Sustainable vs. Unsustainable Food Consumption Behaviour: A Study among Students from Romania, Bulgaria and Moldova

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Received: 12 May 2020; Accepted: 3 June 2020; Published: 9 June 2020

Abstract: The importance of studying the aspects related to the sustainable food consumption behaviour of students lies in the fact that, at this age, they begin to develop certain consumption patterns that will have long-term effects. The study aimed to identify the type of eating behaviour—sustainable vs. unsustainable—and the socio-demographic factors that influence it, among students in Romania, Bulgaria, and Moldova. The research method was a survey based on a questionnaire administered to a sample of 2378 subjects in the 2017–2018 period. The ANOVA test and simple linear regression were used to identify the correlation between the various variables analysed. The results indicate both positive aspects, which characterise a sustainable diet—high consumption of fruits and vegetables, and negative—the adoption of a mixed diet, which will have a long-term impact on the environment. Age is a good predictor of unhealthy eating habits among students, as this behaviour leads to weight gain. Gender, number of household members, rural/urban and country residence are also influencing factors for food consumption behaviour. Eating while standing and having the last meal of the day after 23:00 are practices that also have negative consequences for health. Conducting campaigns to educate students on the adoption of sustainable food consumption is necessary for all three countries to empower them to choose a healthy lifestyle.

Keywords: sustainable consumption patterns; food behaviour; eating habits; influencing factors; nutrition education; lifestyle

1. Introduction

Sustainability in the agri-food sector is a priority of European and worldwide policies, especially due to its ambivalence as contributor to, and being affected by, climate change. In 2019, at the European Union level around 10% of all greenhouse gas emissions come from the agriculture sector [1]. Worldwide, the global food system—producing, processing, and distribution—is responsible for approximately 26% of global greenhouse gas emissions [2], agriculture for 20% of world GHG emissions [3], and food losses and waste account for another 6% of GHG emissions [4]. Thus, at present, society consumes too many raw materials and energy, creates too much waste and pollutants, and consumes renewable resources at an unsustainable rate [5,6]. In terms of human health, approximately 2 billion people globally are overweight or obese [7]. Due to the impact that food has on the environment, the economy, and the well-being of society [6], new trends promote sustainable production and consumption patterns [8]. These represent a highly debated topic, both by researchers and policymakers.
Sustainability in the food sector needs to be approached holistically, bringing together economic, environmental, and socio-cultural aspects [9]. The economic component refers to the fair price of the products, which should reflect, on the one hand, their quality and, on the other hand, be fair to both the producer and the consumer. Ecological issues involve the protection and conservation of the natural environment and biodiversity, as well as the sustainable use of natural resources. From a socio-cultural point of view, food sustainability involves the generation of jobs and their long-term maintenance, but also other aspects such as: guaranteeing access to fundamental rights (safety, health, education) and supporting the agri-food sector through competent authorities and by governments [9,10].

Every actor in the value chain, from production units to consumers, must be involved and support sustainable consumption so that future generations are not affected in terms of health, quality of life, quality of environment, and identity [11]. The substantial impact that the food sector has on the environment occurs, especially in the production phase. Thus, if it is necessary to increase agricultural production, this should be done without potentiating the adverse effects on the environment, such as: affecting biodiversity, increasing carbon emissions, and degradation of land and water [12].

The Oslo Symposium in 1994 first proposed a working definition of “sustainable consumption” as “the use of goods and services that respond to basic needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations” [13].

The consumer plays a crucial role in promoting sustainable food systems, influencing them through choices and habits [14]. Indeed, consumer behaviours have an unprecedented impact on the environment and natural resources [14]. By shifting consumption practices to healthy habits, they can help encourage the development of products that correspond to sustainable diets [15]—defined by the FAO [16] as “protective and respectful of biodiversity and ecosystems; culturally acceptable, accessible, economically fair and affordable, nutritionally adequate, safe and healthy while at the same time optimising natural and human resources” [16]. According to the World Health Organization, healthy and sustainable diets are rich in vegetables, fruits and whole grains, with a limited intake of saturated fats, trans fats, sugar, and salt [17]. In an analysis of different approaches used to operationalise the health aspects of "environmentally sustainable diets", Mertens et al. [18] propose a new concept of sustainable diets, under the acronym “SHARP”. The main features of the SHARP diet would be: “environmentally sustainable” (S); healthy (“Healthy”) (H); affordable (A) for consumers and at the same time provides support for the agri-food industry; stable (“Reliable”) (R) in terms of both demand and supply; and preferable (P), is in line with food preferences and cultural norms [18].

Given the findings mentioned above, we can say that the current orientation of some consumers towards a sustainable diet is a real fact [19]. The reasons seem to be ethical, cultural, environmental, or health-related [20]. The study of consumption behaviours allows us to understand the reasons that lead them to choose one particular behaviour over another, and the results of such studies can help to adapt the production to the needs, by developing new products and adopting policy measures to stimulate this consumption [19].

According to the study conducted by Lim et al. [14], despite the knowledge and a favourable attitude towards sustainability issues, some consumers do not take concrete action to change consumption habits, with a discrepancy between their intentions and actual behaviour [14]. Consumers often avoid buying sustainable products for egocentric reasons, due to the high price or sometimes to the different taste, thus choosing the short-term benefit over the long-term one [21]. This behaviour was also noticed by Abraham et al. [22], who conducted a study on food consumption behaviour among students [22]. Even if they have information about healthy nutritional requirements, the food choices they make are not necessarily in this direction, food convenience and taste being a priority [22]. Another study by Carrigan and Attalla [23] reveals that price, quality, convenience, and brand familiarity are the most important decision criteria in the acquisition and consumption process. At the same time, ethical issues are considered only by a reduced number of consumers [23].
Another analysis direction of sustainable consumption behaviour is represented by the comparison between consumers who support sustainability and those who do not share this opinion, from the perspective of socio-demographic and value-attitude characteristics. In the study realised by von Meyer-Höfer, von der Wense, and Spiller [24], the only statistically significant difference between the two groups was the gender variable. Being female was a better predictor for an individual to be included in the group of consumers who support sustainability, given that the other variables are kept under control. The authors also showed that in the case of the group supporting sustainability, there is a significantly higher level of desire to contribute to sustainable development through their food buying behaviour [24]. Additionally, the results of the study showed that a decrease in the preference for food quality harms people who support sustainable consumption, thus demonstrating that an active, motivating factor in buying sustainable products is the preference for quality products [24].

