*Article*

# The COVID-19 Lockdown Effect on the Intention to Purchase Sustainable Brands

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**Abstract:** After the World Health Organization (WHO) declared the COVID-19 pandemic on 11 March 2020, almost all European countries entered a lockdown. This context caused sudden changes at multiple levels, affecting the way people were working, buying, studying and even the way they were interacting. Moreover, during lockdown people showed a special attention to local and sustainable brands giving momentum to the interest on sustainability, that has been increasing in the last years. Therefore, this study aims to determine the intention of buying sustainable and local brands due to the COVID-19 lockdown. An online survey was conducted for two groups of young adults from Spain and Romania, between April and June 2020. The questionnaire respects the methodological recommendations of Azjen (1985) and related literature on how to construct a survey based on the theory of planned behavior (TPB) and it aims to gather information about the three main constructs that determine the individual's behavioral intention: attitudes, subjective norms and perceived behavioral control. The results suggest that both Spanish and Romanian samples intended to buy more local and sustainable brands, despite the slightly different attitudes. Moreover, the data show that both subjective norms and perceived behavioral control influence attitudes toward sustainable and local brands, and hence, indirectly the intention to buy sustainable products. The outcomes are adding to the literature on sustainability, and understanding the effects of COVID-19 on consumer behavior. Additionally, the results can help better understand the importance of sustainability in Spain and Romania, and therefore, offering support to practitioners in building policies and programs that encourage a sustainable lifestyle.

**Keywords:** theory of planned behavior; COVID-19; purchase intention; structural equation modeling; sustainability

## 1. Introduction

On 11 March 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic [1]. By 15 August 2020, COVID-19 had spread across 213+ countries and territories, with more than 20 million confirmed cases and 751,154 deaths [2], making it the most devastating disease in over a century. As the COVID-19 pandemic continued to spread across the globe, massive disruption changed the world as we knew it.

The severe repercussions of the COVID-19 pandemic have resulted in a painful economic recession across the world: in the United States, according to the "advance" estimates, in the second quarter of 2020, GDP decreased by 32.9% [3] and in the European Union (EU) by 11.9%, with respect to the previous quarter. Restrictions and lockdowns across the world have affected global supply chains, and hence seriously damaging the global economy [4].

From a psychological perspective, the anxiety and the worries of society are affecting every individual to variable extents. Recent studies suggest that the experience of isolation

and quarantine produced significant distress in the form of depression, anxiety, anger, confusion and post-traumatic stress symptoms [5–9]. The long term impact of this prolonged stress period on mental health of children and adults alike is still to be determined.

In terms of education, according to [10], at the end of March, over 1.5 billion students in 191 countries had been affected by the COVID-19 outbreak and school closure, representing 90.3% of the world's enrolled learners. All face-to-face classes were suspended and educational activities were moved online through virtual platforms. The 2020–2021 academic year started fully online in many parts of the world.

Although, by autumn 2020, there was more information on the pandemic and the protective measures to take, the complexity of the problem is constantly generating uncertainty for individuals and organizations alike [11]. As a result that context is an essential element in human behavior, there is a plethora of research analyzing the impact of different events on individuals and organizations in terms of buying and consumption behavior. Previous studies on behavioral changes during or after large-scale events, such as earthquakes, terrorist attacks, tsunamis, major floods, epidemics or pandemics, show major disruptions in consumption patterns, production, investment and consumer expenditures [9,12–17].

Ref. [13], in a research developed in The Netherlands, has pointed out that a number of outbreaks have triggered perceived risk in purchasing behavior at supermarkets and supply food chains. In the same vein, studies conducted after hurricane Katrina, such as [14], suggest a permanent change in consumer behavior lasting several years after. Moreover, [17] identify the increase in levels of stress due to loss of control after the storm as an antecedent of compulsive purchasing. Other studies suggest that initial increase in purchases immediately after the event was followed by a long term decrease in consumption and overspending, as in making better choices [14].

An ever increasing number of discoveries have come to underline changes in consumer behavior due to stressful events that pose a threat to one's wellbeing, and likewise propel an assortment of compensatory changes intended to deal with pressure and lighten existential tension [18–22]. However, research additionally features that it is not simply the fiasco setting but instead the person's response to the upsetting condition that may decide conduct reactions [23] and that the expressed attitudes of individuals do not always align with behavior [24]. Several studies pointed out that although the context may incite dread and negative insights towards shopping encounters, therefore the administration of dread may irrationally persuade shopping practices [21,25].

Research on the immediate effect of the COVID-19 pandemic on consumption and consumer behavior show several changes in behavior, such as stockpiling and hoarding, improvising, postponing acquisitions, embracing digital technology and home delivery, blurred work-life boundaries, virtual reunions with friends and family and discovery of talent and do-it-yourself projects [22,26–28].

Moreover, as pointed out in [29], consumers' preference for mass products has diminished, compared to niche products. In the same vein, another study done on 2000 UK adults showed that the lockdown due to COVID-19 has increased by 45% the variety of foods consumed, while a 26% rise revealed a preference towards exotic dishes [30]. Another recent study done in Bangalore (India) during the same period of time has shown that 50% of consumers spent time searching for information and purchasing products via online platforms [31].

