C5).

4. Discussion

In light of our results, consuming healthy food products has a clear role in the healthy functioning of an individual, as suggested by Hippocrates's principle "Let your food be your medicine" [43]. This thesis is confirmed by low consumption of meat or gluten-containing products and high consumption of vegetables, fruit, and fish. Each of these types of food has advantages and disadvantages [44]. Moreover, an important role in the pro-health trend is played not so much by information on product labels [45,46] as by reading them carefully before buying [47,48]. Nevertheless, as stated above, self-assessment of one's health status is most strongly determined by age. Since food choices are influenced by established consumption habits rather than by example [49], good consumption habits must be established within respective age groups.

Much older generations reached good physical condition, for example, thanks to unprocessed food (food products consumed in childhood by older respondents were quite different in nutritional value than modern meat, dairy products, vegetables, and fruit). Young people are more interested in the healthfulness of their diet. Modern technologies in healthcare are useful: "In the health-care setting, technological change has seen for example, the introduction of electronic health records, mobile health apps, mobile computing" [50]. McCamley et al. [51] found that implementing an electronic medical record system increased the quality, availability, and accessibility of data for nutrition assessments and increased time efficiency. The internet and social media have significantly changed the way consumers access health information. Additionally, social media allows users to interact and gives them an opportunity to acquire and share information. Evidence indicates that younger age is significantly associated with using the internet as the first

source of health information, blogging about health, and using social media for health reasons [52].

Therefore, one can contest the thesis of Pliner and Mann [49], quoted earlier, that mainly because of technology, food choices in the twenty-first century are shaped by the behavior and examples of other people. We hope that the examples in question will rationally affect quality of life by promoting patterns of sustainable consumption.

Ensuring sustainable food consumption can be seen as a generic goal that can be supported by most Sustainable Development Goals [53]. Additionally, hope in this regard especially concerns the young generation, who are susceptible to digital influences and treated as future consumers whose habits relating to sustainable food consumption can be associated with large-scale global concerns related to sustainability [54].

5. Conclusions

The research shows that the health of every human being is significantly influenced by the consumption of appropriate products and paying attention to the information contained in food labels and making one's own choices on this basis. A lack of knowledge may affect consumption choices, but is unlikely to be a dominant factor in nutritional differences, especially in making decisions about home or out-of-home nutrition choices [55]. However, as our research shows, food choices are not always significantly influenced by consumption habits established and examples of other people. This means that the possibilities of active and effective shaping of food choices are significant as they depend to a greater extent on shaping factors (e.g., on providing rational information) than on the socio-cultural standards established.

The problem is worth being examined more seriously as promoting healthy eating is of great importance for sustainable development since the costs of obesity treatment place a huge burden on the healthcare system and are mostly financed by public entities [56].

The analysis conducted confirmed the usefulness of classification trees in the segmentation of respondents due to the assessment of health condition and in distinguishing (classes) of enterprise profiles in terms of key nutritional choices. The advantage of this method was an ability to present data graphically and the ease of interpretation of the model obtained. This study naturally has some limitations. The authors are aware of the weaknesses of the model applied which are revealed in the instability of the classification tree model, as in extreme cases even slight changes in the empirical data set in subsequent research may lead to different divisions of the respondent population. The fact that this paper investigates the Poles, which means that its generalization to other counties is limited, is also considered a limitation of the research. Therefore, comparative studies in other counties are potential areas of future research.

Author Contributions: Conceptualization, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; methodology, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; software, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; validation, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; formal analysis, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; investigation, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; resources, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; data curation, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; writing—original draft preparation, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; visualization, K.S., E.S., A.G.-J., P.W., A.N., Z.G.-S.; project administration, Z.G.-S. All authors have read and agreed to the published version of the manuscript.

Funding: This publication was financed by a subsidy granted to the Wroclaw University of Economics and Business. This publication was financed by a subsidy granted to the Cracow University of Economics (6/ZZE/2021/POT). The publication was financed by a subsidy for the University of Wroclaw, Funds for the "Excellence Initiative - Research University" program.

Conflicts of Interest: The authors declare no conflict of interest.

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