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Sustainable Behavior among Romanian Students: A Perspective on Electricity Consumption in Households

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Abstract: The Organization for Economic Co-operation and Development (OECD) estimates that the environmental pressure from households will increase significantly by 2030. Sustainable consumption means making consumers aware of the social and environmental impacts of the goods and services they use. In this respect, special attention must be paid to electricity consumption since its generation affects the environment. The present research aims at capturing electricity consumption behaviors among students, after having applied an online questionnaire between March and April 2021, recording 816 responses. The results of this research highlighted the fact that for seven out of fourteen statements, percentages of over 50% for the "always" and "often" answer variants were recorded, but cases when the highest percentages were for the "rarely" and "never" answer variants (e.g., "You read the hours on the light bulb packs before purchasing them", "You put your mobile phone in the power saving mode so that you don't have to charge it so often" and "You unplug the electrical and electronic equipment that you do not use") were also observed. Decrypting consumer behaviors is a key point for building strategies that will lead to consumers' awareness of conserving electricity in households and, thus, to a reduction in their environmental impact.

Keywords: electricity consumption; consumption behavior; households; students; sustainable consumption; environmental impact; environmental protection

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1. Introduction

Every day, the XXIst century's humans have to make choices that may seem difficult (but that are actually very easy) when it comes to standing for a lifestyle that we should adopt in order to live sustainably in a healthy and clean environment. These choices were encompassed under the key term of sustainability, a term which was used for the first time in 1987 in the Brundlandt Report of the World Commission on Environment and Development of the United Nations [1], which emphasized the necessity of finding some long-term measures to protect an already seriously damaged environment.

Due to the ecological attack that we have systematically subjected our planet to throughout time, sustainability has turned into a "lifestyle designed for permanence" [2]. With this perspective in mind, sustainability can be seen as a way in which we can pay for the damage done to our planet through our daily, conscious choices that can eventually have a huge positive impact on all our lives.

Although, initially, the concept of sustainability was only associated with the environment and the implementation of measures to reduce its degradation, the term is currently used to also include quality of life from an economic and social point of view, referring thus to the creation of a balance between the three "pillars" of sustainability (social, economic and environmental) [3–5].

Man is at the very heart of this balance, being largely responsible for the proliferation of the actions meant to attack the environment, which occur due to technological development [6], most of them being associated with consumption. Goods that used to

be considered as luxuries (TVs, phones, computers, cars, etc.), being owned only by the privileged classes, have now become mere necessities, accessible to almost everyone. All this overconsumption makes excessive use of the planet's energy and water resources and leaves behind an abundance of wastes and persistent organic pollutants.

It has even been postulated that, if the current lifestyle and, hence, current consumption remains unchanged and the world's population continues to grow, we will need two more Earth-like planets by 2050 [7]. Consequently, at the September 2015 Sustainable Development Summit, the adoption of the 2030 Agenda for Sustainable Development, comprising 17 Sustainable Development Goals (SDGs) was decided [8], Goal 12 setting up the framework for the course of action countries should take to implement significant changes regarding the population's sustainable consumption of goods and services [9].

In order to meet the challenges we face today, we need to change the way we produce and consume goods. We have to use fewer resources, reduce costs and minimize the impact on the environment, especially since the world's population is reaching eight billion people. We need natural resources to ensure our prosperity and well-being; in other words, we need to do more by consuming fewer resources.

Controversies around the efforts to come to terms with what sustainable consumption really means have been extensively presented in the literature. Sesini et al. [10] have analyzed a large corpus of written work on this topic, highlighting the fact that not only is the impact of consumption on the environment important, but the social and economic perspectives on sustainable consumption in different contexts also are. Dolan [11] also believes that more attention should be paid to social, cultural and historical contexts in order to modify consumption and make it more sustainable. The general consensus is that, in order to implement sustainable consumption, people's lifestyles need to change [7,12–14], either by using a different style of consumption or by reducing it (moderate simplifiers) [15].

As private consumption is being increasingly blamed for environmental degradation [16], one of the areas where consumers can intervene to help the planet by changing their lifestyles is electricity consumption.

Electricity generation and consumption put considerable pressure on the environment due to the fact that most countries rely mainly on fossil fuels (oil, gas and coal) to meet their energy demands. The burning of fossil fuels leads to huge amounts of carbon dioxide emissions being released into the atmosphere as well as to increases in other pollutants that spiral environmental degradation even further downward. The growing demand for electricity is also leading to the accumulation of increasing amounts of such substances.

Sustainable electricity consumption requires making consumers aware of the social and environmental impacts of the goods and services they use. But, in order to achieve this, we must first get acquainted with these habits, and then make the consumers conscious about the impact of their behavior on the environment. There is little information on how electricity is used in households, this information being a prerequisite for policy development and the initiation of a shift towards sustainable behavior. This research aims at remedying this situation and at contributing to a better understanding of electricity consumption behaviors among students. It is all the more important to observe how students view sustainable electricity consumption, learned and practiced at home, as they will be the ones to apply these sustainable behaviors at the workplace, where they will have to show that they are aware of organizational ethics and rally to sustainable behaviors, often established within companies [17].

1.1. Electricity Consumption—General Facts

One of mankind's greatest discoveries was probably electricity, without which life would be impossible today. The generation of electricity has drastically changed our lives, both from an industrial and a residential point of view, almost all domestic activities requiring its use. Although humanity has survived thousands of years without it, the modern man has become accustomed to being totally dependent on all its benefits.

Globally, in 2019, China, the most populous country, had the highest electricity consumption (6880 terawatt-hours), while the United States ranked second in electricity consumption with 4194 terawatt-hours, followed, at a significant distance, by India, in third place, with 1309 terawatt-hours (Appendix A) [18].

Being the most populated countries in the world does not necessarily mean that they also have the highest electricity consumption. Despite the fact that India exceeds the United States in terms of population, the US's consumption outstrips India's per capita consumption by far. This is due to the fact that the United States is much more urbanized and the inhabitants have higher incomes, therefore leading to higher electricity consumption. The sector that consumed the most electricity in the United States in 2019 was the residential one (1,440,289 million kilowatt-hours), followed by the commercial (1,360,877 million kilowatt-hours), the industrial (1,002,353 million kilowatt-hours) and the transportation (7632 million kilowatt-hours) sectors.

During 2005–2018, the majority of global electricity consumption was used by industry (39%), followed by the residential (22%) as well as the commercial and services sectors (15%). The International Energy Agency also explains that, in 2020, due to the measures imposed by the COVID-19 pandemic, the commercial sector was the most affected one, with a decrease in global electricity demand of about 2%, while in 2021 it is expected to increase by 3%, being, therefore, higher than in 2019. The uncertainty presented by 2021 in terms of the electricity demand consists in the duration and forms of the pandemic, in the measures taken by governments in this respect and in the vaccines' effectiveness; again, the commercial and services sector will be affected by possible new lockdowns (Appendix B) [19].

Regarding recent electricity consumption in the European Union, due to the restrictive measures (closure of factories, schools, restaurants, etc.) imposed by many states in 2020, electricity consumption in June 2020 was 7.6% lower than the lowest value recorded in June during 2016–2019 (Figure 1) [20].