In terms of brand choices, in a recent Edelman Trust Barometer survey which included 12,000 consumers worldwide [32], 65% of consumers declared that their future purchase decisions will be shaped by the response of brands to the pandemic. One third of respondents to the survey expressed that they had just quit utilizing a brand that was not acting suitably in light of the general wellbeing emergency—a figure that rose to 76% of buyers in Brazil and to 60% in India. These results reinforce the idea that the bond established between the brand and the consumers during this crisis era can be more meaningful and lasting than during "peaceful" times [33].

Undoubtedly, large-scale traumatic events have a significant impact over a whole range of consumer behaviors: endurance brain psychology research recognizes that people may enroll social changes because of the event of specific occasions, including cataclysmic events, medical care emergencies and psychological oppressor assaults [34]. This is one of the reasons why, due to large-scale impact, COVID-19 related research can be developmental for comprehension and maybe envisioning the fate of stun and emergency research [35].

As a result that some consumption patterns registered during the COVID-19 crisis will revert to long-term trend lines, although at different speeds, the current role of consumer research is to distinguish between temporarily postponed, accelerated or disturbed consumption, and new, more permanent patterns of consumption [36].

In this research, we test the use of the theory of planned behavior as a frame to explain the changes in the intention of buying sustainable and local brands during the COVID-19 lockdown in young adults, what would serve to predict their engagement in concrete behavior in the future.

In Section 2, we briefly review the literature on sustainable shopping and also the theory of planned behavior as a frame for explaining changes in consumption patterns; in Section 3, we describe the data and the appropriateness of structural equation modeling for the research. Finally, in Section 4, we present the main results and conclude in Section 5.

## 2. Literature Review and Hypothesis Development

### 2.1. The Importance of Sustainability

In the last years, fortunately, sustainability has become a more decisive factor when shopping for all types of products. A global report on sustainability done by [37] highlights that 73% of consumers affirm that they would definitely or probably change their consumption habits to reduce their impact on the environment and 41% are willing to pay more for organic products. Another study showed that, for more than 90% of consumer packaged goods in the North-American market, sustainability-concerned products sales increased faster than their conventional equivalents [38].

It is of interest to highlight that the literature review shows contradictory results on the topic of consumer behavior of sustainable products for European countries in general and specifically Spain and Romania. While, generically, there are studies showing that Spanish people have a high interest in the sustainability feature of their shopping [39], there are still other researches showing that customers would rather focus on the better price than sustainability, such as [40].

Recent studies analyzing the importance of sustainability in the Spanish market support the global increasing trend [41]. In 2020, an extended survey done by Association of Manufacturers and Distributors in Spain (AECOC) states that 44% of consumers declared to have stopped buying the products of those brands that they do not consider sustainable. This percentage is even higher among the participants under 34 years of age. At the same time, 59% of the respondents acknowledge that they find it difficult to lead a sustainable lifestyle and also have difficult access to sustainable options [39]. When disentangling the determinants of the ability to pay for sustainable food items, [41] found that Spanish people were willing to pay a premium price for organic and local almonds which, in the end, generate fewer greenhouse gases emissions. Contrary to this research, a study done in 2016, on 2.026 Spanish respondents, reveals that women are more often in charge with the food shopping activity and they are looking especially for the best deals; the economic factors, more than health or the sustainability, are commonly considered by the population when shopping for food [40].

Analyzing the sustainable behavior in the case of Romania, Ref. [42] found that Romanians were not particularly committed in the purchase of green products, making their behavior not environmentally responsible. Thereby, the consumption behavior of green products is not very favorable, since most of the people are buying green products every four to six months. As in the Spanish population, there is evidence that Romanians are also willing to pay up to 44% higher price for organic food products, and even up to

80% more for the small farmers' products [43]. Meanwhile, another study underlines that Romanian consumers were inclined to choices including local and organic food providers, while two-thirds of the respondents were inclined to the purchase of locally produced foods over alternative sources [44]. Though there are many studies analyzing the perception or willingness to pay for organic, sustainable brands, many of these investigations are focused on food products or tourism. Considering this, the present research adds new insights to the field of consumer behavior in terms of the intention to purchase sustainable brands for these two specific countries, results that may be useful for academia, managers and society in general.

### 2.2. Theory of Planned Behavior and Sustainability

As previously stated, COVID-19 has brought major disruptions in all areas of our lives and the anxiety and insecurities surrounding the pandemic inevitably influence the whole range of consumer behavior. To further understand the context and patterns of behavior, various theories were analyzed and after an extensive review of the literature, we considered that the most appropriate model for this endeavor is the theory of planned behavior (TPB) proposed by [45]. The model proposed by [45] has been used to determine the perceptions and purchasing intentions across a variety of industries and products, from food [46] to clothing [47], to online complaints [48] and even service-delivery drones [49].

Regarding the topic of sustainability, the TPB model has proven to be successful in explaining various types of environmental behavior [50–52]. The relevance of the TPB model is also highlighted by the fact that together with the theory of reasoned action (TRA) by [53], it is one of the most objective models in the study of consumer behavior, as [54] concluded following the analysis of 53 published papers on the study of ecologically concerned purchase conduct from 2000 to 2014. As a consequence, there are many studies using this model to understand consumers' buying behavior in normal times, such as [55] or [56] or [57] and, during uncertain times too [13,25,58–61].