The importance not only of socio-demographic factors, but especially of motivations in the context of sustainable eating behaviour, was highlighted by the study of Verain, Dagevos, and Antonides [25]. The authors pointed out that we cannot speak of single consumer behaviour concerning sustainability, but at least four consumer segments: product-oriented consumers, consumers attracted by discounts ("curtailers"), consumers who do not support sustainability ("unsustainers"), and consumers who fully support it ("sustainers"). From the perspective of socio-demographic characteristics, those attracted by discounts ("curtailers") were identified as similar to those who fully support sustainability. However, when analysing the motivations and psychosocial characteristics, the group of those who fully support sustainability was closer to the group of product-oriented consumers, thus being different from those attracted by discounts and consumers who do not support sustainability [25].

Several studies have analysed the influence of socioeconomic status on food consumption behaviour. Thus, people with high socioeconomic status (high level of education and income) have healthier eating habits, characterised by higher consumption of fruits and vegetables [26–29]. Additionally, these people seem to be more concerned about the impact of their behaviour on the environment, which is a reason for choosing sustainable foods [30]. At the opposite pole are people with low income or education, for whom price is the chief decision-maker in food selection [28,31].

Over the years, attempts have been made to change consumer habits by educating and informing them, at the public level, about healthy food choices. Still, these approaches have not been fully effective [32]. One possible explanation is that nutrition-related information is complex and challenging to convey in a way that motivates change [32].

To improve the level of knowledge and nutrition education, as well as to motivate consumers to adopt a sustainable consumption behaviour, it is necessary to disseminate nutritional information in a target-oriented way, taking into account the consumers' socio-demographic characteristics [33]. According to the same study, consumer education has been effective among those with a high level of knowledge and a strong desire for knowledge—“the nutrition elite” [33].

Verain et al. [8] tested different ways of educating consumers, using arguments related to health, sustainability, or both to stimulate consumption by nutrition guidelines. They identified three segments of consumers ("pro-self", "average", "sustainable conscious consumers"), given the importance they attach to sustainability, health, taste, and food prices. In the case of the "pro-self" and "average" consumer segments, the arguments related to health and sustainability have increased their awareness, without causing a change in their consumption behaviour. In the "sustainable conscious consumers" group, the transmission of health and sustainability information has increased the intention to reduce meat consumption [8].

Some researchers have investigated various ways to promote the consumption of fruits and vegetables among students, and their interventions showed positive results [34,35], especially when combining educational aspects with environmental ones [36].

Consumption of organic food and the proliferation of the green marketing paradigm are also parts of a sustainable diet [15,37]. There is a favourable attitude among consumers towards organic products, due to their taste, quality, safety, and impact on health and the environment [38]. Adolescents with
such habits have a greater concern for their health and environmental protection [39]. Consumers who buy organic food consume significantly more fruits and vegetables and less meat [40].

Annunziata and Mariani [41] identified three clusters of consumers, depending on how they perceive the attributes of sustainability in the case of organic and local products. Investigating different degrees of sensitivity to these attributes, the study authors proposed personalised education strategies for two of the three clusters, because consumers in the third cluster are already oriented towards sustainable behaviour. Thus, consumers in the first cluster (more concerned with their health issues) should be educated more about the social and environmental benefits of consuming organic and local products. At the same time, consumers in the second cluster (more concerned with environmental issues) should also be oriented towards social and economic benefits [41].

The analysis of sustainable consumption behaviour among young people is a relatively recent field of academic interest. Most studies have identified some variations in sustainable behaviour for this age and occupational segment [42,43]. Thus, the study by Vecchio and Annunziata [42] identified three types of consumers among Italian students: The responsible ones—“the responsible food consumers”, the careless one—“the inattentive food consumers”, and the potential ones—“the potentially sustainable food consumers”, pointing out that only in the case of responsible food consumers and potentially sustainable food consumers were there higher levels of interest and awareness of food sustainability issues [42]. An alternative segmentation was also proposed in the case of the Italian study conducted by Savelli et al. [43] which, by combining lifestyle values with the buying behaviour of young students, identified the existence of four segments of young consumers: Health-focused—“Healthy consumers”, lazy—“Lazy consumers”, money savers—“Saver consumers” and innovators—“Innovative consumers”. The results showed that knowledge interests and favourable attitudes related to food security and sustainability were identified only among respondents included in the category of those focused on health (“Healthy consumers”) [43].

The originality of the analyses related to sustainable food consumption behaviour was also highlighted by Kamenidou et al. [44]. In the study of a sample of Greek students, Kamenidou et al. [44] show that we cannot talk about the homogeneity of sustainable food consumption behaviour in this case. Given the criteria of sustainable food consumption behaviour, social norms and ethical behaviour, two segments were identified among students, namely: Those who do not consider them—“the under-consideration students” and those who oppose them—“the negatively positioned students”. Although neither segment embraced sustainable food consumption behaviour as a lifestyle, the results indicate a predisposition of the first segment to such behaviour [44].

Although relatively small in number, studies of sustainable eating behaviour face some limitations, identified in the literature [45]. Of these limitations, of particular importance is the fact that the results of these studies, even if they are statistically representative, are still only of national relevance (more precisely, they target the young population of the USA, Italy, or Greece, for example). Therefore, the national nature of this research makes it impossible to automatically generalise the findings to other, wider cultural areas, such as the countries of Eastern Europe and the Balkans.