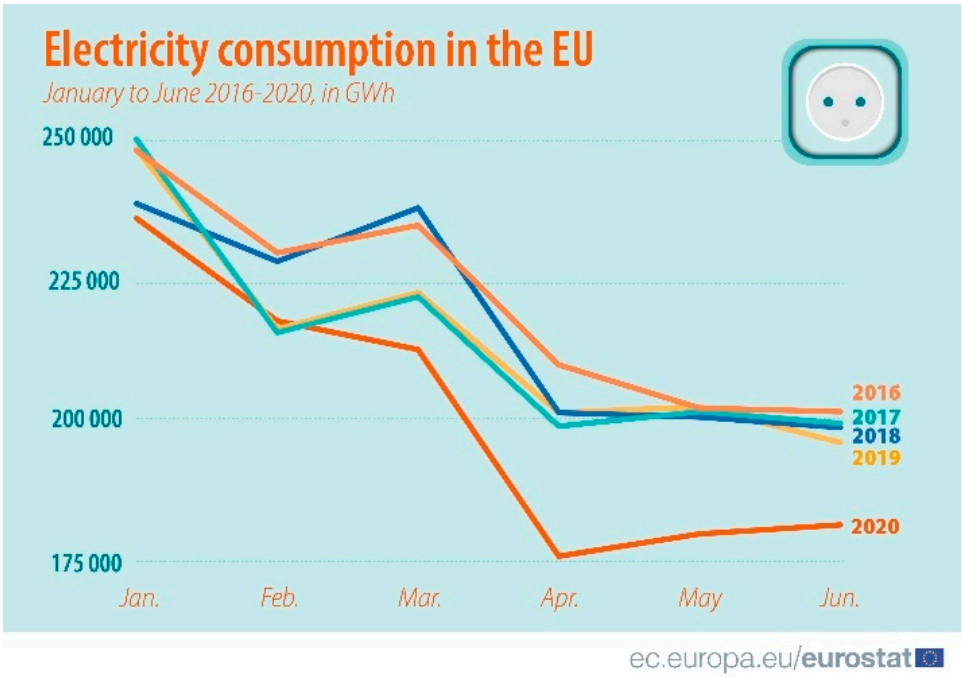

Figure 1. Electricity consumption in the EU, January–June 2016–2020.

In 2021, in Europe, electricity demand is expected to grow by 2.3%, although this is still 2% lower than in 2019 [19].

1.2. Electricity Consumption in Households

In 2018, households accounted for 26.1% of final energy consumption in the EU, covered by gas (32.1%), electricity (24.7%), renewables (19.5%), petroleum products (11.6%) and derived heat (8.7%) [21].

As for residential consumption, an important discrepancy can be observed between European Union countries in the residential sector, from a consumption of below 1 MWh per capita in Romania, Poland, Latvia and Slovakia to a consumption of over 4 MWh per capita in Sweden and Finland. Appendix C presents the per capita consumption in different European Union countries in 2018 [22].

Regarding energy consumption in European households broken down by household use, for 2018, it can be noticed that 63.6% was used for space heating and 14.1% of total energy was used for lighting and electrical appliances (excluding the electricity used for the heating, cooling or cooking systems) [23]. In the case of Romania, it is close to the European average, i.e., 62.6% of energy consumption went to space heating, while 13.4% went to space lighting (Appendix D) [23].

The residential sector has the highest share in final energy consumption at the national level (33.16% in 2018), and residential sector consumption is lower compared to the reference year 2015 due to the implementation of energy efficiency policies and programs (thermal insulation of apartment buildings, labeling of household appliances, etc.) [24].

Electricity seems to be used in Romanian households only for lighting and the use of electrical appliances. It can also be seen that, from final energy consumption, for house heating Romanians choose gas (30.2%), renewables (53.1%) and only 0.2% opt for electricity. For water heating, there are reversed percentages for gas and renewables and only 2% opt for electricity. As for cooking, Romanians use gas (62%) as well as oil and petroleum products (31.3), while renewables score only 6.3% and electricity is almost non-existent with a figure of 0.1% (Appendix E, Figures A5–A7) [25].

Seeing that households are huge consumers of electricity, research should focus on increasing the efficiency of electricity consumption within them.

The research conducted by Lei et al. [26] presents the results obtained under the largest subsidy program in the field of electricity (USD 4.26 billion) launched in 2012 in China. A sample of 2630 consumers in ten cities found that the program had a strong impact on the population, who were aware of the need to save energy and chose energy-efficient appliances in households.

Lifestyle, influenced by people's cultural and behavioral characteristics, also seems to influence energy consumption in a household. This is demonstrated by the use of the dishwasher, accounting for 21% of household energy consumption in households in the UK and for 51% in households in Sweden [27]. A study by Wilhite et al. [28] compared household energy use in two very different countries, Japan and Norway, concluding that Norwegian households have much more energy-efficient heating and lighting behavior than Japanese households, perhaps due to the fact that Norwegians have considerably less sunlight throughout the year and have lower temperatures. Likewise, Norwegians also heated their whole house to a greater extent than the Japanese did, who only heated the rooms they used, a behavior that could be explained for the Norwegians by the fact that energy prices are lower in Norway, although some researchers [29] consider that there are cultural, physical and psychological reasons for this behavior in the case of Norwegians [30].

The studies on electricity in Romania have focused on the liberalization of the electricity market and the privatization of some state energy companies [31,32], on the analysis of the causal relationship between electricity consumption and economic growth [33,34], on models of residential electricity consumption [35], on methods for estimating and forecasting electricity consumption of non-residential consumers in Romania [36] or on explaining the behavior of the household electricity consumer in Romania when choosing another electricity supplier in a liberalized market [37].

However, no study aims at observing and discussing household consumers' sustainable behavior regarding electricity. Understanding consumption habits with respect to electricity of certain population categories is the first step to a more efficient use of these resources. An "X-ray" of these consumption habits can help identify the existing problems and find solutions that lead, through specific information campaigns customized for target audiences, to consumer awareness, mobilization and involvement in actions targeting consumption reduction.

2. Materials and Methods

This research was carried out quantitatively, being based on the social survey method. The subjects were students from the Politehnica University of Timisoara and the data were collected in March and April 2021. The reason for choosing students as the target group for this study was mainly due to the fact that they are a very informed group of people regarding the environment and that, as future parents and house owners, they can be the advocates for some sustainable behaviors within households. In total, 816 answers were recorded, the surveyees being selected from every year of study. The calculated margin of error was of ±3.3%, the above-mentioned university consisting of approximately 13,000 students. The gender ratio was an almost equal one and the average age, according to the recorded results, was 20.37 years old.

The instrument used for the data collection was an anonymous online survey, posted on the Isondaje.ro platform (an online survey service). This type of instrument was chosen due to the impossibility of meeting face-to-face in the COVID-19 pandemic context. At the same time, an online survey was considered as the best option in this case since almost all the students had an Internet connection and a mobile phone with which they could fill in the questionnaire.

At the end of their lectures, practical classes or lab activities, the students received the link to the online questionnaire and the details needed to fill in the answers. They were not obliged in any way to complete the questionnaire, the activity being a voluntary one. No incentives were used to obtain the answers and the students had the option to give up completing it at any time. For anonymity and confidentiality purposes, their e-mail addresses were not collected. The average time required to answer the questionnaire was 15 min and the recorded response rate was approximately 50%.

The sample was built taking into account each respondent's gender, as the aim of the research was to identify any differences in behavior within the investigated population, the age and the urban/rural background variables being considered less important than gender. Starting from the assumption that a student's gender may impact their behaviors and attitudes regarding the idea of sustainability, two approximately equal groups of students were created. The first group was made up of female students (409 people) and the second one of male students (407 people). Therefore, this research has tried to investigate whether differences between the two groups actually exist.

A non-standardized questionnaire was used to collect the data, its content being validated through an assessment by experts (sociologists), followed by qualitative pretesting and a quantitative pretesting.

In order to create the questionnaire, Romanian web pages that promoted the idea of a sustainable behavior in everyday life were first identified. Next, based on these web pages, a list of recommendations aimed at adopting a sustainable behavior regarding electricity consumption in the household was made. Finally, they were transformed into scale questions that were included in the questionnaire. The closed-ended questions, with a 5-point measuring scale, targeted sustainable electricity consumption in households (14 statements), while at the end of the questionnaire factual data regarding gender, age, year of study and rural/urban background were included. The data were analyzed using SPSS Statistics, a software package frequently used for statistical analysis.

The research questions were the following:

- What are the students' household electricity behaviors?

- What are the differences in electricity consumption behavior between the female and male respondents?

This study aims at identifying these household electricity behaviors as well as the measures that can be taken in order to make them more efficient. By becoming more aware of the ways in which we use electricity, by changing our behaviors and doing things differently in order to cut down on consumption, the future will surely look more sustainable for everyone.

3. Results

There are many ways in which we can use electricity responsibly and sustainably without losing sight of our needs and out of respect for the environment. Knowing and understanding consumption habits is the first step towards more efficient electricity usage. As has been mentioned in the methodology, in order to better comprehend behaviors that conserve electricity in the household, some suggestions that promoted the idea of sustainable behavior were pinpointed from specialized Romanian websites. Fourteen recommendations were identified and then converted into statements regarding sustainable electricity behavior in the household. Therefore, for a better understanding of the results, two graphs were created: the first one encompasses the data obtained from cumulating the percentages for "always" and "often" which gave a figure higher than 50%.