TPB suggests that there are three basic factors that influence an individual's intended behavior, namely: attitude, subject norms and perceived behavioral control. Attitude toward the behavior refers to the degree to which a person has a favorable or unfavorable evaluation of a specific behavior [62], while the other two of the three TPB pillars, subjective norm and perceived behavioral control, describe changes in consumer behavior due to a crisis [63] which impacts the purchase intention or behavior.

According to the TPB theory in Figure 1, the intention to play out a conduct is the prompt antecedent of any behavior. As a general rule, the more grounded the aim or intention to participate in a conduct, the more probable its implementation should be. In addition, perceived behavioral control is conceptualized to impact conduct straightforwardly in that regardless of whether one expects to accomplish something, s/he might be not able to do as such if the conduct is not under volitional control.
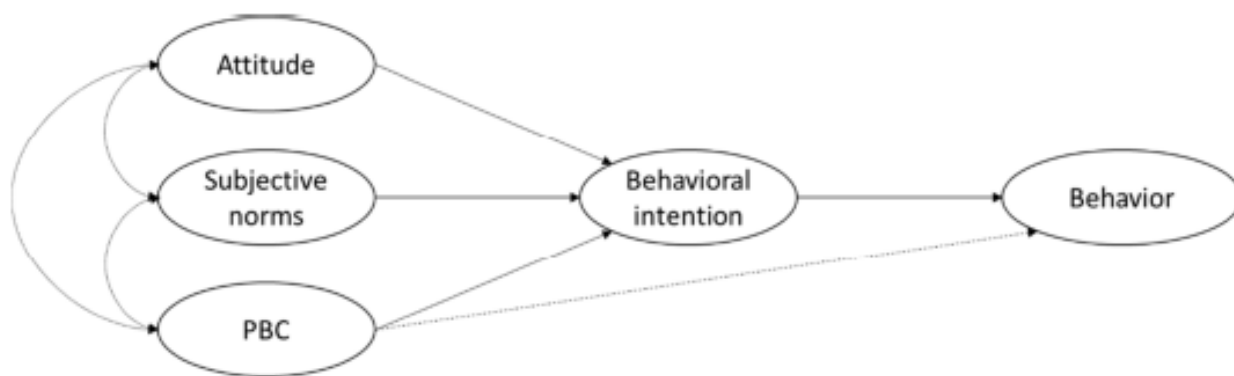


**Figure 1.** Theory of planned behavior frame.

The literature review revealed different opinions on the role of attitudes in describing the behavioral intention. For example, [64] found that attitude was identified as the main factor that influenced the intention to purchase halal food products; [64,65] considers that attitudes could be an independent predictor of the intention to purchase sustainable brands; while [55] points out that a positive attitude does not always result in the desired behavioral intention. This last idea is often found in studies on sustainability. It is dangerous to use this one single construct alone as determinant of the actual behavior since there are many other studies identifying the "green attitude-behavior gap". This expression reveals that the favorable attitude towards sustainable products do not necessarily convert in purchasing those products [54,55]. Nonetheless, despite the fact that different studies assign different impacts of attitudes, this construct remains one of the pillars of the TPB model, as a predictor of purchase intentions and consequently purchase behavior [62]. As other studies suggest, the sustainable behavioral aim is well on the way to happen when an individual's attitudes toward environmentally concerned attitudes are positive and close relationships, such as friends or family, are probably going to empower an individual's conduct [66].

The second construct of TPB is the subjective norm which refers to the perceived social pressure to perform or not to perform a specific behavior [62]. An extended study done at the European Union level, covering all 28 member states, analyzed the purchasing behavior of green products, and the TPB results revealed that subjective norms have strongly influenced green purchase behavior in most European countries [67]. Thus, a growing number of Europeans share the need of taking into account environmental concerns when deciding which products to acquire, setting a good example for others, and their family or friends support this behavior the more often they buy green products [67]. Later and in a different cultural context, [51] examined the factors influencing sustainable purchasing behavior among students in Malaysian public universities, and their findings show how both subjective norms and perceived behavior control were significantly direct antecedents of sustainability-concerned behavior.

The degree of perceived behavioral control, or the perceived ease or difficulty in playing a behavior, constitutes the third antecedent of intention. As remarked in [62], it is based on past experiences and possible obstacles in the way of actual behavior. The results of [56] show that behavioral intention plays the most important role in explaining the sustainable consumption behaviors. In the same vein, [46] also consider that intentions determine crucially consumers' buying behavior of organic food, and the former are also shaped by attitudes and subjective norms. In another interesting study, [68] finds that consumers' purchasing intention is crucially influenced by both "normative" and "affective" behavioral determinants.

Other relevant studies include [69], that employs structural equation modeling to test, under the TPB frame, the antecedents and consequences of social media marketing on consumers' purchase intention to demand airline products and services. Other studies that employ the TPB model to disentangle the determinants of sustainable consumption include [70], or [71] for university students.

In the following section, we test the main underlying hypothesis of the TPB on the three antecedents of the change in the intention of buying sustainable and local brands during to the COVID-19 lockdown in young adults. Moreover, our model also includes the potential effect of environmental influences (social norms and behavioral control) on attention towards buying sustainable and local brands, and hence constituting an "indirect channel" towards intention. In our opinion, this simple approach could help not only to predict, but perhaps to influence a sustainability-concerned behavior in the future.