The present study thus tries to fill this gap and to investigate the behaviour of sustainable food consumption in the case of students from three Eastern European countries: Bulgaria, Romania, and Moldova.

The research questions are:

Q1: What are the characteristics of food consumption behaviour among students, and where do they stand in terms of sustainable and unsustainable behaviour?

Q2: What are the socio-demographic factors that influence unsustainable food consumption behaviour?

2. Material and Method

To achieve the research objectives, a sociological survey based on a questionnaire was conducted in three countries in Central and Eastern Europe, respectively in Romania, Bulgaria, and Moldova. The investigated target area was represented by 2378 students from some member universities of the
A consortium created within the project “Réseau régional francophone sur la santé, la nutrition et la sécurité alimentaire—SAIN”. From the total sample, 1506 students were from Romania, 433 from Moldova, and 439 from Bulgaria. The authors used different weighting syntaxes for each country, depending on the specifics of the local population [46].

Students entering the investigated target area were selected based on the fact that this segment of the population is an educated one and represents a suitable sample for studying food consumption behaviour [47].

The student’s participation in this survey was voluntary. The maximum margin of error was a maximum of +/− 8% at university level and +/− 6% at national level. The data was collected during 2017–2018, and the administration of the questionnaires was blended—both “face to face” and online [48]. The duration of the application of a questionnaire ranged from 20 to 30 min.

The questionnaire included questions related to food consumption behaviour and lifestyle of students, but also socio-demographic questions. Regarding the behaviour of food consumption, the questions focused on issues related to the type of diet (mixed, semi-vegetarian, ovo-lacto-vegetarian, lacto-vegetarian, and fully vegetarian), and the habit of eating fruits and vegetables during childhood. Another set of questions concerned the frequency of consumption of foods, beverages, and food supplements, respectively: White bread, black/wholemeal/graham bread, pastries, potatoes, rice, fresh fruit, dried fruit, oilseeds (nuts, almonds, pistachios, cashews), fresh vegetables, canned vegetables, milk, yoghurt, cheese, butter, margarine, pork, beef/veal, mutton, lamb, chicken, turkey, fish, seafood, sausages, canned meat, canned pâtés, sunflower oil, olive oil, sugar, honey, homemade sweets (cakes, biscuits, chocolate, candy), industrially obtained sweets (cakes, biscuits, chocolate, candy), chips, snacks, pretzels, semi-prepared foods, fast food, organic food, food supplements, beer, wine, alcoholic beverages, carbonated drinks, mineral water, plain water, fresh juices/vegetables, energy drinks, coffee, tea. The frequency of consumption of the food and beverages mentioned above was investigated using a measurement scale, which included the following response alternatives: daily/almost daily, at least once a week, at least once a month, 1–2 times a year, not at all.

Another question concerned the self-assessment of healthy eating habits, using a 5-value Likert scale. The reasons for adopting a healthy diet, as well as the barriers to adopting such a diet, were also investigated.

Lifestyle questions were aimed at measuring the frequency of behaviours such as: eating in front of a TV/computer; skipping breakfast; eating alone; skipping certain meals to prevent gaining weight; eating while talking on the phone/sending SMS/emails; eating while standing; eating because of feeling stressed, eating fruit between main meals; eating snacks between main meals; not eating because of feeling stressed; not eating to save money; having the last meal of the day after 23:00; consuming alcoholic beverages and smoking.

Socio-demographic questions referred to respondents’ gender, age, height, weight, education, number of household members, household income, and residence (urban/rural).

Of all the aspects included in the questionnaire, only those that were relevant to describe sustainable food consumption were selected in the statistical analyses. Respectively: a diet more abundant in fruits and vegetables and more deficient in animal products, more frequent consumption of healthy foods vs. unhealthy foods, and a food intake that promotes conviviality. Factors influencing the frequency of consumption of food and drink, eating habits, and lifestyle of students were also identified.

The selected data were analysed using both descriptive and inferential statistics (ANOVA tool and simple linear regression). The main reason for choosing linear regression as a statistical tool in data analysis was the need of the study authors to design a series of consumption trends. Although there are no perfect predictions in an approach that abounds with stimuli that influence the variables, in order not to explain the changes by appealing to the black swan paradigm, we tried to develop statistical models starting from the controlled variables. In this way, regression has become the primary tool in verifying correlations and how trends are developed.
Regarding the use of the ANOVA model and the significance test of the coefficient of X, the need of the researcher was to obtain information on the association between Y and X in the tested variables. Moreover, the ANOVA model generated in the SPSS application also results in the F statistic, very useful in verifying the global significance of the independent variables and also in the interpretation of the linear regression. Additionally, in the table of results of the ANOVA model, from the IBM SPSS application, on the Sig. column, the critical probability of the test is displayed so that the Sig value concerning α provides support in interpreting the tested hypothesis. In analysing the data, the most important thing was for the authors to ensure that the tests they used provide scores that validate the statistical significance, and then to be able to capitalise on the results in exploring the tested hypotheses.

Thus, the frequency of consumption of certain types of food and beverages and eating behaviour were included in the analysis as dependent variables, while, as independent variables, socio-demographic variables (age, gender, residence and weight) were included. Given the volume of the sample, following the statistical processing, there were no significant differences between normalised and non-normalized variables, so it was decided that in the analysis, the variables should be included in the non-normalized form.

3. Research Findings

The research results will be presented in two sections: Descriptive statistics and inferential statistics.

3.1. Descriptive Statistics

An important aspect that characterises sustainable consumption behaviour is food type. According to Friel et al. [49], a sustainable diet is based mainly on plant-based food and less on animal-based food, which brings benefits to both health and the environment. The results of the present study reveal behaviour that is at the opposite pole. Thus, the mixed diet, which contains both products of animal origin and products of plant origin, is the one that predominates among the investigated students. Figure 1 shows that the lowest share, of 0.3%, is recorded among those who have a 100% vegetarian diet, the percentage increasing to 6% for those who have a semi-vegetarian diet (containing mainly products of vegetable origin, but also poultry and fish).