As can be seen in the figure below (Figure 2), for the studied population, sustainable behaviors regarding electricity consumption in the household do exist because seven of the fourteen statements scored percentages that were higher than 50%. The highest scores were recorded for "You turn off the light when you leave the room" (94%), "You air-dry your clothes instead of using the tumble dryer" (89.6%) and "You open the blinds and let the natural light come into the house" (89.2%).

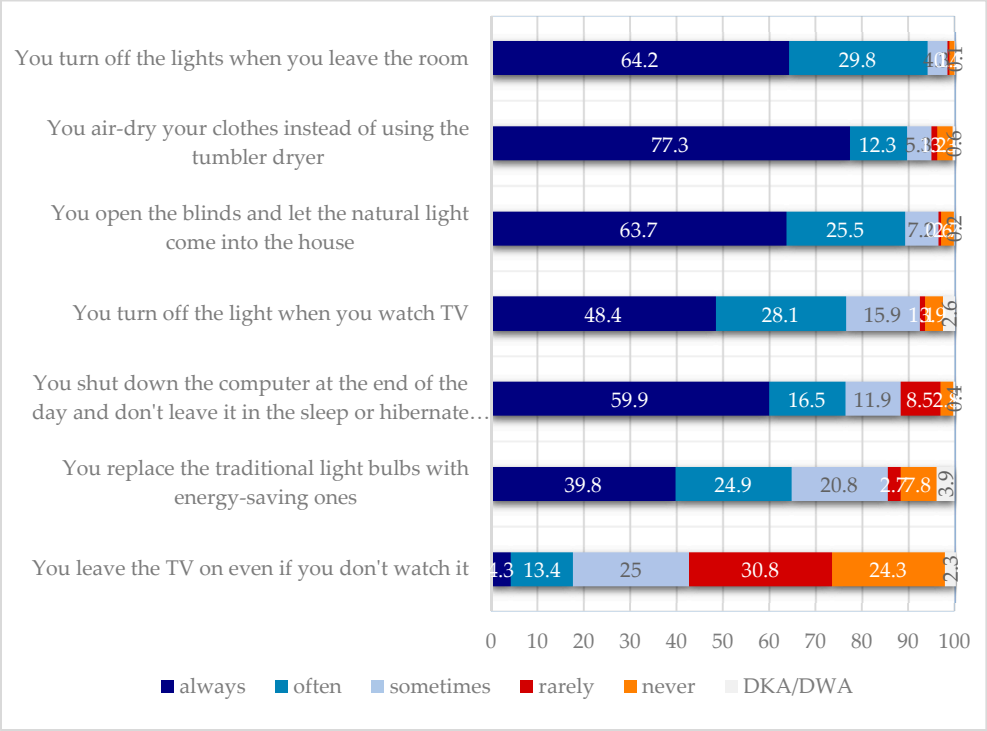

Figure 2. Household electricity behaviors. Percentages recorded for the studied population (I).

The "You turn off the light when you watch TV" and "You shut down the computer at the end of the day and don't leave it in the sleep or hibernate mode" statements, which scored more than three-fourths of the percentages, i.e., 76.5% and 76.4%, respectively, can also be taken into account.

"You replace the traditional light bulbs with energy-saving ones" scored more than half of the percentages, namely 64.7%. "You leave the TV on even if you don't watch it" must be assessed in a reversed order since the "never" and "rarely" answers totaled 55.1% of all the answers. Even if these answers indicate the absence of the behavior, for this statement, the cumulative percentages show the existence of the sustainable behavior regarding electricity consumption due to the fact that the TV is turned off if the person does not watch TV.

The statements cumulating the highest percentages for "never" and "rarely" can be found at the other extreme. The absence of such behaviors may also point out the lack of the studied population's awareness of the possibility of reducing household electricity consumption, which might lead to better environmental protection.

Figure 3 shows that the highest percentage (59.4%) was recorded for the "You read the hours on the light bulb packs before purchasing them" statement. This is followed in descending order of the recorded percentages by "You put your mobile phone in the power saving mode so that you don't have to charge it so often", which cumulated 37.2% of the students' answers.

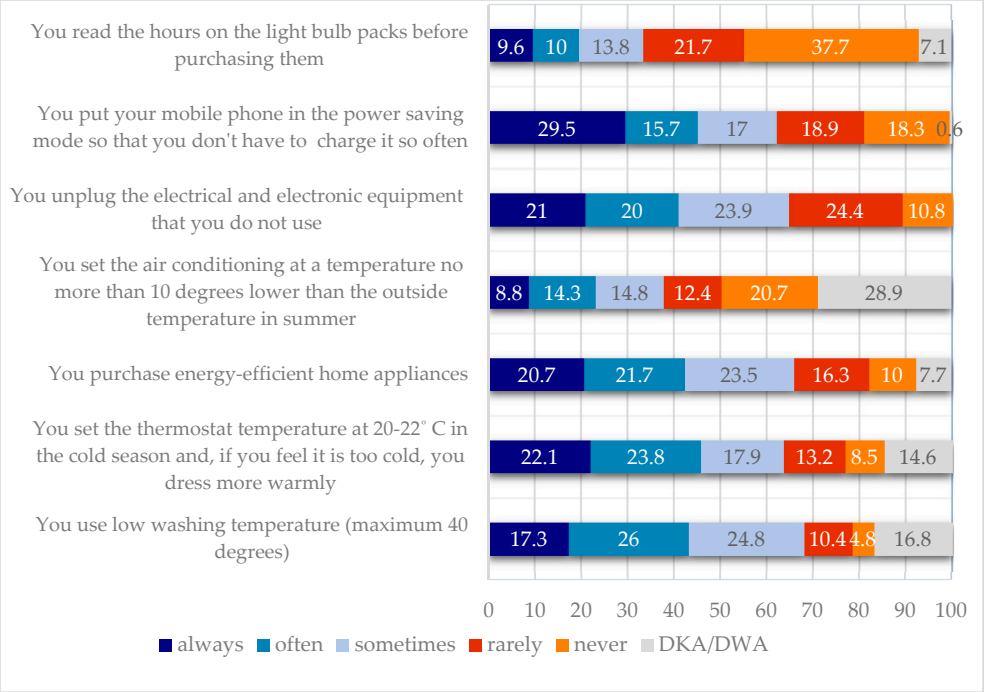

Figure 3. Household electricity behaviors. Percentages recorded for the studied population (II).

Almost a third of the respondents (35.2%) chose "never" and "rarely" as answers for "You unplug the electrical and electronic equipment that you do not use". Similar percentages (33.1%) were scored for "You set the air conditioning at a temperature no more than 10 degrees lower than the outside temperature in summer". Almost a fourth of the respondents were not interested in purchasing "energy-efficient home appliances". The statements cumulating the lowest percentages for these answers were "You set the thermostat temperature at 20–22 °C in the cold season and, if you feel it is too cold, you dress more warmly" (21.7%) and "You use low washing temperature (maximum 40 degrees)" (15.2%). In reality, these low percentages emphasize the existence of sustainable behaviors regarding household electricity consumption.

With the purpose of capturing other aspects of these sustainable behaviors, a secondary analysis was carried out in order to investigate the existence of significant differences in the studied population based on the respondents' gender. Following the application of the

chi-square test, the results show that there are differences between males and females in five of the fourteen statements (Table 1).

Table 1. Chi-square test results.