## 3. Data and Method

### 3.1. Data

The research data employed in our research were collected using an online survey process through Google Forms, sent to students between April and June 2020. According to [72], Internet-based surveys provide scholars with access to a unique population and

offer the possibility to gather data in a shorter period of time. Due to the uncertainty of the lockdown of 2020, time was an important element of the investigation. Another key determinant for choosing Internet-based surveys was the fact that face-to-face meetings were practically impossible. The questionnaire is adapted from [45] and related literature, and, in particular, respects the methodological recommendations of [73] on how to define a TPB survey using composite measures of attitudes and subjective norms.

The research population was made of 153 Romanian and 103 Spanish higher educated students between 20 and 30 years old. The sample was made by students of these two countries mainly for accessing data easily, as [72] suggests. The unique context made us focus on the available alternatives under those circumstances. Moreover, advancing on the literature review, it showed there are not many empirical data on the topic of sustainability in Romania, meanwhile there are contradictory results for the same issue for the Spanish market. Focusing on students as the target population of this investigation was chosen for various reasons: One reason is related to the fact that, right now, these young adults are shaping not only their personal identity, but also their consumer behavior [74]. Moreover, it is highly relevant to analyze how living through the pandemic and the restrictions related to COVID-19 have influenced their choices in terms of shopping patterns and brands choices [75]. Another reason for choosing students is that this population represents the consumers of tomorrow and therefore, their actions will determine the future of commerce and their interests, particularly in local or sustainable shopping, could have a great impact on future economies [55]; in line with what the Nielsen company was proclaiming in 2018 that the youngsters are "the future of sustainability in the US" [76].

Even though the sample was drawn on a convenience basis, as it includes university students of a "popular" degree, the Business Administration, it represents a general population group that was not easily reached in the lockdown period when the questionnaire was sent. We consider that this makes it particularly relevant to find similarities between the countries included in the research.

The potential use of convenience samples for empirical research is discussed in [77,78] or [79], among others. Moreover, [80] defend the use of homogeneous convenience samples, mainly because probability samples are cost-prohibitive and most available probability samples are ill-suited. They highlight their advantages when it comes to understanding population effects as well as subpopulation differences.

Moreover, being aware of the potential limitations due of differences in respondents' burden, the questionnaire employed included a limited number of questions. The respondent burden bias, and its potential consequences for survey-based empirical research, were initially underlined in [81], and more recently in [82].

An online survey, performed in Google Forms, was sent to higher educated students between 20 and 30 years old. Respondents were selected from a convenient sample, constituted by students from courses taught by the authors during the Spring semester 2020. Due to lockdown measures, the questionnaire was spread to the students using general tools available for the courses. Almost all students filled out the questionnaire.

The questionnaire included multi-item four constructs measurement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Respecting the recommendations of Azjen [62], all items that measured intentions and the perceived behavioral control were formulated in relation to the specific context in which the behavior occurs, and not a general one. For example, one of the intentions was measured by having stated clearly the context of the behavior as in "When the lockdown is over, I will buy more local brands."

All of the participants in the study had previously taken a course in Marketing and the issue of sustainable marketing had been one of the topics covered, which makes it likely to assume that their understanding of the research concepts was analogous.

Table 1 presents the variables included in the performed research. Attitudes towards sustainability were measured by affirmations concerning their interest on sustainable and local brands and the way these brands reacted during the lockdown. Direct measuring of

social norms consisted of two statements on a five-point Likert scale regarding the opinion of two relevant group of persons: "People who are important to me" and "My best friends". The last construct, behavioral control, was measured using two statements with reference to the perceived easiness of finding sustainable and local brands.

**Table 1.** Survey items and latent measures.

| Variable | Description | Latent |
|----------|-------------|--------|
| 10_br_lo | How your purchasing behavior has changed during lockdown [Now I buy more local brands (from my area, country)] | attitude (att_su) |
| 11_br_sc | How your buying behavior has changed during lockdown? [I am interested in brands that have been helping the society these days] | |
| 14_ft_su | When the lockdown is over [I'm going to search for more sustainable brands] | intention (int_su) |
| 15_ft_lo | When the lockdown is over [I will buy more local brands] | |
| 16_o_ft_ | Once the lockdown is over [People who are important to me think I should buy less] | social norms (snorm_su) |
| 17_o_ft_ | Once the lockdown is over [My best friends think I should buy more sustainable brands] | |
| 26_ft_ea | Once the lockdown is over [I'm sure I can easily find sustainable brands] | behavioral control (behv_su) |
| 27_ft_ea | Once the lockdown is over [I'm sure I can easily find local brands] | |

### 3.2. Structural Equation Modeling (SEM)

To test whether the theoretical model suggested by the TPB frame is supported by the data, we conduct quantitative research employing structural equation modeling (SEM). In essence, SEM extends the general linear model combining both factor and path analysis. Variables included in the SEM frame include observed (directly measured) variables (in our case the results from the survey), and latent variables, whose presence is inferred from what is measured or observed.

### 4. Results and Discussion

This section reports the results of the descriptive statistics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), reliability and validity of measurements.