![Figure 1. Diet type of the respondents.](image-url)
Frequencies and association tables for two variables were used in the data analysis on sustainable consumption behaviour. The question on the type of diet is described according to the percentages obtained for the response alternatives (mixed, semi-vegetarian, ovo-lacto-vegetarian, lacto-vegetarian, and fully vegetarian), then related to the representative socio-demographic questions for the obtained values (Table 1).

Table 1. Association between diet type, gender, and age.

| Gender | 18–19 Years Old | 20–21 Years Old | 22–23 Years Old | 24–25 Years Old | 26 Years Old+ | Don’t Know/No Opinion |
|--------|-----------------|-----------------|-----------------|-----------------|---------------|----------------------|
| Male   | 93.2%           | 92.7%           | 90.3%           | 93.6%           | 86.2%         | 89.3%                |
| Female | 87.5%           | 89.3%           | 90.3%           | 82.9%           | 0.0%          | 5.7%                 |
| Semi-vegetarian | 2.7%       | 4.5%            | 5.6%            | 8.6%            | 10.3%         | 5.7%                 |
| Ovo-lacto-vegetarian | 1.4%     | 1.2%            | 2.1%            | 5.6%            | 4.3%          | 2.9%                 |
| Lacto-vegetarian | 0.3%        | 0.7%            | 1.5%            | 0.0%            | 0.0%          | 0.4%                 |
| Vegetarian | 0.3%         | 0.4%            | 0.8%            | 0.0%            | 0.0%          | 0.3%                 |
| Don’t know/No opinion | 2.1%     | 1.4%            | 1.5%            | 0.7%            | 1.7%          | 14%                  |
| Total | 100%            | 100%            | 100%            | 100%            | 100%          | 100%                 |

Regarding gender, there are small differences in the mixed diet, the percentage being slightly higher among men (93.2%) than among women (87.5%). Instead, in the case of semi-vegetarian, ovo-lacto-vegetarian, and lacto-vegetarian diets, the percentage is slightly higher among women than men. Concerning the respondents’ age, we can notice that the percentage of those who have a mixed diet decreases with age, from 92.7% (18–19 years category) to 82.9% (26+ category). An opposite situation is noticed in the case of semi-vegetarian and ovo-lacto-vegetarian diets, where the percentage increases slightly with age. Minimal differences also resulted in the case of associations with the other socio-demographic variables: The percentage of those with a mixed diet is 86.1% (for people under 50 kg) and 94% (for people over 90 kg). As such, it can be stated that the adoption of a certain type of diet, more or less sustainable, is influenced to a minimal extent by socio-demographic characteristics.

According to the World Health Organization, sustainable diets are rich in vegetables, fruits, and whole grains, and low in saturated fat, trans fat, sugar, and salt [17]. Accordingly, we analysed the consumption behaviour of the respondents regarding the food and beverage groups considered healthy, selecting the following items from the list included in the questionnaire: Black/wholemeal bread/graham, fresh fruits and vegetables, oilseeds, milk, yogurt, cheese, chicken, turkey, fish, seafood, olive oil, plain water, and tea. This selection was made according to healthy eating guidelines from Romania, Bulgaria, and Moldova [50–52].

Analysing the daily consumption of foods considered healthy, we find a low frequency of consumption of foods such as black bread/wholemeal/graham, oilseeds (nuts, almonds, pistachios, cashews), fish, olive oil and an average to the raised frequency of dairy products (milk, yoghurt, cheese), fresh fruits and vegetables, and chicken (Figure 2a–d). Most respondents have a habit of consuming fruits and vegetables since childhood; there are no differences compared to actual socio-demographic characteristics.
Figure 2. Frequency of food consumption: (a) first list of items; (b) second list of items; (c) third list of items; (d) fourth list of items.

Regarding the consumption of healthy drinks, we can notice a high consumption of plain water, as well as an average consumption of tea (Figure 3).

Figure 3. Frequency of beverages consumption.

Another aspect analysed in terms of sustainable consumption behaviour is conviviality. For this reason, certain eating practices were analysed (Figure 4a,b), notice the existence of a high percentage of students who eat alone, who do not eat regularly, and who carry out other activities while eating (watching TV, talking on the phone, sending SMS, emails). The average consumption of snacks and fruits between meals was identified. Other analyses of eating habits and lifestyle reveal that a quarter of respondents eat after 23:00. Almost half of the respondents consider that their eating habits are neither healthy nor unhealthy. The main reason why they eat healthily is to maintain their health and to prevent certain diseases, and one of the main reasons why they do not eat healthily is the lack of time. Half of the sample is normal weight; only 17% are overweight.
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time. Half of the sample is normal weight; only 17% are overweight.

According to the primary data analysis, we discovered a food consumption behaviour that tends
to be rather unsustainable. Except for fruits, vegetables, dairy products, and chicken, whose share is
high in terms of daily frequency of consumption, there is a high share of foods considered unhealthy,
such as white bread, sugar, industrially obtained sweets, and sunflower oil (we mention the fact that
we refer to industrially processed sunflower oil). Unsustainable behaviour of students is also given
by eating practices that have a negative influence on long-term health: Weight gain, imbalances in
terms of sleep-active life, a non-convivial consumption behaviour. For these reasons, the secondary
data analysis tried to identify the socio-demographic factors influencing the negative aspects of food
consumption and behaviour mentioned above.

3.2. Inferential Statistics

At this stage, the data analysis was performed based on the ANOVA test and the simple linear
regression. This section presents the results obtained and their interpretation. In interpreting the data,
we were interested in identifying the type, size and direction of the correlation between dependent
variables (food consumption, eating behaviour, and lifestyle) and several independent variables
(socio-demographic characteristics).