		Value	df	Asymptotic Significance (2-Sided)
You air-dry clothes instead of using the tumbler dryer	Pearson chi-square	18.057	5	0.003
	Likelihood ratio	18.482	5	0.002
	Linear-by-linear association	13.225	1	0.000
	N of valid cases	816		
You unplug the electrical and electronic equipment that you do not use	Pearson chi-square	20.445	4	0.000
	Likelihood ratio	20.780	4	0.000
	Linear-by-linear association	17.127	1	0.000
	N of valid cases	816		
You open the blinds and let the natural light come into the house	Pearson chi-square	29.590	5	0.000
	Likelihood ratio	29.920	5	0.000
	Linear-by-linear association	24.623	1	0.000
	N of valid cases	816		
You put your mobile phone in the power saving mode so that you don't have to charge it so often	Pearson chi-square	15.114	5	0.010
	Likelihood ratio	15.205	5	0.010
	Linear-by-linear association	11.283	1	0.001
	N of valid cases	816		
You use low washing temperature (maximum 40 degrees)	Pearson chi-square	71.692	5	0.000
	Likelihood ratio	76.727	5	0.000
	Linear-by-linear association	24.811	1	0.000
	N of valid cases	816		

Based on these results, the following observations can be made:

- There are significant differences between females and males in the way they "air-dry clothes instead of using the tumbler dryer". A value of χ^2 = 18,057 and a value of p = 0.03 ($p < 0.05$) were recorded. The results show that this type of behavior is more specific to females than to males.
- "You unplug the electrical and electronic equipment that you do not use" recorded a value of χ^2 = 20,445 and a value of p = 0.000 ($p < 0.05$). Again, the results pinpoint the fact that there are notable differences based on gender, namely, that this type of behavior is more specific to females than to males.
- For "You open the blinds and let the natural light come into the house", a value of χ^2 = 29.590 and a value of p = 0.000 ($p < 0.05$) were observed. The results indicate the fact that the studied female population exhibits this behavior more than the studied male population.
- A value of χ^2 = 15.114 and a value of p = 0.01 ($p < 0.05$) were recorded for "You put your mobile phone in the power saving mode so that you don't have to charge it so often". The results point out that this type of behavior is more specific to females than to males.
- "You use low washing temperature (maximum 40 degrees)" recorded a value of χ^2 = 71.692 and a value of p = 0.000 ($p < 0.05$). This statement has provided the same results as the above-mentioned statements, i.e., the female population exhibits this type of behavior more than the male population.

As has been stated above, the high percentages obtained for the "never" and "rarely" answers for the last seven statements, i.e., the absence of these behaviors, could be the starting point for carrying out awareness campaigns for the studied population, which could lead to an increase in the share of those who adopt sustainable electricity behaviors

and, thus, those that protect the environment. The gender differences, identified in the provided answers, must also be taken into consideration.

4. Discussion

Our consumption habits have changed in recent years, mainly due to higher incomes, economic globalization, technological leaps, etc. It is estimated that if we maintain the current trends, by 2050 we will extract five times more resources than at present, and this is not possible [38].

Because any resource must be consumed in a sustainable way, we must first be aware of this when we consume. By reducing the amounts of energy required in certain daily activities by adopting rational behaviors, the pressure on energy systems will be weakened, pollution will be reduced and it will contribute to reducing the negative impacts on ecosystems.

This study has focused on students as they represent a significant percentage of the young and educated population, who should set future trends in sustainable consumption behaviors and can act as ambassadors for such behaviors. The analysis aims at providing an "X-ray" of electricity consumption behaviors in daily life, a photograph of this reality without elaborating on these behaviors, as a detailed analysis will be performed in a future piece of research.

In order to have a better grasp on the population that is the main object of this study, i.e., the students, other studies that could shed light on the students' sustainable electricity behaviors were investigated. Students' electricity patterns have been studied by researchers in the USA [39], South Africa [40] and the Netherlands [41], among others, with the purpose of understanding the variables in energy use by the students. Still, these studies do not discuss the existence of sustainable electricity consumption among students. As far as Romania is concerned, there are also studies conducted on students' sustainable behavior, but again, they do not focus on electricity.

A study on students from three countries, Romania, Bulgaria and the Republic of Moldova [42], on healthy food consumption assessed their food habits and practices rather than their sustainability knowledge, positing that age, gender, unhealthy practices (e.g., eating while standing), the number of members in a household, the urban or rural environment and the country of origin influence unsustainable behavior related to food.

Another study [43] took into account the age, gender and place of origin of 352 Romanian students from different universities in order to explore their inclination for certain types of food and clothing and to observe the degree of their awareness related to sustainability.

The need to establish a level of environmental education was investigated in a piece of research on students undertaking engineering and economics studies at the University of Baia Mare [44]. The study's conclusion was that students participating in environmental courses are involved in volunteer activities related to environmental protection, the authors supporting the importance of universities educating students in this field. The same topic—that of courses providing education on sustainable development in universities—was discussed in another study [45] conducted in economic universities in Romania, and the results described the definite need for courses, programs and projects on sustainable development since the interviewed students, despite their positive attitude, did not seem to have an adequate perception of this issue.

Therefore, it seems that most studies on Romanian students focus either on their food behavior or on the need for educational programs on sustainable behavior. There were other studies conducted on the students of the Politehnica University of Timisoara, but they focused more on topics such as migration, the students' values or their attitudes regarding online education and were not related to the topic of this paper [46–48].

The results of this research have highlighted the fact that students show sustainable behaviors with regard to electricity consumption. This is because, for seven of the fourteen statements about sustainable electricity consumption, this behavior has recorded percentages of over 75% for "always" and "often" answers for statements such as "you turn off

the light when you leave the room", "you air-dry your clothes instead of using the tumble dryer", "you open the blinds and let the natural light come into the house", "you turn off the light when you watch TV" and "you shut down the computer at the end of the day and don't leave it in the sleep or hibernate mode". The same category of behaviors, which have recorded values of higher than 50%, also includes "you replace the traditional light bulbs with energy-saving ones" and the fact that "you leave the TV on even if you don't watch it".

Needless to say, cases in which sustainable consumption is less present have also been identified, but this does not mean that sustainable consumption does not exist. The questions that have recorded the highest percentages for the "rarely" and "never" answers are "you read the hours on the light bulb packs before purchasing them", "you put your mobile phone in the power saving mode so that you don't have to charge it so often", "you unplug the electrical and electronic equipment that you do not use", "you set the air conditioning at a temperature no more than 10 degrees lower than the outside temperature in summer", "you unplug electrical and electronic equipment you do not use", "you set the air conditioning to a temperature at most 10 degrees lower than outside during the summer", "you purchase energy-efficient home appliances" and "you set the thermostat temperature at 20–22 °C in the cold season and, if you feel it is too cold, you dress more warmly".

Another aspect that was pointed out by this study is that the female population behaves more responsibly than the male population when it comes to electricity consumption.

As mentioned above, the high percentages obtained for these statements, i.e., the absence of these behaviors, could be the starting point for conducting awareness campaigns within the study population in order to increase the share of those who embrace reduction behaviors in terms of electricity consumption and, therefore, environmental protection. The gender differences identified in the provided answers must also be taken into account and are paramount for further studies.

It is very likely to expect a change in these electricity consumption behaviors as a result of the effects produced by the COVID-19 pandemic on energy-poor households in Europe and, thus, in Romania. Energy poverty means living in a home that does not have an optimal level of temperature or has an energy-inefficient building, as well as the inability to access clean energy sources. The decrease in income or the loss of it and the soaring power bills as a result of higher residential electricity consumption during the pandemic due to the increased time spent at home, following the decree imposing the state of emergency, teleworking and the closure of schools in the whole educational system will definitely escalate this process [49].

Although this study delves into the topic and offers some answers related to sustainable behavior regarding electricity, there are some limitations to the present analysis, e.g., the geographic area and the fact that only the perspective of the students from the Politehnica University of Timisoara has been captured. Therefore, it is necessary to carry out new research that targets the entire student population in the region or in the country, and which should include, in addition to the values and environmental concerns that the subjects have, a number of other variables such as employment situation, financial situation, the number of family members, accommodation (on the university campus or in rented apartments, the number of people they live with and the distribution of electricity expenses—at a flat rate or individually), the type of housing, the types of electric appliances owned, etc. In addition, it would be useful to carry out qualitative analyses, leading to a better understanding of these consumer behaviors.

5. Conclusions

As the planet is losing its vital signs day by day, sustainable consumption becomes a necessary behavior that will have to be taught, learned and adopted from a very young age.

Sustainable electricity consumption remains a challenge for public authorities, companies and consumers who will need to be more responsible in this regard. Decrypting

consumer behaviors is a key point for building strategies that will lead to consumers' awareness of conserving electricity in households and, thus, to a reduction in their environmental impact. This, of course, should go hand in hand with advancements in decarbonizing the sector and increasing the share of the use of renewables, an initiative that the major polluters have already subscribed to.