Table 2 summarizes descriptive statistics for the variables employed to measure the latent components included in the TPB frame.

**Table 2.** Descriptive analysis.

| Variable | Item | EFA Loading | Mean | st.dev | Skewness | Kurtosis |
|----------|------|-------------|------|--------|----------|----------|
| **int_su** | 10_br_lo | 0.76 | 3.523 | 1.178 | −0.702 | −0.185 |
| | 11_br_lo | 0.52 | 3.633 | 1.144 | −0.782 | 0.023 |
| **att_su** | 14_ft_su | 0.53 | 3.461 | 0.973 | −0.468 | 0.443 |
| | 15_ft_lo | 0.95 | 3.715 | 0.966 | −0.584 | 0.172 |
| **snor_su** | 16_o_ft_ | 0.50 | 2.621 | 1.135 | 0.233 | −0.556 |
| | 17_o_ft_ | 0.97 | 2.832 | 0.974 | −0.274 | −0.048 |
| **beh_su** | 26_ft_ea | 0.70 | 3.672 | 0.887 | −0.497 | 0.191 |
| | 27_ft_ea | 0.96 | 3.793 | 0.868 | −0.638 | 0.404 |

Our estimations rely on structural equation modeling (SEM) to test whether the hypothesized specified relationships within the a priori proposed TPB model were acceptable to fit the present data. The structural model for the TPB frame was estimated using Lisrel

8.8 [83]. As remarked in [84], SEM is particularly appropriate when testing a series of complex relationships, as in our case.

In Tables 3 and 4 are presented the covariance and the implied correlation matrix for the variables included in the model.

**Table 3.** Covariance matrix.

|  | **10_br_lo** | **11_br_sc** | **14_ft_su** | **15_ft_lo** | **16_o_ft_** | **17_o_ft_** | **26_ft_ea** | **27_ft_ea** |
|---|---|---|---|---|---|---|---|---|
| **10_br_lo** | 1.39 | | | | | | | |
| **11_br_sc** | 0.53 | 1.31 | | | | | | |
| **14_ft_su** | 0.32 | 0.50 | 0.95 | | | | | |
| **15_ft_lo** | 0.71 | 0.46 | 0.47 | 0.93 | | | | |
| **16_o_ft_** | 0.22 | −0.03 | 0.07 | 0.19 | 1.29 | | | |
| **17_o_ft_** | 0.26 | 0.22 | 0.21 | 0.20 | 0.47 | 0.95 | | |
| **26_ft_ea** | 0.26 | 0.07 | 0.19 | 0.27 | 0.15 | 0.09 | 0.79 | |
| **27_ft_ea** | 0.37 | 0.10 | 0.12 | 0.34 | 0.14 | 0.01 | 0.52 | 0.75 |

**Table 4.** Correlation matrix.

|  | **10_br_loc** | **11_br_sc** | **14_ft_su** | **15_ft_loc** | **16_o_ft_ls** | **17_o_ft_su** | **26_ft_eassu** | **27_ft_easlo** |
|---|---|---|---|---|---|---|---|---|
| **10_br_loc** | 1.000 | | | | | | | |
| **11_br_sc** | 0.394 | 1.000 | | | | | | |
| **14_ft_su** | 0.281 | 0.449 | 1.000 | | | | | |
| **15_ft_loc** | 0.624 | 0.416 | 0.503 | 1.000 | | | | |
| **16_o_ft_ls** | 0.167 | −0.020 | 0.063 | 0.173 | 1.000 | | | |
| **17_o_ft_su** | 0.231 | 0.201 | 0.227 | 0.216 | 0.421 | 1.000 | | |
| **26_ft_eassu** | 0.251 | 0.066 | 0.221 | 0.321 | 0.153 | 0.104 | 1.000 | |
| **27_ft_easlo** | 0.360 | 0.101 | 0.137 | 0.411 | 0.147 | 0.014 | 0.676 | 1.000 |

We make use of path analysis to estimate for our sample a structural model including the relationships implied by the TPB frame. In the following path diagram presented in Figure 2, we present the results for the estimated path:
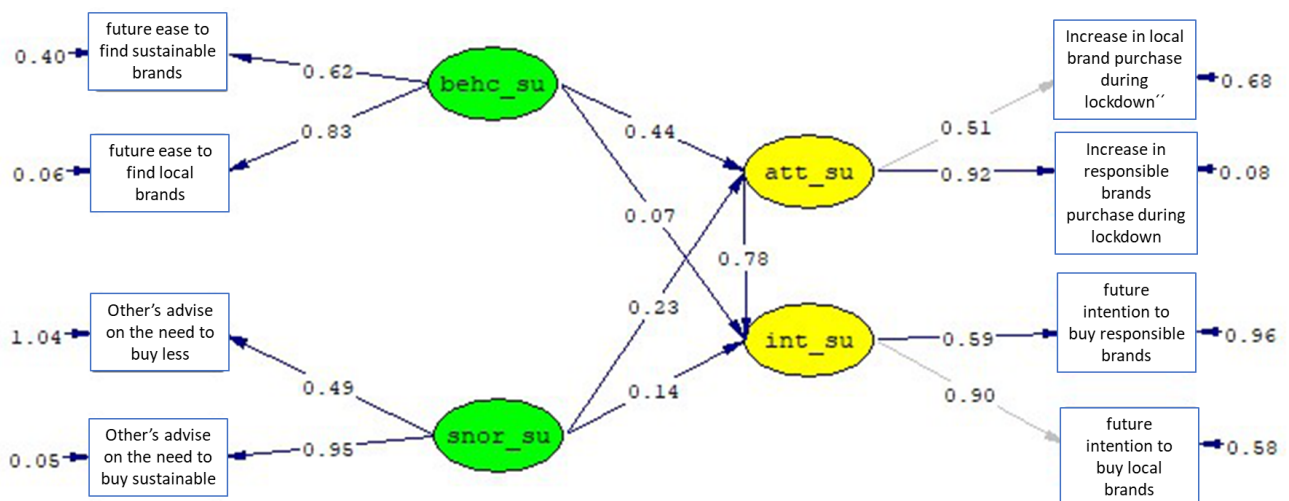