The less healthy food categories included in the analysis are: Butter, margarine, white bread, sugar,
pork meat, canned meat, canned pâtés, sunflower oil, industrially obtained sweets, semi-prepared
foods, beer, wine, energy drinks, frizzy drinks, and coffee. We selected these aliments, as they can be
synonymous with an unhealthy diet due to the high fat, high sugar, and high salt content, and their
consumption should be limited [53,54]. According to dietary guidelines for Romania, Bulgaria, and
Moldova, it is recommended to reduce the intake of saturated fat and trans-fat (butter, margarine) and
to replace them with polyunsaturated fats. Pork meat is also rich in saturated fatty acids. High levels
of salt are found in processed and canned foods (canned meat, canned pâtés, semi-prepared foods),
and high amounts of sugar are found in industrially obtained sweets and sugar-sweetened beverages
(soft drinks, energy drinks) [50–52]. These foods may promote noncommunicable diseases, including
cardiovascular disease, type 2 diabetes, and certain types of cancer [17,50–52]. In the case of beverages
(energy drinks, coffee, light alcoholic drinks—beer, wine) they are also associated with a variety of
adverse effects in terms of young people health [53,55,56].

The analysed data show that among the independent variables, the best predictors for the
consumption of unhealthy foods are age and weight. The ANOVA test indicates that the introduced
model can predict the frequency of consumption of some foods, with sig <0.05. R Square shows that
independent variables can predict only part of the variation in scores. This variation can be seen in
Table 2. In general, as they get older, respondents consume more frequently foods and beverages such
as pork meat, canned meat, sunflower oil, wine, and coffee. One result that stands out is the one related to the age–gender—coffee consumption correlation. If on linear regression, the coffee consumption correlates with age, on the regression curve, a turning point is observed around the age of 31 years. If until then, the two correlate strongly positively, from that point, the coffee tends to be consumed less often (Figure 5a–c).

Table 2. Influence of age on unhealthy food consumption (Regression coefficients).

| Model                  | Unstandardised Coefficients | Standardised Coefficients | t      | Sig.  |
|------------------------|----------------------------|---------------------------|--------|-------|
| Butter                 | 0.192                      | 0.086                     | 2.232  | 0.026 |
| Margarine              | -0.169                     | 0.075                     | -2.248 | 0.025 |
| Pork meat              | 0.237                      | 0.093                     | 2.564  | 0.010 |
| Canned meat            | 0.291                      | 0.095                     | 3.055  | 0.002 |
| Canned pâtés           | -0.234                     | 0.088                     | -2.660 | 0.008 |
| Sunflower oil          | 0.244                      | 0.087                     | 2.794  | 0.005 |
| Industrially obtained sweets | -0.232                  | 0.110                     | -2.111 | 0.035 |
| Semi-prepared foods    | -0.215                     | 0.095                     | -2.266 | 0.024 |
| Wine                   | 0.324                      | 0.095                     | 3.420  | 0.001 |
| Energy drinks          | -0.234                     | 0.078                     | -3.003 | 0.003 |
| Coffee                 | 0.208                      | 0.054                     | 3.879  | 0.000 |

The replication of the regression model separately by gender shows that in both women and men, the model is statistically significant, with a turning point around the age of 28 for men and 35 for women.

The results of the ANOVA test also indicate that consuming unhealthy foods and alcoholic beverages can predict weight gain. Thus, excellent predictors for a high weight are the consumption of beer, pork meat, chips, snacks, and pretzels. If on linear regression, the consumption of chips consistently predicts the weight, on the regression curve, a turning point is observed around 70 kg. If until then, the two correlate negatively, from that point, a higher weight is predicted by the frequency of consumption of these foods (Figure 6a–c).
The analysis of the correlation between age and certain eating practices reveals that, in general, eating while standing is more common with age, and behaviours such as “fasting to save money” and “eating after 23:00” are rarer (Table 3).

**Table 3. Influence of age on less sustainable eating behaviour (Regression coefficients).**

| Model                                           | Unstandardised Coefficients | Standardised Coefficients | t    | Sig. |
|-------------------------------------------------|-----------------------------|---------------------------|------|------|
| I eat alone                                      | −0.136                      | 0.069                     | −0.045 | −1.962 | 0.050 |
| I skip certain meals in order to prevent gaining weight | 0.116                      | 0.059                     | 0.050 | 1.972 | 0.049 |
| I eat while talking on the phone/sending SMS/emails | −0.201                      | 0.055                     | −0.088 | −3.664 | 0.000 |
| I do not eat in order to save money              | −0.319                      | 0.066                     | −0.119 | −4.805 | 0.000 |
| I eat while standing                            | 0.282                       | 0.062                     | 0.110 | 4.534 | 0.000 |
| I have the last meal of the day after 23:00      | −0.223                      | 0.062                     | −0.089 | −3.599 | 0.000 |

On the other hand, eating while standing and having the last meal of the day after 23:00 are good predictors for a high weight (Table 4).

**Table 4. Influence of weight on less sustainable eating behaviour (Regression coefficients).**

| Model                                           | Unstandardised Coefficients | Standardised Coefficients | t    | Sig. |
|-------------------------------------------------|-----------------------------|---------------------------|------|------|
| I do not have breakfast                         | 0.909                       | 0.240                     | 0.095 | 3.784 | 0.000 |
| I do not eat because I feel stressed            | −1.897                      | 0.246                     | −0.182 | −7.696 | 0.000 |
| I skip certain meals in order to prevent gaining weight | 0.998                      | 0.244                     | 0.103 | 4.082 | 0.000 |
| I eat while talking on the phone/sending SMS/emails | −1.406                      | 0.226                     | −0.149 | −6.218 | 0.000 |
| I eat while standing                            | 1.058                       | 0.257                     | 0.089 | 4.114 | 0.000 |
| I have snacks between meals                     | −0.868                      | 0.316                     | −0.068 | −2.746 | 0.006 |
| I have the last meal of the day after 23:00      | 0.715                       | 0.258                     | 0.068 | 2.768 | 0.006 |

If on linear regression, skipping meals consistently predicts the weight, on the regression curve, a turning point is observed around the weight of 80 kg. If until then, the two correlate negatively, from that point a higher weight is more strongly predicted by skipping meals (Figure 7a).