Higher education institutions can play an important role in the fight to adopt sustainable behaviors, and initiatives in this area are needed to achieve the overall goal of creating a sustainable university. This study also paves the way for a future investigation of students' electricity consumption patterns in the Politehnica University of Timisoara's campus, with the purpose of helping the university develop more sustainable strategies for cutting down electricity consumption and have a more sustainable campus, without an environmental impact. Research conducted on different university campuses of the world has already emphasized this aspect [50–52].

Besides providing a novel image of sustainable electricity behaviors in Romania among students, the information offered by this study can serve as a basis for future analyses that will focus on this topic among different categories of users, who will also have to be made aware of the ways in which they can improve their behaviors in order to make them more sustainable. Therefore, as other researchers [53] have also emphasized, the importance of environmental awareness/consciousness and commitment to a green lifestyle in shaping consumers' pro-environmental behaviors is paramount.

Starting from an assessment of real-life data, by identifying those behaviors that need intervention, either for remedy or change, the measures that lead to a reduction in electricity consumption can also be identified. They can be achieved either by identifying technical solutions or by carrying out awareness campaigns on the importance of electricity consumption reduction. Any awareness campaign for the population must start from an assessment of the existing reality and, based on the information obtained, measures must be proposed to remedy and/or change observed individual behaviors. Once these behaviors are known, practical solutions can be found, allowing for the drafting of recommendations and of a framework for their application. Such information will be useful both to the people responsible for drafting public policy documents and to other actors involved in this process (universities, local authorities, environmental organizations, interest groups, electricity suppliers, etc.) for identifying solutions for energy and environmental protection challenges.

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Appendix A

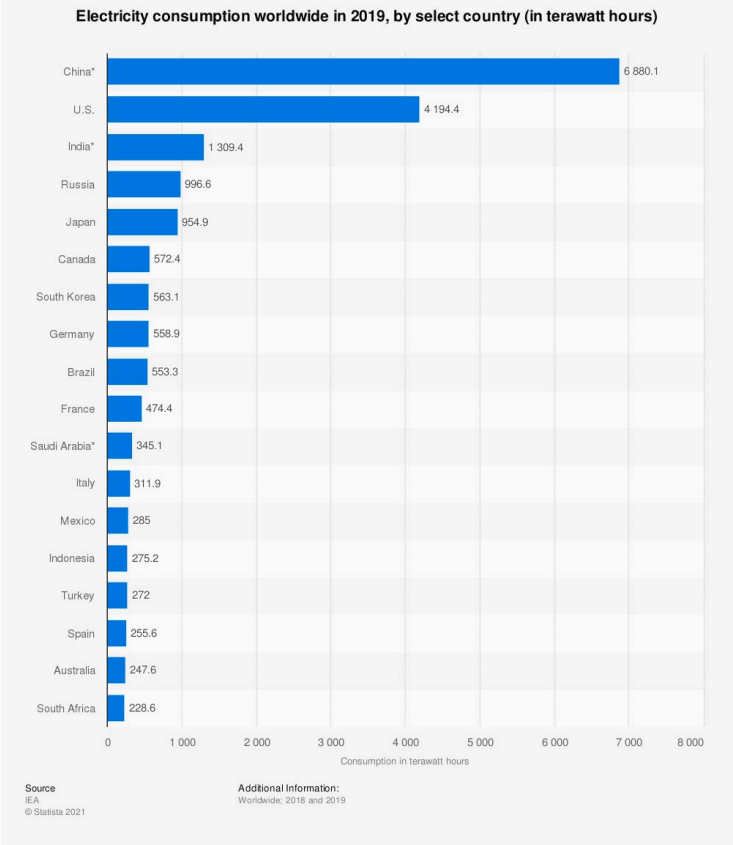


Figure A1. Electricity consumption worldwide in 2019, by select country (in terawatt-hours) (* shows consumption for 2018).

Appendix B

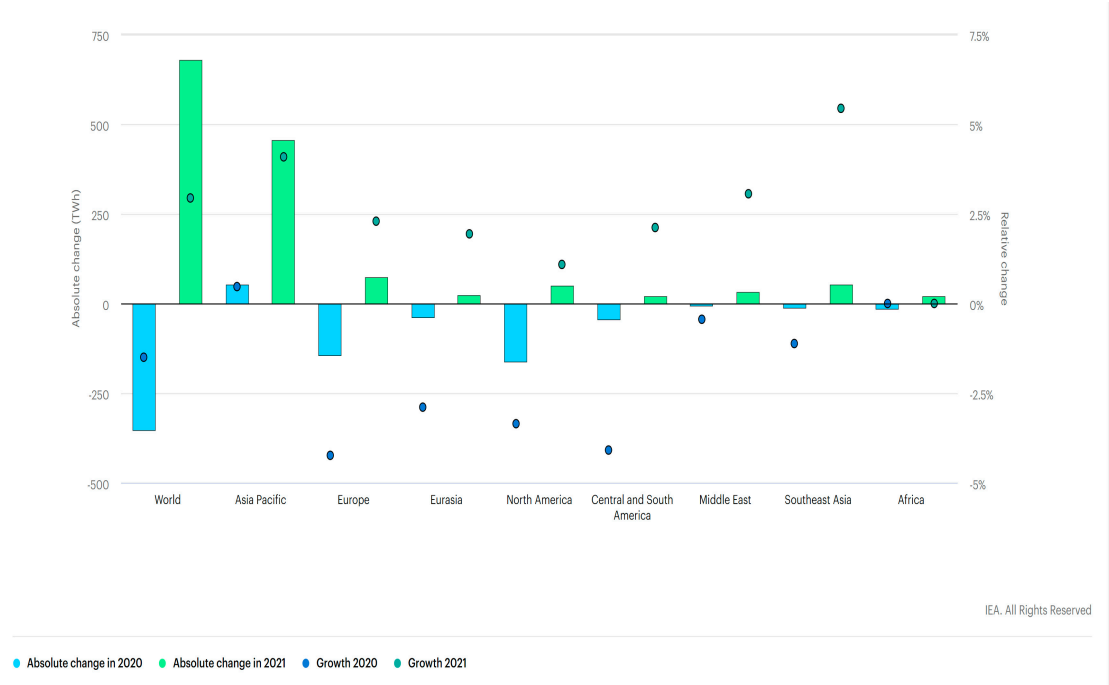
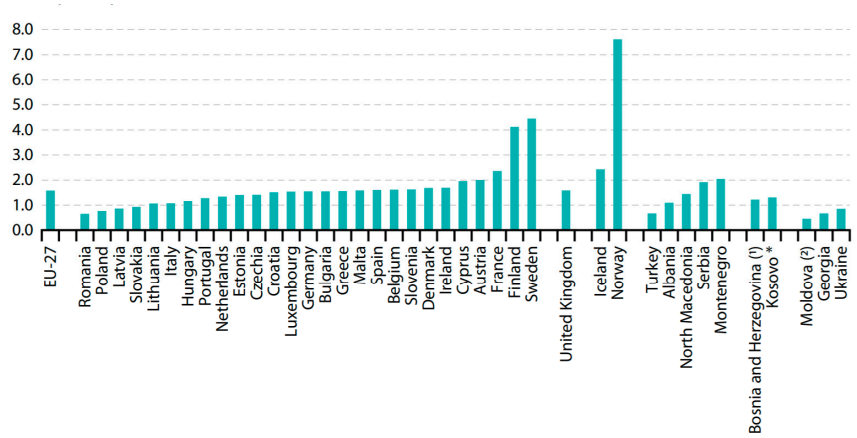


Figure A2. Estimated electricity demand growth by region, 2020 and 2021.

Appendix C



(1) 2012 data instead of 2018 for population.
(2) 2014 data instead of 2018 for population.

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence.

Source: Eurostat (online data codes: nrg_cb_e and demo_pjan)

Figure A3. Household consumption of electricity per capita, 2018.