Chi-Square=69.40, df=14, P-value=0.00000, RMSEA=0.125

**Figure 2.** Estimated path for the theory of planned behavior (TPB) model.

The implied structural equations are presented in Equations (1) and (2).

$$attitude_i = \underset{(0.084)}{0.23}\,behcontrol_i + \underset{(0.091)}{0.44}\,socialnorms_i + \underset{(0.18)}{0.76}\,u_i \tag{1}$$

$$intention_i = \underset{(0.12)}{0.78}\,attitude_i + \underset{(0.075)}{0.14}\,behcontrol_i + \underset{(0.083)}{0.075}\,socialnorms_i + \underset{(0.18)}{0.25}\,v_i \tag{2}$$

The estimated model fits reasonably well the data, and model fit indices calculated exceed the minimum suggested values. The normal theory weighted least squares Chi-squared is $\chi^2 = 69.40$ for 14 degrees of freedom, and consequently $\chi^2/df = 4.96$ ($p = 0.000$). The goodness of fit index is $GFI = 0.94$ and the comparative fit index is $CFI = 0.92$. The Tucker–Lewis index is also acceptable as $TLI = 0.96$. Root mean square error of approximation has a value of $RMSEA = 0.08$. Those model fit indices exceed the minimum criteria recommended.

Table 5 displays the covariance matrix for the latent variables estimated for our TPB model.

**Table 5.** Covariance matrix of latent variables.

|  | att_su | int_su | behc_su | snor_su |
|---|---|---|---|---|
| **att_su** | 1.01 | | | |
| **int_su** | 0.86 | 1.00 | | |
| **behc_su** | 0.24 | 0.33 | 1.00 | |
| **snor_su** | 0.45 | 0.43 | 0.03 | 1.00 |

*4.1. Construct Validity and Composite Reliability*

To evaluate the measurement model, construct validity and composite reliability were examined. Results are presented in Table 6.

Construct validity shows if an observed measure actually represents the construct that it is intended to measure. It was evaluated based on factor loadings analysis, composite reliability and variance extracted. Regarding the first issue, the majority of the factor loadings of the items in this study were above the recommended level of 0.6.

In statistical models applied to psychometrics, congeneric reliability $\rho_C \rho_C$, commonly referred to as composite reliability, construct reliability and coefficient omega, is the second most commonly used reliability factor after tau-equivalent reliability ($\rho_T$, and is often recommended as its alternative. $\rho_C$'s formula was first introduced by [85] in matrix notation. Its conventional formula first appeared in [86].

Its more often used formula is given by:

$$\rho_C = \frac{\left(\sum_{i=1}^{k}\lambda_i\right)^2}{\left(\sum_{i=1}^{k}\lambda_i\right)^2 + \sum_{i=1}^{k}\sigma_{e_i}^2} \tag{3}$$

The construct reliability (CR) of the four constructs were above the recommended level of 0.6, reflecting the internal consistency of the constructs and the degree to which the observed variables can be used as indicators of the same unobserved concept.

Finally, the average variance extracted (AVE) is calculated to measure the overall amount of variance in the indicators associated to the latent construct. The average variance extracted was first proposed by [87]. The average variance extracted can be calculated as follows:

$$AVE = \frac{\sum_{i=1}^{k}\lambda_i^2}{\sum_{i=1}^{k}\lambda_i^2 + \sum_{i=1}^{k}Var(e_i)} \tag{4}$$

Here, $k$ is the number of items, $\lambda_i$ the factor loading of item $i$ and $Var(e_i)$ the variance of the error of item $i$.

According to the Fornell–Larcker criterion in [87] for covariance-based structural equation models, the average variance extracted has often been used to assess discriminant validity based on the following rule of thumb: Based on the corrected correlations from the CFA model, the AVE of each of the latent constructs should be higher than the highest squared correlation with any other latent variable. If that is the case, discriminant validity is established on the construct level.