For women, skipping meals is a very good predictor of weight gain up to 80 kg. Another conclusion is that skipping meals is practised more often by women who weigh up to 80 kg. After this weight, this behaviour is less common (Figure 7b).

In analysing the data, we were also interested in identifying the correlations between the consumption of unhealthy food and less sustainable eating behaviour and the other socio-demographic variables such as: gender, number of household members, rural/urban residence, country residence, and Body Mass Index.
Regarding the influence of gender on unhealthy food consumption, the first step was to see the results of Levene’s Test for Equality of Variances. Only those variables for which the first sig was superior to 0.05 were considered for the second step of the analysis. The results can be seen in Table 5.

In general, women consume more industrially obtained sweets and coffee than men. On the other hand, men tend to consume more semi-prepared foods, beer, and frizzy drinks.

The analysis of the correlation between gender and certain eating practices reveals that, in general, eating while standing and having the last meal of the day after 23:00 are more common among men, while eating because of stress and having a snack between meals are more common among women (Table 6).

The ANOVA test indicates that, in general, as the number of household members increase, respondents more frequently consume white bread, sugar, and canned pâtés (Figure 8a–c). There is no significant influence of the number of household members on the less sustainable eating behaviour.

The influence of rural/urban residence on the unhealthy food consumption was also tested. The results show that students from rural area more frequently consume foods as margarine and canned pâtés, while students from urban area more frequently consume butter (Table 7). In the case of less sustainable eating behaviour, eating in front of the TV or the computer is more frequent among students from cities.

The unhealthy food consumption is also influenced by the country of residence. The ANOVA test indicates that in Bulgaria, respondents more frequently consume pastries, butter, and beef meat, while in Romania they more frequently consume frizzy drinks and canned pâtés. On the other hand, students from Moldova less frequently consume margarine, pork meat, and sugar. Regarding the less sustainable eating behaviour habits, Romanian students eat more frequently because of stress and have the last meal of the day after 23:00. Not having breakfast and eating while talking on the phone/sending SMS/emails are more frequent among Romanian and Bulgarian students, while not eating in order to save money is more frequent among students from Moldova.
Table 5. Influence of gender on unhealthy food consumption (Independent Samples test).

|                                | Levene's Test for Equality of Variances | t-Test for Equality of Means |
|--------------------------------|----------------------------------------|------------------------------|
|                                | F     | Sig. | t     | df  | Sig. (2-Tailed) | Difference | Std. Error | 95% Confidence Interval of the Difference |
|                                |       |      |       |     |               |            |            | Lower | Upper |
| Industrially obtained sweets   | Equal variances assumed | 0.388 | 0.533 | −2.609 | 2349 | 0.009 | −0.106 | 0.041 | −0.186 | −0.026 |
|                                | Equal variances not assumed |       |      | −2.659 | 1478.000 | 0.008 | −0.106 | 0.040 | −0.185 | −0.028 |
| Semi–prepared foods            | Equal variances assumed | 1.680 | 0.195 | 2.888 | 2341 | 0.004 | 0.133 | 0.046 | 0.043 | 0.223 |
|                                | Equal variances not assumed |       |      | 2.965 | 1484.929 | 0.003 | 0.133 | 0.045 | 0.045 | 0.221 |
| Beer                           | Equal variances assumed | 0.359 | 0.549 | 19.936 | 2330 | 0.000 | 1.009 | 0.051 | 0.910 | 1.108 |
|                                | Equal variances not assumed |       |      | 19.466 | 1320.280 | 0.000 | 1.009 | 0.052 | 0.907 | 1.111 |
| Frizzy drinks                  | Equal variances assumed | 0.981 | 0.322 | 10.047 | 2349 | 0.000 | 0.542 | 0.054 | 0.436 | 0.648 |
|                                | Equal variances not assumed |       |      | 10.325 | 1511.803 | 0.000 | 0.542 | 0.053 | 0.439 | 0.645 |
| Coffee                         | Equal variances assumed | 1.188 | 0.276 | −2.691 | 2348 | 0.007 | −0.185 | 0.069 | −0.321 | −0.050 |
|                                | Equal variances not assumed |       |      | −2.687 | 1397.216 | 0.007 | −0.185 | 0.069 | −0.321 | −0.050 |

Table 6. Influence of gender on less sustainable eating behaviour (Independent Samples test).

|                                | Levene's Test for Equality of Variances | t-Test for Equality of Means |
|                                | F     | Sig. | t     | df  | Sig. (2-Tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |
|                                |       |      |       |     |               |                |                        | Lower | Upper |
| I do not eat because I feel stressed | Equal variances assumed | 0.708 | 0.400 | −4.891 | 2336 | 0.000 | −0.281 | 0.057 | −0.393 | −0.168 |
|                                | Equal variances not assumed |       |      | −4.853 | 1354.720 | 0.000 | −0.281 | 0.058 | −0.394 | −0.167 |
| I eat while standing           | Equal variances assumed | 1.042 | 0.307 | 2.050 | 2343 | 0.041 | 0.116 | 0.057 | 0.005 | 0.228 |
|                                | Equal variances not assumed |       |      | 2.035 | 1372.007 | 0.042 | 0.116 | 0.057 | 0.004 | 0.229 |
| Table 6. Cont. |
|----------------|
| **Levene’s Test for Equality of Variances** | **t-Test for Equality of Means** |
| F | Sig. | t | df | Sig. (2-Tailed) | Mean | Std. Error | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |
|----------------|
| I have snacks between meals | Equal variances assumed | 0.963 | 0.327 | −3.457 | 2333 | 0.001 | −0.167 | 0.048 | −0.262 | −0.072 |
| Equal variances not assumed | −3.461 | 1396.776 | 0.001 | −0.167 | 0.048 | −0.261 | −0.072 |
| I have the last meal of the day after 11 pm | Equal variances assumed | 3.786 | 0.052 | 9.525 | 2354 | 0.000 | 0.532 | 0.056 | 0.423 | 0.642 |
| Equal variances not assumed | 9.625 | 1433.008 | 0.000 | 0.532 | 0.055 | 0.424 | 0.641 |
| I consume alcoholic beverages | Equal variances assumed | 2.874 | 0.090 | 12.612 | 2350 | 0.000 | 0.643 | 0.051 | 0.543 | 0.743 |
| Equal variances not assumed | 12.322 | 1324.868 | 0.000 | 0.643 | 0.052 | 0.541 | 0.745 |