Appendix D

Share of final energy consumption in the residential sector by type of end-use, 2018
(%)

	Space heating	Space cooling	Water heating	Cooking	Lighting and appliances	Other end uses
EU - 27	**63.6**	**0.4**	**14.8**	**6.1**	**14.1**	**1.0**
EU - 28	**63.6**	**0.3**	**15.0**	**5.7**	**14.6**	**0.9**
Belgium	73.5	0.1	11.9	1.7	12.5	0.4
Bulgaria	52.8	0.4	18.0	8.5	20.2	0.0
Czechia	68.5	0.1	17.0	6.2	6.6	1.6
Denmark	62.5	0.0	21.3	1.6	14.0	0.6
Germany	66.0	0.2	16.9	6.5	9.4	0.9
Estonia	72.7	0.0	11.8	4.9	10.6	0.0
Ireland	60.5	0.0	19.1	2.3	17.2	0.9
Greece	54.5	3.6	15.2	6.2	20.5	0.0
Spain	43.1	1.0	17.0	7.4	31.4	0.0
France	64.9	0.2	11.3	5.5	18.0	0.0
Croatia	68.3	1.9	10.0	6.5	13.2	0.0
Italy	66.6	0.7	12.4	6.6	12.5	1.4
Cyprus	35.4	11.4	23.9	7.3	21.8	0.1
Latvia	66.0	0.0	18.5	7.1	7.9	0.6
Lithuania	70.3	0.0	8.9	6.4	14.4	0.0
Luxembourg	78.7	0.3	7.6	2.6	10.9	0.0
Hungary	71.7	0.1	12.8	4.9	10.4	0.0
Malta	20.4	12.3	25.4	14.4	25.7	1.9
Netherlands	63.4	0.2	16.7	2.1	17.5	0.1
Austria	69.0	0.0	14.8	2.7	10.3	3.1
Poland	65.3	0.0	16.4	8.3	10.0	0.0
Portugal	28.2	0.6	17.4	35.6	18.1	0.0
Romania	62.9	0.3	13.5	9.8	13.4	0.0
Slovenia	61.2	0.5	16.8	4.3	17.2	0.0
Slovakia	67.1	0.2	14.0	5.7	13.1	0.0
Finland	66.9	0.1	15.1	1.0	11.5	5.5
Sweden	54.8	0.0	14.1	1.5	19.2	10.3
United Kingdom	63.5	0.0	16.4	2.8	17.3	0.0
Norway	66.4	0.1	12.9	1.5	18.2	0.8
North Macedonia	60.4	2.1	12.5	9.8	15.2	0.0
Albania	31.4	5.7	21.3	29.5	12.1	0.0
Serbia	61.1	0.5	14.0	7.2	17.2	0.0
Bosnia and Herzegovina	73.1	0.6	9.6	5.0	11.8	0.0
Kosovo*	70.3	3.6	6.7	7.4	9.7	2.3
Moldova	70.5	0.1	9.9	11.7	7.8	0.0
Ukraine	54.8	0.4	13.3	17.5	14.0	0.0

(*)This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

Source: Eurostat (online data code: nrg_d_hhq)

eurostat

Figure A4. Share of final energy consumption by end use, 2018.

Appendix E

Share of fuels in the final energy consumption in the residential sector for space heating, 2018
(%)

	Electricity	Derived Heat	Gas	Solid fuels	Oil & petroleum products	Renewables and Wastes
EU-27	**5.2**	**10.6**	**38.0**	**5.1**	**14.1**	**27.0**
EU-28	**5.4**	**9.3**	**42.9**	**4.6**	**13.3**	**24.5**
Belgium	3.2	0.3	47.1	1.2	37.9	10.4
Bulgaria	8.8	16.7	5.3	9.8	0.1	59.3
Czechia	4.7	13.5	24.8	18.0	0.8	38.1
Denmark	2.8	36.6	15.5	0.0	4.1	41.0
Germany	1.8	9.1	48.1	1.3	23.6	16.1
Estonia	5.1	37.4	5.9	0.2	0.3	51.2
Ireland	4.0	0.0	25.6	17.6	50.1	2.6
Greece	4.8	2.2	13.6	0.2	43.0	36.2
Spain	7.3	0.0	19.5	0.9	31.9	40.5
France	12.7	4.0	34.8	0.1	14.7	33.8
Croatia	1.8	6.5	21.9	0.1	4.7	65.0
Italy	0.4	5.1	58.4	0.0	7.8	28.3
Cyprus	13.0	0.0	0.0	0.0	63.0	24.0
Latvia	0.7	33.3	7.7	0.7	3.0	54.6
Lithuania	1.3	38.4	10.3	5.2	1.8	42.9
Luxembourg	4.2	0.0	54.6	0.1	34.0	7.2
Hungary	0.8	8.3	56.3	2.3	0.2	32.0
Malta	37.4	0.0	0.0	0.0	19.0	43.5
Netherlands	2.1	3.5	86.2	0.0	0.6	7.6
Austria	4.8	14.5	26.2	0.4	18.6	35.5
Poland	0.9	20.1	14.9	44.9	0.8	18.5
Portugal	12.5	0.1	1.0	0.0	5.5	80.9
Romania	0.2	16.0	30.2	0.5	0.0	53.1
Slovenia	3.9	9.4	12.5	0.0	15.0	59.2
Slovakia	5.7	25.0	65.4	1.2	0.3	2.4
Finland	24.2	29.9	0.5	0.1	5.9	39.4
Sweden	29.3	48.7	0.6	0.0	4.0	17.4
United Kingdom	6.4	1.1	74.7	2.0	7.8	7.9
Norway	63.4	2.9	0.0	0.0	1.8	31.9
North Macedonia	26.6	11.6	0.1	0.3	1.7	59.9
Albania	45.8	0.0	0.0	0.0	19.3	35.0
Serbia	8.0	22.5	10.3	13.4	1.7	44.1
Bosnia and Herzegovina	0.4	7.5	2.0	6.1	1.8	82.2
Kosovo*	10.4	2.4	0.0	1.2	0.0	86.1
Moldova	0.5	11.2	15.8	3.0	0.0	69.5
Ukraine	1.8	18.2	57.3	2.8	0.1	19.8

Figure A5. Share of fuels in final energy consumption in the residential sector for space heating, 2018 (%).

Share of fuels in the final energy consumption in the residential sector for water heating, 2018
(%)

	Electricity	Derived Heat	Gas	Solid fuels	Oil & petroleum products	Renewables and Wastes
EU-27	**20.5**	**13.1**	**40.6**	**1.8**	**11.3**	**12.6**
EU-28	**18.5**	**11.2**	**47.1**	**1.6**	**10.7**	**11.0**
Belgium	30.4	0.0	48.9	0.0	17.3	3.5
Bulgaria	58.7	31.5	2.7	0.5	0.1	6.5
Czechia	23.0	27.3	36.0	2.2	0.0	11.5
Denmark	4.6	63.2	17.2	0.0	8.4	6.5
Germany	14.3	3.5	49.3	0.0	16.2	16.5
Estonia	5.5	59.7	6.4	0.1	0.2	28.0
Ireland	15.5	0.0	29.7	5.5	44.5	4.7
Greece	39.4	0.8	6.8	0.0	7.1	45.9
Spain	18.7	0.0	45.6	0.2	23.9	11.6
France	50.0	6.5	27.1	0.0	12.3	4.1
Croatia	44.5	3.8	37.6	0.1	3.4	10.7
Italy	13.4	4.0	65.0	0.0	8.0	9.5
Cyprus	14.4	0.0	0.0	0.0	8.6	77.0
Latvia	12.6	44.5	9.9	0.4	3.7	29.0
Lithuania	9.7	51.8	13.5	2.6	4.2	18.2
Luxembourg	4.0	0.0	56.3	0.0	30.6	9.2
Hungary	39.5	16.1	38.4	0.0	1.4	4.5
Malta	78.7	0.0	0.0	0.0	0.0	21.3
Netherlands	4.0	5.4	89.2	0.0	0.0	1.4
Austria	28.5	11.7	17.6	0.1	10.3	31.8
Poland	5.7	37.1	29.4	17.9	1.2	8.8
Portugal	5.4	0.0	33.2	0.0	42.2	19.2
Romania	2.0	0.0	54.5	0.7	5.9	36.8
Slovenia	29.5	7.5	12.5	0.0	9.1	41.5
Slovakia	20.8	25.5	47.9	2.5	1.0	2.4
Finland	25.0	55.0	0.6	0.1	6.5	12.8
Sweden	32.8	54.7	0.6	0.0	3.2	8.6
United Kingdom	6.4	0.0	84.4	0.3	7.1	1.8
Norway	96.3	3.7	0.0	0.0	0.0	0.0
North Macedonia	99.8	0.0	0.0	0.0	0.0	0.2
Albania	51.7	0.0	0.0	0.0	17.3	31.0
Serbia	94.3	2.6	2.1	0.5	0.1	0.4
Bosnia and Herzegovina	89.7	0.0	4.3	0.0	0.0	6.0
Kosovo*	100.0	0.0	0.0	0.0	0.0	0.0
Moldova	9.2	11.7	17.5	4.1	11.3	46.3
Ukraine	14.8	30.5	51.2	0.7	0.4	2.4

Figure A6. Share of fuels in final energy consumption in the residential sector for water heating, 2018 (%).