Estimated AVE ranged between 0.5 and 0.7, exceeding the recommended level of 0.5 as suggested by [88]. To sum up, the measurement model demonstrated adequate reliability and validity.

$$VE = \frac{\sum_{i=1}^{k} \lambda_i^2}{n} \tag{5}$$

**Table 6.** Factor loadings, instrument validity and instrument reliability measures.

| Variables | Items | Loadings | CR | AVE |
|---|---|---|---|---|
| snor_su | 16_o_ft_ | 0.50 | 0.66 | 0.52 |
| | 17_o_ft_ | 0.96 | | |
| behc_su | 26_ft_ea | 0.62 | 0.82 | 0.7 |
| | 27_ft_ea | 0.83 | | |
| att_su | 14_ft_su | 0.92 | 0.73 | 0.59 |
| | 15_ft_lo | 0.51 | | |
| int_su | 10_br_lo | 0.59 | 0.59 | 0.5 |
| | 11_br_sc | 0.9 | | |

*4.2. Hypothesis Testing*

The structural paths indicate that attitude and subjective norms, other than perceived behavior control, positively affected intention to buy sustainable brands. In Table 7, we summarize the results of hypothesis testing, as their statistical significance.

**Table 7.** Results of hypothesis testing and statistical significance.

| Hypotheses | Path | β | *t*-Value | *p*-Value | Result |
|---|---|---|---|---|---|
| H1 | "att_su" on "int_su" | 0.78 | 6.73 | *** | Supported |
| H2 | "snor_su" on "int_su" | 0.14 | 1.83 | * | Supported |
| H3 | "behc_su" on "int_su" | 0.07 | 0.9 | NS | Not Supported |
| H4 | "snor_su" on "att_su" | 0.23 | 2.73 | *** | Supported |
| H5 | "behc_su" on "att_su" | 0.44 | 4.82 | *** | Supported |

*** $p < 0.001$; * $p < 0.05$; NS = Not Significant.

Our results suggest the fulfillment of the TPB model hypothesis for the sample analyzed. Attitudes toward sustainable brands (ATT) had a significant positive effect on intention (INT). In addition, subjective norms (SN) and perceived behavioral control (PBC) influenced favorably the intention (INT) to purchase sustainable brands.

An interesting contribution of our paper is the finding of an indirect influence of both SN and PBC to INT, as they are also affecting ATT. This element shows a potential strategy to enhance ATT, by spreading a favorable message to it.

When comparing the two countries analyzed, we also observe differences in intention (INT), which is slightly higher in the Spanish sub-sample. Despite social norms and

behavioral control exhibiting a higher average for the Romanian, sub-sample, individual attitude (ATT) reveals to be superior for the Spanish sub-sample.

The results of this investigation are in line with other studies on the behavior towards sustainable products. For example, [67] showed that Romania together with Lithuania, Italy and Bulgaria were the countries in which people buy green products the most seldom.

Moreover, in their study on 550 participants, [65] proved that attitudes, beliefs, perceived behavior control, subjective norms and past buying behavior are independent predictors of intention to purchase sustainable brands. Taking into account that many studies are considering intention as having the most important role in explaining the behavior [56], one conclusion of this study could be that Spanish young people will be more likely to purchase sustainable and local brands then the Romanian group.

That is, as in [89], detected intentions capture the motivational factors that influence future green purchase behavior of consumers. In other words, different levels of personal or situational factors could influence the extent to which attitudes are predictive of or translated in behavioral intention.

In the same vein, [90] argue that adolescents are bound to guarantee they plan to acquire organically or locally produced food because if their higher involvement and concerns about potential negative consequences of particular production techniques. Similarly, [91] found that the higher the environmental concerns and involvement of an individual, the more likely s/he is to buy sustainable foods.

## 5. Conclusions

The current research studies the impact of the lockdown in 2020 due to COVID-19 on consumer behavior. The aim of this research was to study the determinants of intention to purchase sustainable brands after the unique experience of living under many restrictions during 2020.

For this purpose, we employed the well-known frame provided by the theory of planned behavior, to model the determinants of changes in the intention to buy sustainable-concerned and local brands for young adults. Following the TPB frame, the understanding of changes in intention would be helpful to predict their engagement in a sustainable shopping behavior in the future.

The investigation reflects upon the consumer behavior for sustainable products in Spain and Romania, and the results can contribute to the expansion of the literature with respect to the topic for the aforementioned countries and even for a European level. A better understanding of the consumer behavior is extremely important to assess companies, marketers and policymakers in raising awareness towards the brands that have a lower impact on the environment.

Results confirm the validity of the TPB model hypothesis for the sample analyzed, as attitudes toward sustainable brands (ATT) and also behavioral control (BEHC) and social norms (SN) have a significant positive effect on intention (INT) to purchase sustainable brands. In addition, subjective norms (SN) and perceived behavioral control (PBC) influenced favorably the intention (INT). Finally, the comparison of the individual countries sample suggests a potential room for idiosyncratic paths, as they show differences in intention (INT), which is slightly higher in the Spanish sub-sample. Moreover, although social norms and behavioral control present higher values for the Romanian, sub-sample, individual attitude (ATT) reveals to be superior for the Spanish sub-sample.