**Table 7.** Influence of rural/urban residence on unhealthy food consumption (Independent Samples test).

| Levene’s Test for Equality of Variances | t-Test for Equality of Means |
|----------------|
| **F** | **Sig.** | **t** | **df** | **Sig. (2-Tailed)** | **Mean** | **Mean Difference** | **Std. Error** | **Std. Error Difference** | **95% Confidence Interval of the Difference** |
|----------------|
| Butter | Equal variances assumed | 3.690 | 0.055 | 2.957 | 2331 | 0.003 | 0.139 | 0.047 | 0.047 | 0.230 |
| Equal variances not assumed | 2.994 | 1494.901 | 0.003 | 0.139 | 0.046 | 0.048 | 0.229 |
| Margarine | Equal variances assumed | 3.429 | 0.064 | −3.381 | 2301 | 0.001 | −0.177 | 0.052 | −0.280 | −0.074 |
| Equal variances not assumed | −3.363 | 1413.745 | 0.001 | −0.177 | 0.053 | −0.281 | −0.074 |
| Canned pâtés | Equal variances assumed | 1.693 | 0.193 | −4.937 | 2299 | 0.000 | −0.234 | 0.047 | −0.327 | −0.141 |
| Equal variances not assumed | −4.958 | 1448.441 | 0.000 | −0.234 | 0.047 | −0.327 | −0.142 |
The Body Mass Index is another independent variable, which is correlated with the consumption of some unhealthy food (margarine, pork meat, industrially obtained sweets, beer, energy drinks, and coffee) and some less sustainable eating behaviour (not having breakfast, not eating because of stress, skipping certain meals in order to prevent gaining weight).

4. Discussions

Sustainable food consumption behaviour is characterised by reduced consumption of meat and dairy products and increased consumption of fruits and vegetables [57,58]. Meat, fish, and dairy products are the main sources of protein, but in European countries, protein intake is higher than recommended by the WHO. Moreover, red meat consumption is twice as high as that recommended by the World Cancer Research Fund [59]. At the same time, fruit and vegetable consumption remains too low: More than half of Europeans eat less than 400 g per day, as recommended by the WHO [60,61]. Excessive meat consumption has been shown to harm the environment through carbon emissions [62] and on health, increasing the risk of chronic diseases [63]. In contrast, the consumption of fruit and vegetables helps maintain health and prevent diseases [17,64]. The same approach was taken by the authors of this study, who consider that a mixed diet is less sustainable than one based mainly on plant products. This idea is also supported by Perignon et al. [65], who consider that plant-based foods have a lower impact on the environment than those of animal origin and that the vegetarians’ health appears to be better than that of non-vegetarians. Thus, the adoption of vegetarian or vegan diets has a positive effect on both health and the environment. Mixed diets can also be healthy, as long as they contain a high consumption of fruits, vegetables, oilseeds, whole grains, and moderate consumption of red meat, fish, and dairy products [65].

The authors considered that students are a category of people with a high level of education and that this aspect is an essential predictor of fruit and vegetable consumption, which was confirmed by the research results. Results that converge in the same direction have been reported by other researchers [26–29]. They show that people with high socioeconomic status (high level of education) have healthier eating habits, characterised by increased consumption of fruits and vegetables.

A positive aspect regarding the sustainable consumption behaviour in Romania, Bulgaria, and Moldova is represented by the habit of consuming fruits and vegetables since childhood, as well as the frequency with which these foods are consumed by students (approximately 50% of them consume them daily). Similar results are reported by Poobalan et al. [66], who conducted a study among young people aged 18–25 and who identified 40% of respondents who consume a high quantity of fruits and vegetables. Low consumption of fruits and vegetables and high consumption of unhealthy foods is reported by Bernardo et al. [67], who conducted a review based on 37 studies on student eating behaviour.

Our results do not show differences between genders in terms of the habit of consuming fruits and vegetables during childhood (8–14 years old). Different results are reported by Birt et al. [68], who identified a higher consumption of fruits and vegetables among females, both children and adults. The same study reveals that in 2013/2014, the highest daily fruit consumption was noticed in girls from Albania, Denmark, and Switzerland (approximately 50%), and the lowest in boys in Finland (12%), Latvia, and Sweden (both 19%) [68]. The highest consumption of vegetables (although smaller than the recommended level of consumption) occurs in girls in Belgium (61% reported daily consumption), and the lowest in boys in Finland (15%) and Germany (16%). In the case of adults, women in Belgium consume the most vegetables (about 80%) and men in Germany the least (less than 30%) [68].

The diet is a mixed one, for 89.3% of the respondents of this research, a very low percentage of students having a vegetarian or semi-vegetarian diet. MacDiarmid [69] seeks to identify the reasons for consumers to adopt a mixed diet, which does not lack meat: One of them is the pleasure of taste, and the second is the opinion that a full menu should include meat. The same author explains that the lack of food knowledge leads to the choice of a mixed diet, consumers believing that a vegetarian diet can not contain enough protein [69].
Different results regarding the type of diet were obtained by Salameh et al. [70], who conducted a study on a sample of 3307 students from various universities in Lebanon and whose results show that only a third of them have a mixed diet, containing both animal and vegetable products [70].