Share of fuels in the final energy consumption in the residential sector for cooking, 2018
(%)

	Electricity	Derived Heat	Gas	Solid fuels	Oil & petroleum products	Renewables and Wastes
EU-27	**49.2**	**0.0**	**31.0**	**0.6**	**13.5**	**5.6**
EU-28	**49.0**	**0.0**	**32.5**	**0.6**	**12.6**	**5.3**
Belgium	61.0	0.0	32.8	0.0	6.2	0.0
Bulgaria	74.2	0.0	2.2	0.8	10.9	11.9
Czechia	45.9	0.0	49.0	0.2	2.4	2.5
Denmark	96.9	0.0	3.1	0.0	0.0	0.0
Germany	92.6	0.0	2.6	0.0	0.0	4.9
Estonia	41.8	0.0	16.7	0.0	13.8	27.8
Ireland	76.1	0.0	22.4	0.0	1.5	0.0
Greece	70.0	0.0	0.9	0.0	24.9	4.3
Spain	53.6	0.0	26.7	0.7	16.6	2.4
France	49.5	0.0	30.3	0.0	20.2	0.0
Croatia	36.4	0.0	24.8	0.0	25.2	13.5
Italy	15.2	0.0	70.3	0.0	10.0	4.5
Cyprus	34.7	0.0	0.0	0.0	65.3	0.0
Latvia	14.4	0.0	39.6	0.0	15.3	30.6
Lithuania	15.8	0.0	40.1	0.7	34.3	9.1
Luxembourg	44.7	0.0	53.6	0.0	1.7	0.0
Hungary	12.4	0.0	67.9	0.0	19.5	0.2
Malta	17.1	0.0	0.0	0.0	82.9	0.0
Netherlands	33.8	0.0	66.2	0.0	0.0	0.0
Austria	91.0	0.0	4.8	0.0	0.3	3.9
Poland	16.9	0.0	44.2	4.9	30.7	3.3
Portugal	44.4	0.0	9.2	0.0	15.6	30.8
Romania	0.1	0.0	62.0	0.4	31.3	6.3
Slovenia	49.9	0.0	15.9	0.0	22.9	11.2
Slovakia	24.4	0.0	69.6	3.2	0.5	2.3
Finland	91.8	0.0	0.8	0.0	7.4	0.0
Sweden	98.5	0.0	1.5	0.0	0.0	0.0
United Kingdom	46.2	0.0	53.8	0.0	0.0	0.0
Norway	100.0	0.0	0.0	0.0	0.0	0.0
North Macedonia	76.9	0.0	0.0	0.0	13.0	10.1
Albania	34.2	0.0	0.0	0.0	36.8	29.0
Serbia	60.5	0.0	2.5	1.5	4.0	31.4
Bosnia and Herzegovina	43.7	0.0	4.2	0.6	4.1	47.4
Kosovo*	100.0	0.0	0.0	0.0	0.0	0.0
Moldova	11.5	0.0	53.4	0.0	27.0	8.0
Ukraine	9.4	0.0	88.5	0.0	2.1	0.0

Figure A7. Share of fuels in final energy consumption in the residential sector for cooking, 2018 (%).

References

1. Brundtland, G.H. (Ed.) Report of the World Commission on Environment and Development: Our Common Future. United Nations General Assembly Document A/42/427. 1987. Available online: https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf (accessed on 1 May 2021).
2. Schumacher, E.F. *Small is Beautiful: Economics as if People Mattered*; Harper Perennial: New York, NY, USA, 1973; p. 19.
3. Purvis, B.; Mao, Y.; Robinson, D. Three pillars of sustainability: In search of conceptual origins. *Sustain. Sci.* **2019**, *14*, 681–695. [CrossRef]
4. Geiger, N.; Swim, J.K. A balance theory perspective into lay perceptions of the three pillars of sustainability. In *The Sustainability Communication Reader: A Reflective Compendium*; Weder, F., Krainer, L., Karmasin, M., Eds.; Springer: Berlin/Heidelberg, Germany, 2021.
5. Mensah, J. Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review. *Cogent Soc. Sci.* **2019**, *5*. [CrossRef]
6. Goudie, A. *The Human Impact on the Natural Environment: Past, Present and Future*, 7th ed.; John Wiley and Sons: Hoboken, NJ, USA, 2013; p. 327.
7. Laurett, R.; do Paço, A.M.F.; Mainardes, E.W. Sustainable Consumer Lifestyles/Sustainable Consumption. In *Responsible Consumption and Production. Encyclopedia of the UN Sustainable Development Goals*; Leal Filho, W., Azul, A., Brandli, L., Özuyar, P., Wall, T., Eds.; Springer: Cham, Switzerland, 2020; pp. 751–759. [CrossRef]
8. Transforming our World: The 2030 Agenda for Sustainable Development. United Nations–Department of Economic and Social Affairs. Available online: https://sdgs.un.org/2030agenda (accessed on 19 April 2021).
9. Goal 12: Ensure Sustainable Consumption and Production Patterns. United Nations Sustainable Development Goals. Available online: https://www.un.org/sustainabledevelopment/sustainable-consumption-production (accessed on 3 May 2021).
10. Sesini, G.; Castiglioni, C.; Lozza, E. New Trends and Patterns in Sustainable Consumption: A Systematic Review and Research Agenda. *Sustainability* **2020**, *12*, 5935. [CrossRef]
11. Dolan, P. The Sustainability of "Sustainable Consumption". *J. Macromark.* **2002**, *22*, 170–181. [CrossRef]
12. Hobson, K. Competing Discourses of Sustainable Consumption: Does the "rationalisation of Lifestyles" Make Sense? *Env. Polit.* **2002**, *11*, 95–120. [CrossRef]
13. Newman, C.L.; Howlett, E.; Burton, S.; Kozup, J.C.; Tangari, A.H. The Influence of Consumer Concern about Global Climate Change on Framing Effects for Environmental Sustainability Messages. *Int. J. Advert.* **2012**, *31*, 511–527. [CrossRef]
14. Chen, C.F. Consumer's Lifestyle and its Impact on Eco-Product Aesthetics. In *Sustainability Through Innovation in Product Life Cycle Design*; Matsumoto, M., Masui, K., Fukushige, S., Kondoh, S., Eds.; Springer: Singapore, 2017; pp. 1021–1031. [CrossRef]
15. Peyer, M.; Balderjahn, I.; Seegebarth, B.; Klemm, A. The Role of Sustainability in Profiling Voluntary Simplifiers. *J. Bus. Res.* **2017**, *70*, 37–43. [CrossRef]
16. Schrader, U.; Thøgersen, J. Putting Sustainable Consumption into Practice. *J Consum. Pol.* **2011**, *34*, 3–8. [CrossRef]