An interesting insight from the research is the finding that social norms and behavioral control are also affecting attitudes, which represent an indirect influence on the intention, and therefore on future sustainable shopping behavior. In our opinion, this issue constitutes a potential alternative strategy path to enhance intention, by spreading a favorable message to it, creating positive attitudes. This result is in line with previous research [92], indicating that contextual factors can prevent positive attitudes from being expressed in action. The previously mentioned results have deep implications for practitioners. The TPB model is based on the idea that the higher the intention to do an action, the more likely the person

will really take action and perform the behavior. In the context of this research, all these aforementioned insights highlight the importance of having positive attitudes towards sustainable and local brands. Nevertheless, an attitude is not being created in isolation, but rather it is an evaluation which is being constantly shaped by the environment in which one person lives. If the desired outcome is people to purchase more sustainable and local brands, than it is necessary for all participants of the social and economic life to do their part in shaping these favorable attitudes towards sustainability. Therefore, governments and organizations should dedicate part of their efforts (and budgets) to create programs and social marketing campaigns about the impact of consumerism and ways to lower people's environmental impact. The debate about sustainability should not end only to some campaigns a year, but they should be present in our daily conversations. In this way, in time, consumers will perceive that this topic is important since so many others are talking about it, building like this the social norms construct of TPB. Additionally, companies who are doing a great job in creating and selling sustainable products should leverage onto marketing activities and be more visible, so we can build the other construct of TPB, which is the perceived behavioral control.

In terms of the relevance of the research, we consider that the topic and the results are highly important for three main reasons. Firstly, it is relevant to analyze and reveal how the consumer behavior is shaped by life experiences, and more than that, how flexible it can be. For companies, this is relevant since marketers are spending millions of dollars every year to analyze the consumption patterns of their customers. In this case, such an investigation is showing that companies should not take for granted the loyalty of their customers, but rather be in constant alert and flexible to change as the customers are changing. Secondly, the results of this investigation add to the importance of companies to take more actions towards sustainability. The public is more informed, and there is an important segment of the population that is checking and questioning what their favorite brands or, in general, companies are doing regarding the social and environmental responsibility. According to Al Iannuzzi [93], summing the segments of "seekers" and "actives" customers, more than half of the North American market is made of customers that are searching for information regarding the sustainability processes and actions of the brands. Thirdly, another important insight of this study is related to the two-country comparison. There is not much empirical research for the Romanian market, and only few studies comparing data from different European countries in terms of sustainability. The results are showing that even if the countries are very different, culturally and economically speaking, the interest for young adults for sustainable and local brands is equally high. Both samples are showing the intentions to purchase more sustainable brands, even if they differ on attitudes.

The outcomes are adding to the literature on sustainability, and understanding the effects of COVID-19 on consumer behavior. Additionally, the results can help better understand the importance of sustainability in Spain and Romania, countries that are not commonly chosen in investigations. As the literature review showed there are contradictory results on the topic of sustainability for these countries and for Romania in particular, there are not so many studies that reflect over this subject. The results of this study are pointing out that, at least for the populations considered, in order to really act and purchase sustainable products, it is necessary to increase the positive attitudes and as a result the intentions to purchase from the sustainable brands. Attitudes are shaped by the context, being an inner result after evaluating what society thinks is good or not, how easy is to purchase specific products, how meaningful is consuming less and demanding more. Therefore, it is highly important to offer support to practitioners in building policies that encourage a sustainable lifestyle.

*Limitations and Future Research*

One of the limitations of this exploration is the population sample being formed only by students and therefore, not covering different demographics. At the same time, the generalization of the results should be done with caution, given that some studies show that

higher education levels are associated with higher levels of organic consumption [94]. In addition to the level of education, the shopping budget could be another element through which students differentiate themselves from adults with a stable income. Hence, the students' shopping behavior will depend on their limited budget. Nevertheless, young adults are an important target audience for many businesses, and so it is relevant to understand them better.

As it had been already mentioned, many studies prove that there is a disjunction between the attitudes towards sustainable or green products and the actual behavior of purchasing those products [54,55,95], therefore, it would be interesting to repeat the survey after the COVID-19 danger is over and compare the answers. It would finally reveal if the current intended behavior really did take place, or if the intention was built out of fear, anxiety and the uncertainty determined by the lockdown.

As remarked above, one potential limitation of the research is the use of a sample drawn on a convenience basis. In our opinion, the implied potential bias is partially mitigated as the sample was obtained from a "popular" degree, the Business Administration, that represents a general population group that was not easily reached in the lockdown period when the questionnaire was sent. We also consider that this fact makes it especially interesting to find similarities between the countries represented in the sample. In addition, to reduce potential limitations from differences in respondents' burden, the questionnaire employed included a limited number of questions. Both issues deserve a special remark to be taken into consideration when designing future research.

Finally, future research might also focus on the development of a integral model to analyze the factors that determine sustainable behavior among students. Therefore, there is still much to be revealed through research in terms of the way the pandemic outbreak, the lockdown and social distancing changed individual shopping and consumption behaviors, or if these changes are going to last long term. It is highly relevant to investigate such repercussions because understanding the effects of the pandemics on consumers' lives and the changes in their behavior during and after the crisis could provide vital information relevant both for businesses and public policy makers alike.

**Author Contributions:** Conceptualization, A.A.; methodology, J.S.; formal analysis, A.A. and J.S.; investigation, L.A. and A.A.; writing—original draft preparation, L.A. and A.A.; writing—review & editing, A.A. and J.S. All authors have read and agreed to the published version of the manuscript.

**Data Availability Statement:** Data available on request from the authors.

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

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