Williams et al. [71] identified the existence of three diet patterns—healthy, Western, and unbalanced—for Australian students, most of whom were followers of either the Western or unbalanced diet. The results also highlighted that students tended to adopt unhealthy eating behaviour when faced with a mix of stressors related to time and financial management or when they were in the early stages of student life, characterised by efforts to adapt to new professional requirements [71]. In our case, the time factor also has a negative influence on food consumption behaviour. Thus, the results show that a quarter of respondents eat after 23:00, and one of the main reasons why they say they do not eat healthily is the lack of time.

The importance of socio-demographic factors related to the type of diet adopted by students is also highlighted by the research conducted by Williams et al. [71]. Our results also show the influence of socio-demographic factors on the frequency of consumption of foods considered less healthy and implicitly on the adoption of a sustainable diet. Thus, with age, the consumption of pork meat increases among the investigated students. Similar results are found in the study by Resano et al. [72], showing that the preference for pork rises with age. The same results were obtained in the case of wine consumption, which increases with age, results identified by Stanford [73]. Regarding coffee consumption, there are no differences between genders, until around the age of 31. Different results are reported by Demura et al. [74], who identified a much higher rate of consumption among young males than among females.

The existence of a correlation between weight gain and frequency of consumption of products such as beer, pork, chips, snacks, and pretzels was also demonstrated using secondary data analysis. Nelson et al. [75] also show that the factors that contribute to students’ weight gain include the consumption of alcohol, snacks, and other unhealthy foods. Gunes et al. [76] also identified a significant correlation between frequent beer and meat consumption and weight gain among students in Turkey, and a weak relationship between snack consumption and weight gain. Another study by Musaiger and Radwan [77] among students in the United Arab Emirates also reveals an insignificant correlation between snacking and obesity. Skipping meals predicts weight among students, as confirmed by Musaiger and Radwan [77] and by Rodrigues et al. [78].

The analysis of the correlation between age and certain eating practices reveals that, in general, eating while standing becomes more common with age. On the other hand, fasting to save money and having food after 23:00 is rarer. Striegel-Moore et al. [79] show that the prevalence of eating late is higher among young people and decreases with age. On the other hand, eating while standing and having the last meal of the day after 23:00 are good predictors for high weight. Late eating has also been identified by Nelson et al. [75] as one of the factors influencing weight gain.

The influence of gender on some unhealthy foods consumption (industrially obtained sweets, coffee, semi-prepared foods, beer, and frizzy drinks) reveals differences between women and men. Similar results were obtained by Kiefer et al. [80] in the case of sweets and frizzy drinks. Our analysis show that stress does not have the same effect on the eating practices of men that they do of women. This was also mentioned by Zellner et al. [81]. On the other hand, having the last meal of the day after 23:00 is more frequent among men than women. The consumption patterns have changed in the last 30 years in Eastern European countries. The consumption of unhealthy foods, such as margarine increased in the rural area, as was already mentioned by Görńska-Warszewicz et al. [82].

5. Conclusions

Due to this study, we can conclude that the investigated students from Romania, Bulgaria, and Moldova have food consumption and a lifestyle situated between sustainable and unsustainable behaviour. There are both positive and negative aspects identified in this regard. The research did not directly assess the level of knowledge of the notions related to sustainability among students.
Still, it evaluated habits and practices that lead to sustainable consumption behaviour, such as a diet based more on plant products and less on products of animal origin, higher consumption of fruits and vegetables, a consumption richer in healthy foods, and consumption that promotes conviviality. Students play a crucial role in helping sustainable consumption behaviour, through the choices of food they usually consume and the consumption habits that they have. It is noticed that their age influences the consumption of unhealthy foods. Thus, the more respondents’ age increases from adolescence to adulthood, the more frequently they consume food and beverages such as pork meat, canned meat, sunflower oil, wine, and coffee. At the same time, the daily consumption of food and beverages (pork, chips, pretzel snacks, and beer) leads to weight gain in students as they get older. This is also influenced by certain unhealthy eating practices, such as eating while standing and having the last meal of the day after 23:00. Gender is another socio-demographic factor that affects the consumption of unhealthy foods (industrially obtained sweets, semi-prepared foods, coffee, beer, and frizzy drinks), but also the less sustainable eating behaviour (eating because of stress and having a snack between meals). The number of household members can increase the consumption of basic food products such as white bread and sugar. Differences in unhealthy food consumption and behaviours are also determined by rural/urban residence and country of origin.

The present study has some limitations; the most important would be the indirect definition of sustainable consumption behaviour, based on the assessment of the frequency of consumption of certain foods and behaviours. For these reasons, it is recommended to carry out education and awareness campaigns for students from the three countries on what sustainable food consumption behaviour means and the subsequent evaluation of the acquired knowledge and behaviours.

Despite these limitations, the results of the study are original, as the issue of sustainable consumption behaviour has not been studied among student populations in Eastern Europe.

The study was conducted in a socioeconomic context of hyperconsumption [83], characterised by abundance and less modest purchases. Consumption behaviours of the investigated population are influenced by other variables, for example, the transition of the society, over time, from a totalitarian form of government to another, democratic. This leaves visible traces on the selection processes, on the purchasing decisions, and finally on how the consumption behaviours of the individuals are formed.

In the current context, this phenomenon can be seen as a limitation of the research, especially since we are going through a global, social crisis, in which various aspects of everyday life are reconfigured into a new paradigm. We recommend that researchers analysing the socioeconomic effects of the COVID-19 pandemic also check the impact on consumption habits. Thus, we expect to understand as clearly as possible, which are those elements that underpin sustainable consumption.

Author Contributions: The present paper has been conceived and designed jointly by C.B.P. and V.M. Conceptualization, C.B.P. and V.M.; introduction, R.-L.C. and A.A.R.; methodology, C.B.P. and V.M.; results and discussion, C.B.P. and V.M.; statistical analysis and interpretation, A.A., C.B.P., and V.M.; editing C.B.P., V.M., R.-L.C., and A.A.R. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by L’Agence Universitaire de la Francophonie en Europe Centrale et Orientale.

Acknowledgments: The authors declare no conflict of interest.

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

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