17. Fărcaşiu, M.A. Cultural Challenges in Teaching Ethics to Romanian Engineering Students. *Bul. Ştiinţ. UPT* **2017**, *16*, 61–68.
18. Electricity Consumption Worldwide in 2019, by Select Country. Available online: https://www.statista.com/statistics/267081/electricity-consumption-in-selected-countries-worldwide/ (accessed on 22 May 2021).
19. IEA—Electricity Market Report—December 2020- Outlook for 2021. Available online: https://www.iea.org/reports/electricity-market-report-december-2020/outlook-2021 (accessed on 16 May 2021).
20. EU's Electricity Consumption Still below Normal Levels. 7 September 2020. Available online: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20200907-1 (accessed on 18 May 2021).
21. Energy Consumption in Households–Eurostat. Available online: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_consumption_in_households#Energy_products_used_in_the_residential_sector (accessed on 1 May 2021).
22. *Energy, Transport and Environment Statistics*, 2020 ed.; European Union: Brussel, Belgium, 2020; p. 43. Available online: https://ec.europa.eu/eurostat/documents/3217494/11478276/KS-DK-20-001-EN-N.pdf/06ddaf8d-1745-76b5-838e-013524781340?t=1605526083000 (accessed on 29 April 2021).
23. Energy Consumption and Use by Households–Eurostat 20 June 2019. Available online: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190620-1 (accessed on 2 May 2021).
24. Raport Privind Progresul Înregistrat în Îndeplinirea Obiectivelor Naţionale de Eficienţă Energetică 2020, Direcția Eficiență Energetică Ministerul Economiei, Energiei și Mediului de Afaceri. Available online: https://ec.europa.eu/energy/sites/default/files/documents/ro_annual_report_eed_2020.pdf (accessed on 15 May 2021).
25. Electricity Price Statistic–Eurostat. Available online: https://ec.europa.eu/eurostat/statistics-explained/index.php/Electricity_price_statistics#Electricity_prices_for_household_consumers (accessed on 19 May 2021).
26. Lei, Z.; Yang, Y.; Jiayang, L. China's Promoting Energy-Efficient Products for the Benefit of the People Program in 2012: Results and analysis of the consumer impact study. *Appl. Ener.* **2014**, *133*, 22–32. [CrossRef]
27. Levine, M.; Ürge-Vorsatz, D.; Blok, K.; Geng, L.; Harvey, D.; Lang, S.; Levermore, G.; Mongameli Mehlwana, A.; Mirasgedis, S.; Novikova, A. Residential and commercial buildings. In *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*; Metz, B., Davidson, O.R., Bosch, P.R., Dave, R., Meyer, L.A., Eds.; Cambridge University Press: Cambridge, UK, 2007; pp. 387–446.
28. Wilhite, H.; Nakagami, H.; Masuda, T.; Yamaga, Y.; Haneda, H. A cross-cultural analysis of household energy use behaviour in Japan and Norway. *Energy Pol.* **1996**, *24*, 795–803. [CrossRef]
29. Sovacool, B.K.; Griffiths, S. The cultural barriers to a low-carbon future: A review of six mobility and energy transitions across 28 countries. *Renew. Sustain. Energy Rev.* **2020**, *119*, 109569. [CrossRef]
30. Rahmani, O.; Rezania, S.; Beiranvand Pour, A.; Aminpour, S.M.; Soltani, M.; Ghaderpour, Y.; Oryani, B. An Overview of Household Energy Consumption and Carbon Dioxide Emissions in Iran. *Processes* **2020**, *8*, 994. [CrossRef]
31. Haar, L.N.; Marinescu, N. Energy policy and European utilities' strategy: Lessons from the liberalisation and privatisation of the energy sector in Romania. *Energy Pol.* **2011**, *39*, 2245–2255. [CrossRef]
32. Popovici, V. 2010 power generation sector restructuring in Romania-A critical assessment. *Energy Pol.* **2011**, *39*, 1845–1856. [CrossRef]
33. Kayhan, S.; Adiguzel, U.; Bayat, T.; Lebe, F. Causality Relationship between Real GDP and Electricity Consumption in Romania (2001–2010). *J. Econ. Forec.* **2010**, *169*, 169–183.
34. Shahbaz, M.; Mutascu, M.; Tiwari, A.K. Revisiting the Relationship between Electricity Consumption, Capital and Economic Growth: Cointegration and Causality Analysis in Romania. *J. Econ. Forec.* **2012**, *3*, 97–120.
35. Atanasiu, B.; Bertoldi, P. Residential electricity consumption in New Member States and Candidate Countries. *Ener. Build.* **2008**, *40*, 112–125. [CrossRef]
36. Bianco, V.; Manca, O.; Nardini, S.; Minea, A. Analysis and forecasting of nonresidential electricity consumption in Romania. *Appl. Energy* **2010**, *87*, 3584–3590. [CrossRef]
37. Maxim, A. Explaining the Behavior of Romanian Household Electricity Consumers on a Changing Market. *Proc. Econ. Fin.* **2015**, *20*, 383–392. [CrossRef]
38. Gestionarea Resurselor. Comisia Europeana. Available online: https://ec.europa.eu/environment/basics/green-economy/resources/index_ro.htm (accessed on 25 April 2021).
39. Edgar, J.; Gefre, E. University Student Electrical Consumption Comparison and Analysis. For Honors. Bachelor's Thesis, University of Oregon, Eugene, OR, USA, 2007.
40. Masebinu, S.O.; Holm-Nielsen, J.B.; Mbohwa, C.; Padmanaban, S.; Nwulu, N. Electricity consumption data of a student residence in Southern Africa. *Data Brief* **2020**, *32*, 10615. [CrossRef]
41. Bernard, J. Energy Behaviour in Dutch Student Houses an Analysis of Energy Use and Energy Time of Use in a Field Lab Setting. Master's Thesis, Management Studies and Urban Economics, Wageningen University and Research, Wageningen, The Netherlands, 2017. Available online: https://edepot.wur.nl/418777 (accessed on 15 May 2021).
42. Pocol, C.B.; Marinescu, V.; Amuza, A.; Cadar, R.-L.; Rodideal, A.A. Sustainable vs. Unsustainable Food Consumption Behaviour: A Study among Students from Romania, Bulgaria and Moldova. *Sustainability* **2020**, *12*, 4699. [CrossRef]
43. Ianole-Călin, R.; Rădulescu, M.; Druică, E. Sustainable Consumption Behavior among Romanian Students. In *Sustaining Our Environment for Better Future*; Springer: Singapore, 2020; pp. 159–174.

44. Boca, G.D.; Saraçlı, S. Environmental Education and Student's Perception, for Sustainability. *Sustainability* **2019**, *11*, 1553. [CrossRef]
45. Novo-Corti, I.; Badea, L.; Tirca, D.M.; Aceleanu, M.I. A pilot study on education for sustainable development in the Romanian economic higher education. *Int. J. Sust. High. Educ.* **2018**, *19*, 817–838. [CrossRef]
46. Gherheș, V.; Stoian, C.E.; Fărcașiu, M.A.; Stanici, M. E-Learning vs. Face-To-Face Learning: Analyzing Students' Preferences and Behaviors. *Sustainability* **2021**, *13*, 4381. [CrossRef]
47. Dragomir, G.M.; Cernicova-Buca, M.; Gherhes, V.; Cismariu, L. Engineering Students' Human Values as Rhizomatic Lines of Sustainability. *Sustainability* **2020**, *12*, 7417. [CrossRef]
48. Gherheș, V.; Dragomir, G.M.; Cernicova-Buca, M. Migration Intentions of Romanian Engineering Students. *Sustainability* **2020**, *12*, 2484. [CrossRef]
49. Sărăcia Energetică Crește Odată cu Criza COVID-19. Este Timpul Pentru Dreptul la Energie!, Centrul pentru Studiul Democrației. September 2020. Available online: https://www.democracycenter.ro/romana/publicatii/policy-briefs/saracia-energetica-creste-odata-cu-criza-covid-19-este-timpul-pentru-dreptul-la-energie (accessed on 20 May 2021).
50. Murshed, M. Electricity conservation opportunities within private university campuses in Bangladesh. *Energy Environ.* **2020**, *31*, 256–274. [CrossRef]
51. Bonnet, J.F.; Devel, C.; Faucher, P.; Roturier, J. Analysis of electricity and water end-uses in university campuses: Case-study of the University of Bordeaux in the framework of the Ecocampus European Collaboration. *J. Clean. Prod.* **2002**, *1*, 13–24. [CrossRef]
52. Petersen, J.E.; Frantz, C.M.; Shammin, M.R.; Yanisch, T.M.; Tincknell, E.; Myers, N. Electricity and water conservation on college and university campuses in response to national competitions among dormitories: Quantifying relationships between behavior, conservation strategies and psychological metrics. *PLoS ONE* **2015**, *10*, e0144070. [CrossRef]
53. Yusliza, M.Y.; Amirudin, A.; Rahadi, R.A.; Nik Sarah Athirah, N.A.; Ramayah, T.; Muhammad, Z.; Dal Mas, F.; Massaro, M.; Saputra, J.; Mokhlis, S. An Investigation of Pro-Environmental Behaviour and Sustainable Development in Malaysia. *Sustainability* **2020**, *12*, 7083. [CrossRef]